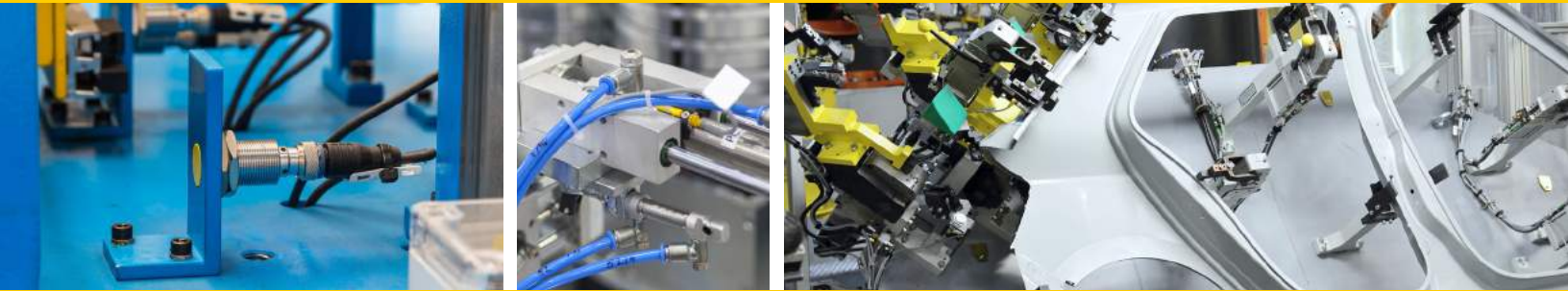


Your Global Automation Partner

**TURCK**



# Sensors Catalog

## Proximity

# A Global Leader in Industrial Automation

Turck's sensors, connectivity, and fieldbus technology products are built to be the best. As one of the most **prominent** sensor manufacturers **in the world**, we even back our sensors with a **lifetime warranty**. Turck works by bringing **rugged engineering** solutions to your industrial automation applications.

**85,000+**  
SOLUTIONS

**50+**  
YEARS OF INNOVATION

**2,000+**  
EXPERIENCED SALES REPRESENTATIVES

Pioneer in non-contact  
**sensing** technology

Developed innovative **connectivity**  
solutions in response to our customers' needs

Recognized the need for advanced **I/O solutions**  
in harsh duty environments

**SUPPORT &  
DEDICATED SERVICE**

**EXTENSIVE WARRANTY**



**4,800+**  
APPLICATION EXPERTS

RESPOND  
and SOLVE **over 1,200** inquiries  
per day



Strategically placed manufacturing facilities in the

**USA** with **30** GLOBAL  
SUBSIDIARIES

**GLOBAL BUT LOCAL...**

**60** representations worldwide

# Innovative Sensing Solutions

At Turck, we understand that every application is unique, which is why we dedicate ourselves to finding the optimal engineered solution for all applications. Whether you need a sensor, cordset, or network I/O, Turck's range of innovative manufacturing capabilities and engineering expertise allows us to work beyond the scope of our competitors. We utilize the most up-to-date manufacturing processes, including EDM, molding, and laser trimming, ensuring that our products not only survive, but thrive in the harshest of conditions.

## Complimentary Sensor Audits

We consider it our job to help our customers decrease failures and reduce operation downtime, which is why we offer a complimentary audit program. The audit helps to identify, evaluate, and solve problem areas where sensors and cordsets are continually damaged or destroyed. This reduction in downtime will reduce your costs and ensure you get the most value out of your production processes.

## Lifetime Warranty

We have the utmost confidence in our products, and you should, too! Solutions from Turck are not only built to work, but built to last. All of our products come with extensive warranties, and many of our sensors have an optional lifetime warranty against sensor failure, so you can rest easy knowing that you have invested in a dependable solution.

## GLOBAL LEADERS

PROVIDING CUSTOMERS WITH SENSING SOLUTIONS

- Sensing ranges from .08 – 100 mm
- Overmolds
- Custom designed sensor housings
- Pigtails / Mold-ons
- Mating cordsets
- Free software and support
- Wide range of accessories
- Kitting

## MATERIALS

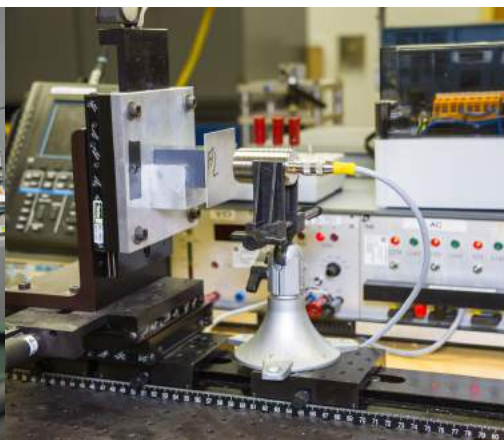
BUILT TO LAST IN THE HARSHTEST ENVIRONMENTS

- Stainless steel
- Overmolds
- Viton
- PUR/TPU/TPE
- Armored Cable
- PTFE and Weldguard coating
- FDA Approved Washdown



## SHIPPING

**SHIP ONE-TO-ONE MILLION, WITH NO LIMIT**  
We understand that some applications require less parts, which is why we offer flexible minimum orders to ensure you only receive the number of parts you need.



## TESTING

**OUR PRODUCTS UNDERGO EXTENSIVE TESTING**  
To continuously deliver solutions of only the highest quality, Turck products undergo a rigorous set of tests. These tests are in accordance to national and international standards, such as IEC and UL. Our products meet and exceed industry standards, ensuring their survivability and dependability in all applications.



## INVENTORY






**USE TURCK'S VAST NETWORK OF DISTRIBUTORS, OR...**  
Get immediate access to your Turck products with your own on-site Turck vending machine. Convenient access to your most used products can help save money and reduce downtime.













# Content






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<b>Analog Sensors</b>	<b>D1</b>
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<b>Index</b>	<b>K1</b>

# Rectangular Inductive Sensor Selection Guide

Rectangular Style Sensors					
					
Housing	4.7 mm	5.5 mm	6 mm	8 mm	10 mm
Sensing Range	2 mm	2 - 3.5 mm	3 mm	5 - 8 mm	2 - 5 mm
Pages	A11	A11	A11	A13 - 16	A17
Features				Uprox+	Uprox+

Rectangular Style Sensors					
					
Housing	Variable, with pigtail	10 mm	12 mm	14 mm	20 mm
Sensing Range	2 - 7 mm	2 - 4 mm	2 - 5 mm	10 - 20 mm	15 - 25 mm
Pages	A19	A21	A23	A25	A27 - 30
Features			Uprox+		

Rectangular Style Sensors					
					
Housing	18 mm	25 mm	30 mm	40 mm	40 mm
Sensing Range	5 - 10 mm	10 mm	15 mm	20 mm	15 - 50 mm
Pages	A31	A31	A31	A33	A35 - 40
Features				Uprox+	Uprox+

Rectangular Style Sensors					
					
Housing	40 mm	80 mm	80 mm	90 mm	Variable
Sensing Range	15 - 50 mm	40 - 75 mm	50 - 75 mm	60 - 100 mm	2 - 50 mm
Pages	A41 - 46	A47 - 50	A51	A53	A55 - 58
Features	Uprox+	Uprox+	Uprox+		Intrinsically Safe

We reserve the right to make technical alterations without prior notice.

## Rectangular Inductive Sensor Part Number Key

**B** **i** **15** - **Q** **20** - **A** **P** **6** **X2** **Wiring Option\*** **Special Option Code\*\***

### Mounting

- B = embeddable
- N = nonembeddable

### Principle of Operation

- i = inductive

### Rated Operating Distance (mm)

### Sensing Characteristics

- S = side sensing on Q10S sensor
- U = Uprox® Sensor

### Housing Style

#### Rectangular

- K = smooth
- Q = metal or plastic, various rectangular styles

#### Limit Switch

- CA = Stubby®, short aluminum housing, connector
- CK = Stubby, short plastic housing, connector
- CP = Combiprox®, plastic housing, terminal chamber base with removable sensor

### Housing Height (mm)

### Number of LEDs

- (blank) = no LEDs
- X = 1 LED
- X2 = 2 LEDs

### Voltage Range

#### AC/DC: (No SCP)\*\*

- 3 = 20-250 VAC, 10-300 VDC
- 31 = 20-250 VAC, 10-300 VDC, plastic barrel

#### AC/DC: (Latched SCP)

- 30 = 20-250 VAC, 10-300 VDC 400 mA
- 32 = 20-250 VAC, 10-300 VDC 400 mA

#### DC:

- 4 = 10-65 VDC, polarity protected, pulsed SCP\*\*
- 6 = 10-30 VDC, polarity protected, pulsed SCP

\*\*SCP = short-circuit and overload protection

### Output

- D = 2-wire DC (transistor output)
- DZ = 2-wire AC/DC, (power MOSFET output)
- N = NPN transistor (current sinking)
- P = PNP transistor (current sourcing)
- Z = 2-wire AC or 2-wire AC/DC

### Output Function

- A = normally open (N.O.)
- F = connection programmable (N.O. or N.C.)
- V = complementary outputs: one N.O., one N.C.
- Y0 = NAMUR output, requires switching amplifier
- Y1 = NAMUR output, requires switching amplifier/ATEX approved

### Secondary Housing Modifier

- SR = straight terminal chamber

### NOTE:

Part number keys are to assist in identification only.  
Verify new part numbers with factory; some configurations are not possible.

## Wiring Options\*

### A. Connectorized Sensor

**Bi15 - Q20 - AN6X2 - H1 1 4 1**

### Connector Family

- B1 = Minifast®, Metal, Male
- B2 = Minifast, Plastic, Male
- B3 = Microfast®, Metal, Male
- H1 = Eurofast®, Metal or Plastic, Male
- V1 = Picofast®, Metal, Male (Q08 snap or thread)
- V2 = Picofast, Snap and M8x1, Male (Q08 snap or thread)

### Connector/Sensor Transition

- 1 = straight

### Wiring Configuration

#### Example:

- 1 = Standard
- 3 = N.C. DC Output on Pin 4 (for US)

### Number of Pins

### B. Potted Cable

**Bi15 - Q20 - AN6X2 - 7M**

### Cable Length

- Blank = 2 meter cable
- 7M = 7 meter cable

## Special Option Codes\*\*

**Bi - 5 - Q08 - AN6XS /S34**

### Option Code

#### Example:

- /S34 = Weld Field Immune
- /S97 = -40 °C (-40 °F) Operating Temperature
- /S100 = +100 °C (+212 °F) Operating Temperature
- /S1590 = CK/CA40 sensors with Weldguard laminate
- /S1591 = CA40 sensors with Weldguard and Armorguard

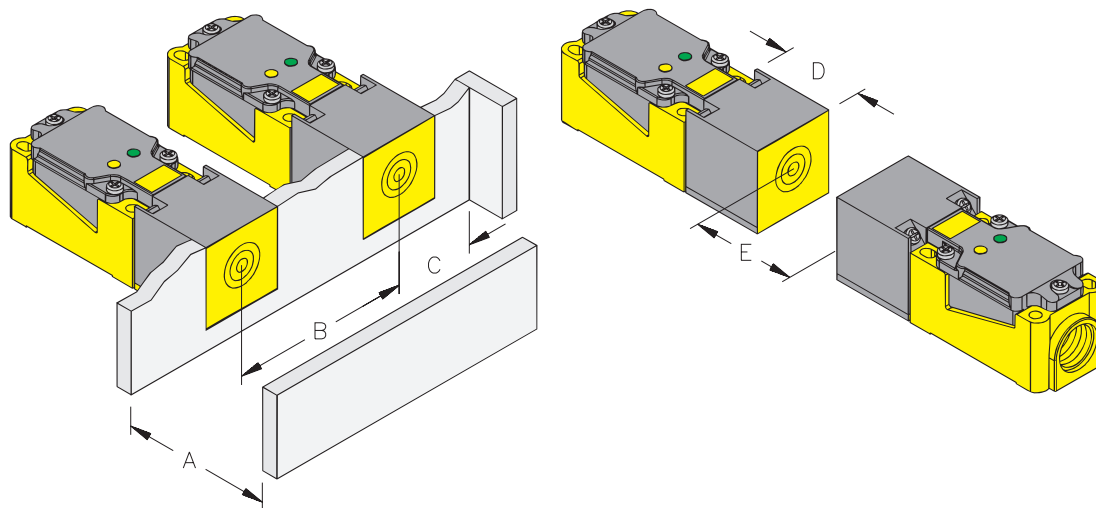
# Rectangular Inductive Sensors

## Mounting

Turck inductive proximity sensors are manufactured with a shielded coil, designated by “Bi” in the part number, and a nonshielded coil, designated by “Ni” in the part number (see page A2). Embeddable (shielded) units may be safely flush-mounted in metal. Nonembeddable (nonshielded) units require a metal free area around the sensing face. Because of possible interference of the electromagnetic fields generated by the oscillators, minimum spacing is required between adjacent or opposing sensors.

It is good engineering practice to mount sensors horizontally or with the sensing face looking down. Avoid sensors that look up wherever possible, especially if metal filings and chips are present.

## Embeddable Mounting Characteristics - Rectangular Housings



### Flush Mountable - CK40 and CP40

Housing Type	Sensor Type	A	B	C	D	E
CP40/CK40	Bi15U	45.00	80.00	40.00	40.00	90.00
CP40/CK40	Bi15	45.00	80.00	40.00	40.00	90.00
CP40/CK40/CA40	Bi20U	60.00	80.00	40.00	40.00	120.00
CP40	Bi20	60.00	80.00	40.00	40.00	120.00
CP40/CK40	Bi30U	90.00	80.00	40.00	40.00	180.00

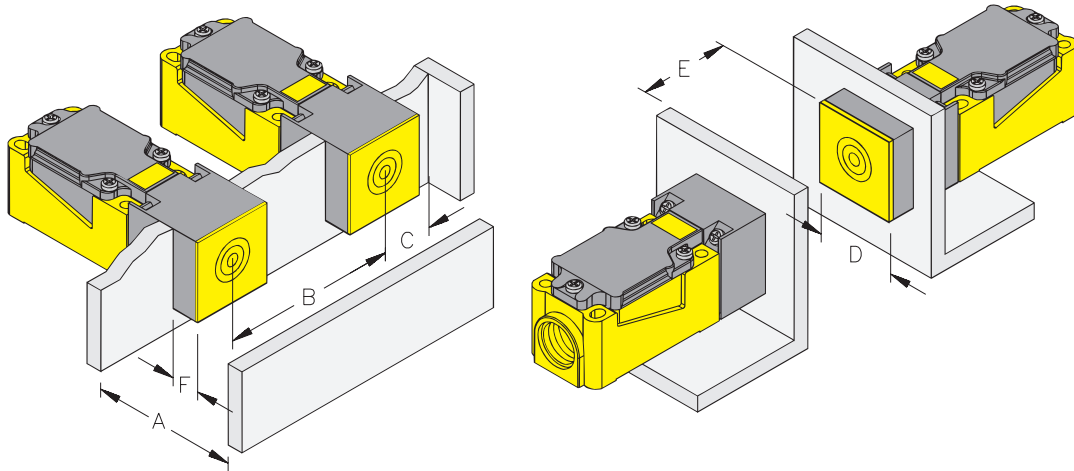
Dimensions are in mm.

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors

## Nonembeddable Mounting Characteristics - Rectangular Housings

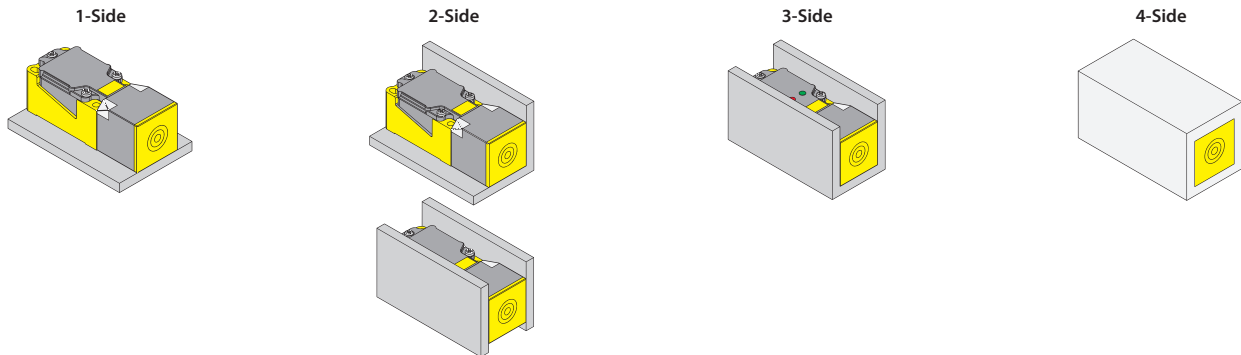


### Non - Flush Mountable - CA25, CK40, and CP40

Housing Type	Sensor Type	A	B	C	D	E	F	1-Side	2-Side	3-Side	4-Side
CP/CK40	Ni20	60.00	120.00	60.00	40.00	120.00	20.00				
CP/CK40	Ni25U	75.00	240.00	60.00	40.00	150.00	30.00	Sr=22 mm*	Sr=20 mm*	Sr=17 mm*	Sr=13 mm*
CP/CK40	Ni25	75.00	120.00	60.00	40.00	150.00	40.00				
CP/CK40	Ni35U	105.00	240.00	60.00	40.00	210.00	30.00	Sr=28 mm*	Sr=24 mm*	Sr=19 mm*	
CP/CK40	Ni35	105.00	180.00	60.00	40.00	210.00	40.00				
CP/CK40	Ni40U	120.00	240.00	60.00	40.00	240.00	30.00				
CP/CK40	Ni40	120.00	180.00	60.00	40.00	240.00	40.00				
CP/CK40	Ni50U	105.00	240.00	60.00	40.00	240.00	30.00	Sr=35 mm*	Sr=25 mm*	Sr=20 mm*	Sr=15 mm*

Dimensions are in mm.

\*Uprox Non-embeddable flush mounting guidelines. The above Uprox Ni sensors with DC outputs can be flush mounted because the sensor automatically compensates for metal alongside its sensing face by decreasing the sensing range, preventing the output from locking on.

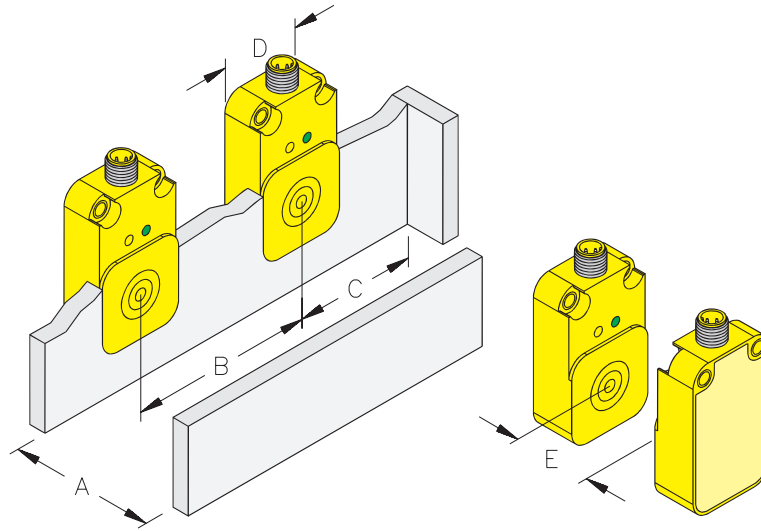


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Rectangular Inductive Sensors

# Rectangular Inductive Sensors

## Embeddable Mounting Characteristics - Rectangular Housings



### Flush Mountable

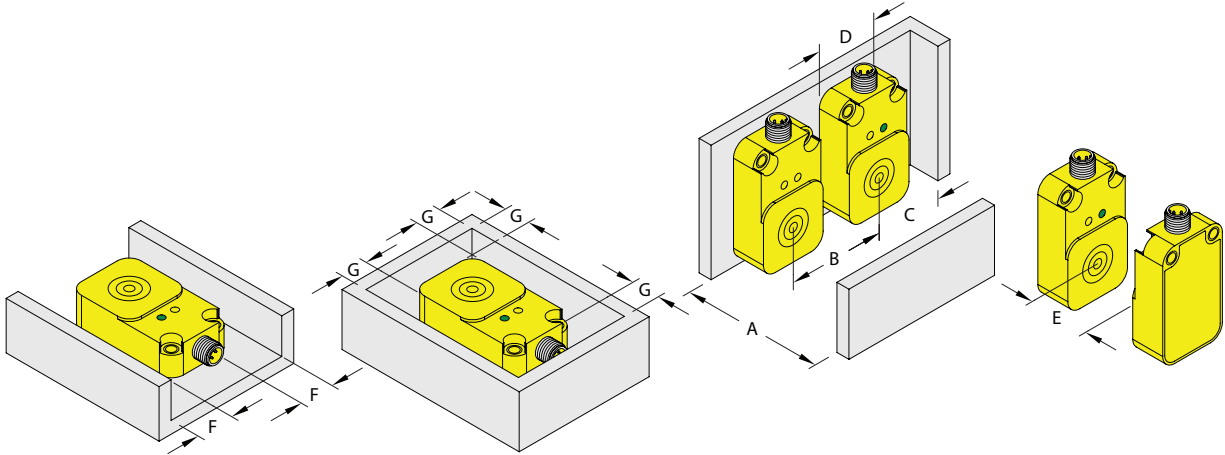
Housing Type	Sensor Type	A	B	C	D	E
Q4.7	Bi2	6.00	16.00	12.00	8.00	12.00
Q5.5	Bi2	6.00	16.00	8.00	8.00	12.00
Q06	Bi3	9.00	35.00	17.00	17.30	18.00
Q08	Bi5	24.00	40.00	20.00	20.00	48.00
Q08	Bi5U	15.00	40.00	20.00	20.00	30.00
Q08	Bi7	24.00	40.00	20.00	20.00	24.00
Q08	Bi8U	48.00	40.00	20.00	20.00	48.00
Q10	Bi8	24.00	50.00	25.00	25.00	48.00
Q10	Bi8U	24.00	50.00	25.00	25.00	48.00
Q14	Bi10	30.00	45.00	30.00	30.00	60.00
Q14	Bi10U	30.00	45.00	30.00	30.00	60.00
Q20	Bi15	45.00	60.00	40.00	40.00	90.00
Q20	Bi15U	45.00	60.00	40.00	40.00	90.00
CP80	Bi40	120.00	160.00	80.00	80.00	240.00
Q80	Bi50U	150.00	240.00	80.00	80.00	300.00

Dimensions are in mm.

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# Rectangular Inductive Sensors

## Embeddable Mounting Characteristics - Rectangular Housings

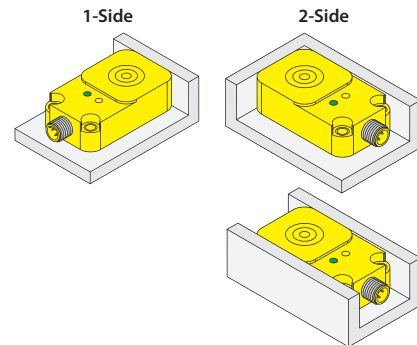


### Non-flush Mountable - Minimum Distances - Q5.5, Q14, Q20, CP80, Q80 and K90

Housing Type	Sensor Type	A	B	C	D	E	F	G	1-Side	2-Side	3 & 4-Side
Q5.5	Ni3.5	11.00	24.00	12.00	8.00	21.00	4.00	8.00			
Q14	Ni20	60.00	90.00	45.00	30.00	120.00	20.00	40.00			
Q20	Ni25	75.00	120.00	60.00	40.00	150.00	25.00	50.00			
CP80	Ni40	120.00	240.00	120.00	80.00	240.00	80.00	80.00			
Q80	Ni75U	225.00	240.00	60.00	80.00	450.00	80.00	80.00	Sr=50 mm*	Sr=45 mm*	Sr=40 mm*
CP80	Ni75U	225.00	240.00	120.00	80.00	450.00	80.00	80.00			
K90	Ni60	180.00	270.00	135.00	90.00	360.00	60.00	90.00			
K90SR	Ni100U	300.00	270.00	90.00	90.00	600.00	100.00	200.00	Sr=70 mm*		

Dimensions are in mm.

\*Uprox Non-embeddable flush mounting guidelines. The above Uprox Ni sensors with DC outputs can be flush mounted because the sensor automatically compensates for metal alongside its sensing face by decreasing the sensing range, preventing the output from locking on.

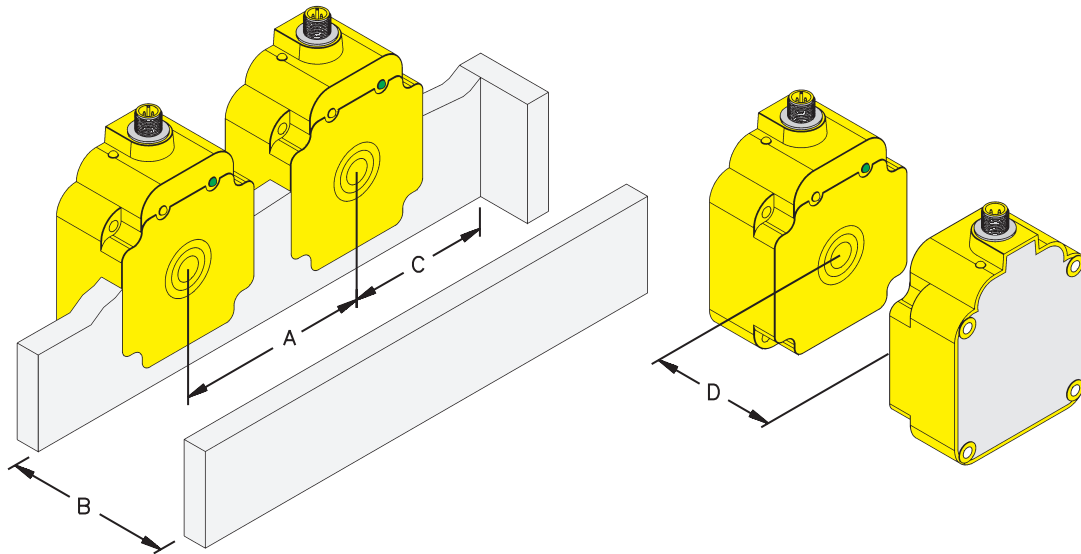


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Rectangular Inductive Sensors

# Rectangular Inductive Sensors

## Embeddable Mounting Characteristics

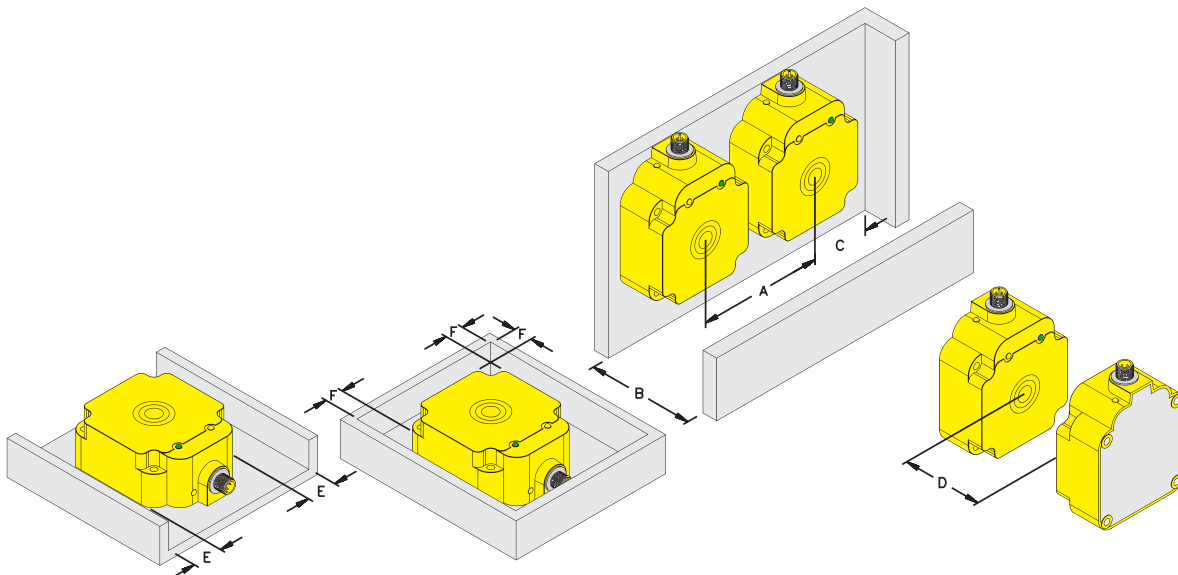


### Embeddable, Square Sensors

Part Number	A	B	C	D
Bi50U-Q80	240.00	150.00	80.00	300.00

Dimensions are in mm.

## Nonembeddable Mounting Characteristics



### Nonembeddable, Square Sensors

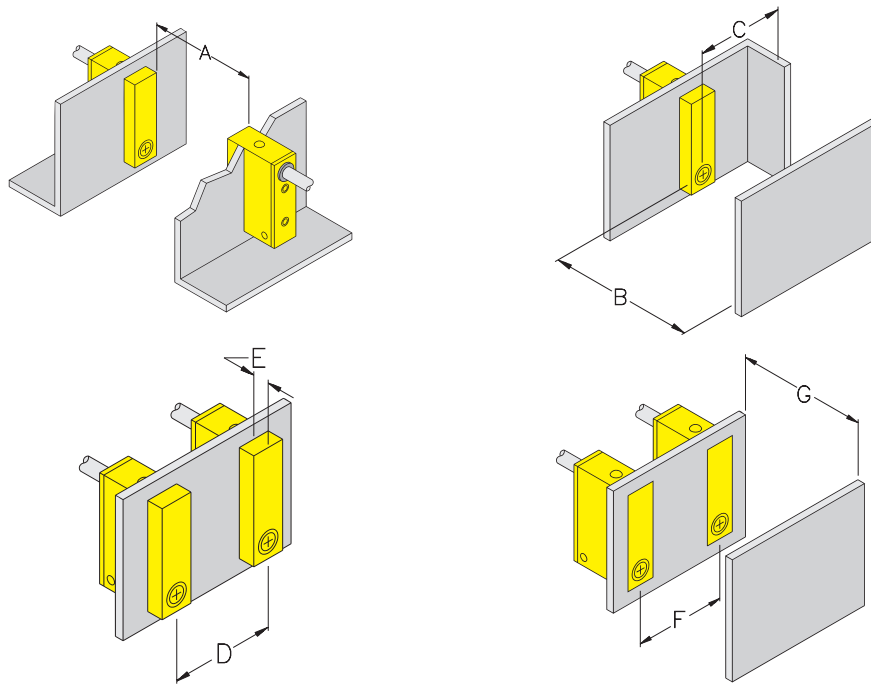
Part Number	A	B	C	D	E	F
Ni75U-Q80	240.00	225.00	60.00	450.00	80.00	80.00

Dimensions are in mm.

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# Rectangular Inductive Sensors

## Embeddable Mounting Characteristics - Rectangular Housings



We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

### Flush Mountable

Housing Type	Sensor Type	Housing	A	C	F	G
Q6.5	Bi1	6.50	6.00	7.00	13.00	3.00
Q10S	Bi2	10.00	12.00	10.00	20.00	6.00
Q12	Bi2	12.00	12.00	12.00	24.00	6.00

Dimensions are in mm.

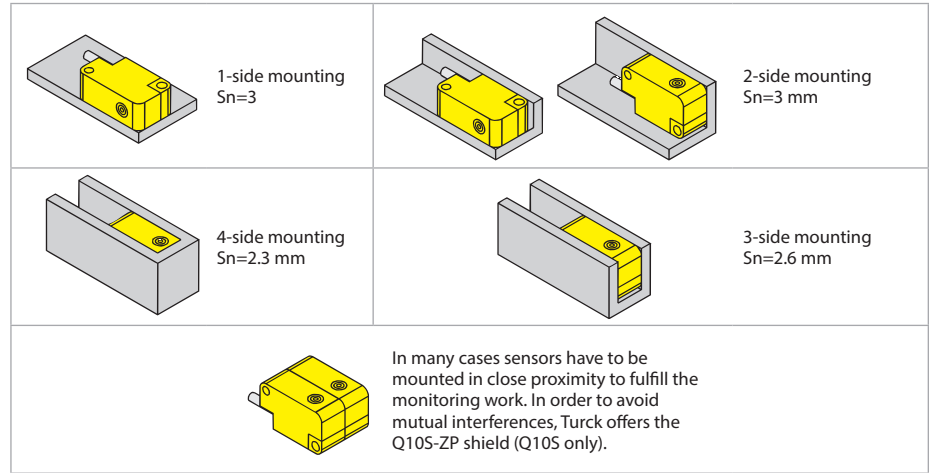
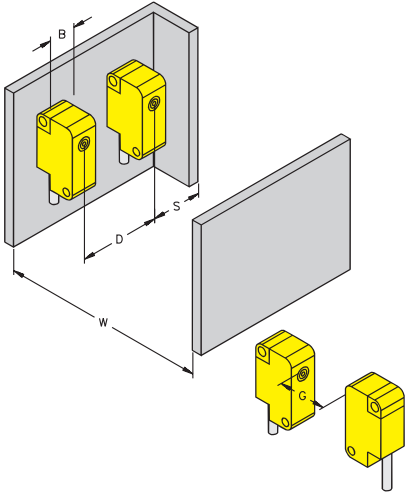
### Non-Flush Mountable

Housing Type	Sensor Type	Housing	A	B	C	D	E
Q6.5	Ni2	6.50	12.00	6.00	10.00	20.00	4.00
Q9.5	Ni2	9.50	12.00	6.00	14.00	19.00	4.00
Q12	Ni4	12.00	24.00	12.00	18.00	24.00	8.00
Q25	Ni10	25.00	60.00	30.00	38.00	75.00	20.00
Q30	Ni15	30.00	90.00	45.00	45.00	90.00	30.00

Dimensions are in mm.

# Rectangular Inductive Sensors

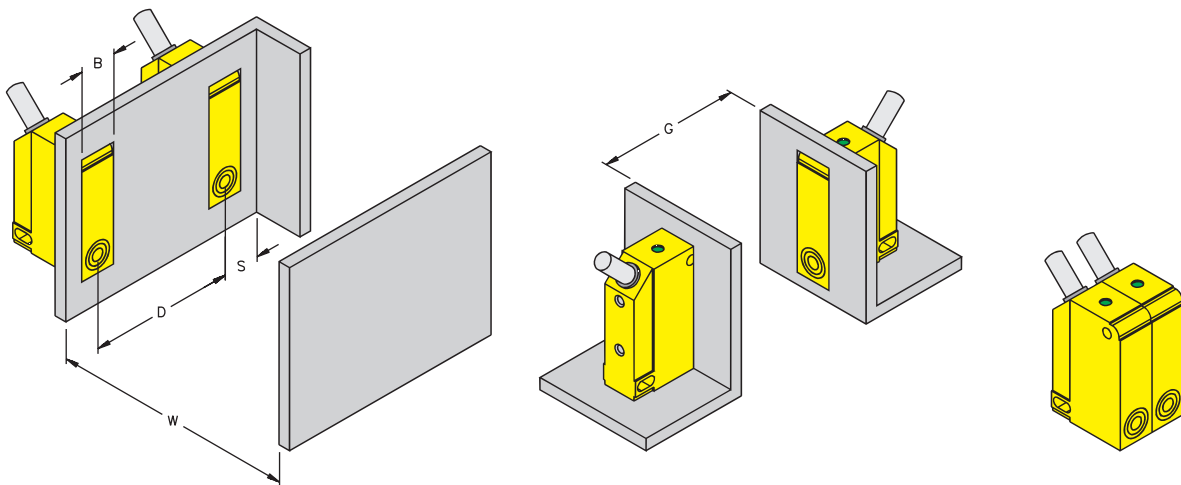
## Embeddable Mounting Characteristics



## Nonembeddable, Square Sensors

Part Number	D	W	S	G	B Width of Active Face
Ni5U-Q10S	31.00	15.00	15.30	30.00	10.20

Dimensions are in mm.



## Embeddable, Square Sensors

Part Number	D	W	S	G	B Width of Active Face
Bi5U-Q12	48.00	25.00	12.00	50.00	12.00

Dimensions are in mm.


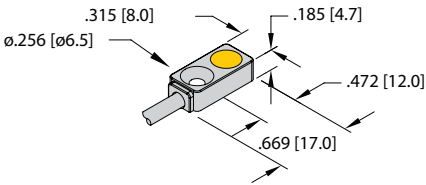
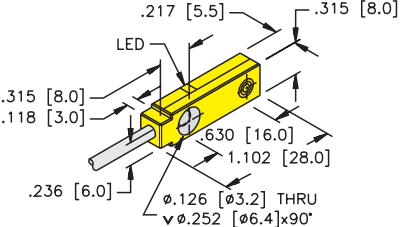
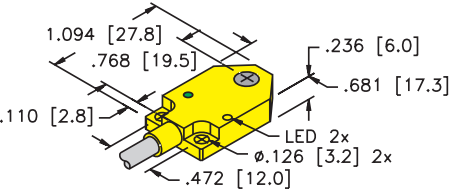
We reserve the right to make technical alterations without prior notice.

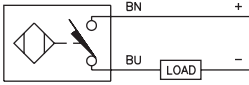
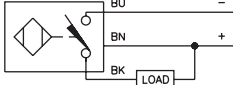
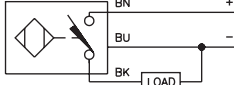
Notes



# Rectangular Inductive Sensors | Q4.7, Q5.5, & Q06

## Top Sensing Subminiature Qpak Housing

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>4.7 mm - Embeddable, Potted-In Cable</p>
<p><b>B</b></p>  <p>5.5 mm - Embeddable/Nonembeddable, Potted-In Cable</p>	<p><b>C</b></p>  <p>6.0 mm - Embeddable, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular) ≤20 mA (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: ≤8 ms</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors | Q4.7, Q5.5, & Q06

## Top Sensing Subminiature Qpak Housing


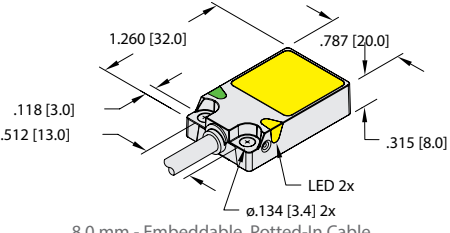
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-Q4.7-AN6X 1614001		•	2	3-wire DC NPN	10-30 VDC	1000	≤100	0 to +85	IP67	Zinc	PA 12	N/A	YE	2M/TPU	A	2	A4
Bi2-Q4.7-AP6X 1614000		•	2	3-wire DC PNP	10-30 VDC	1000	≤100	0 to +85	IP67	Zinc	PA 12	N/A	YE	2M/TPU	A	3	A4
Bi2-Q5.5-AG6X 1613108		•	2	2-wire DC	10-30 VDC	1000	≤100	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	1	A2
Bi2-Q5.5-AN6X 1613100		•	2	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	2	A4
Bi2-Q5.5-AN6X/S34 1613101	WFI	•	2	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	2	A4
Ni3.5-Q5.5-AN6X 4613610			3.5	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	2	A4
Bi2-Q5.5-AP6X 1613000		•	2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	3	A4
Bi2-Q5.5-AP6X/S34 1613001	WFI	•	2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	3	A4
Ni3.5-Q5.5-AP6X 4613601			3.5	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	B	3	A4
Bi3-Q06-AN6X2 1620150		•	3	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	PP	PA 12	GN	YE	2M/TPU	C	2	A4
Bi3-Q06-AP6X2 1620100		•	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PP	PA 12	GN	YE	2M/TPU	C	3	A4

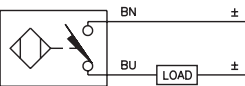
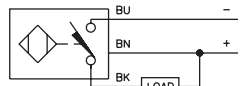
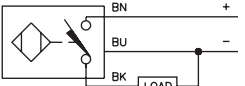
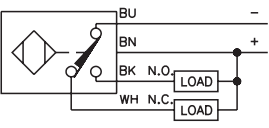
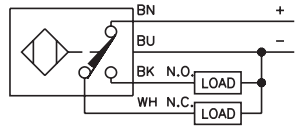
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q08

## Top Sensing Qpak Housing with Potted-in Cable

Housing Style	Dimension Drawings
	<p>A</p>  <p>8.0 mm - Embeddable, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p> 	<p>2</p> 	<p>3</p> 
<p>4</p> 	<p>5</p> 	

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q08

## Top Sensing Qpak Housing with Potted-in Cable


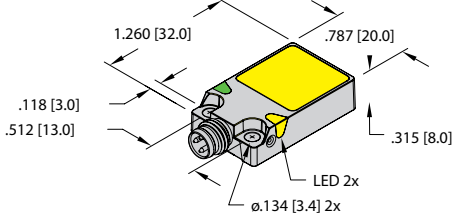
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi5U-Q08-AN6X2</b> 1608911	Uprox	•	5	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	2M/TPU	A	2	A4
<b>Bi5U-Q08-AP6X2</b> 1608901	Uprox	•	5	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	2M/TPU	A	3	A4
<b>Bi5-Q08-AD4X/S34</b> 4414550	WFI	•	5	2-wire DC	10-65 VDC	30	≤100	-25 to +70	IP67	Zamak	PP	N/A	YE	2M/TPU	A	1	A2
<b>Bi5-Q08-VN6X2</b> 16002	Comp. Outputs	•	5	4-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	4	A4
<b>Bi5-Q08-VP6X2</b> 16001	Comp. Outputs	•	5	4-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	5	A4
<b>Bi7-Q08-AN6X2</b> 1601620	Ext. Range	•	7	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	2	A4
<b>Bi7-Q08-AP6X2</b> 1601600	Ext. Range	•	7	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	3	A4
<b>Bi7-Q08-VN6X2</b> 1600920	Ext. Range	•	7	4-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	4	A4
<b>Bi7-Q08-VP6X2</b> 1600900	Ext. Range	•	7	4-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	5	A4
<b>Bi8U-Q08-AN6X2</b> 1662007	Uprox+	•	8	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	2	A4
<b>Bi8U-Q08-AP6X2</b> 1662006	Uprox+	•	8	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	2M/TPU	A	3	A4

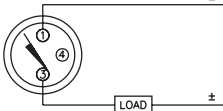
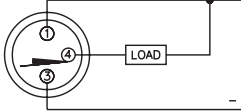
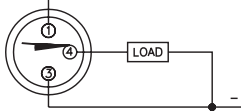
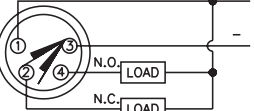
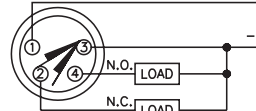
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q08

## Top Sensing Qpak Housing with Integral Connector

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="906 527 1401 548">8.0 mm - Embeddable, M8 snap or thread-on Picofast Connector</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 615 121 636">1</p>  <p data-bbox="203 758 480 779">Mating Cordset: PKG 3Z-*; PKG 3M-*</p>	<p data-bbox="597 615 613 636">2</p>  <p data-bbox="667 758 945 779">Mating Cordset: PKG 3Z-*; PKG 3M-*</p>	<p data-bbox="1040 615 1057 636">3</p>  <p data-bbox="1127 758 1404 779">Mating Cordset: PKG 3Z-*; PKG 3M-*</p>
<p data-bbox="105 793 121 814">4</p>  <p data-bbox="203 936 480 957">Mating Cordset: PKG 4Z-*; PKG 4M-*</p>	<p data-bbox="597 793 613 814">5</p>  <p data-bbox="667 936 945 957">Mating Cordset: PKG 4Z-*; PKG 4M-*</p>	

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="397 1031 537 1052">Ripple: ≤10%</p> <p data-bbox="212 1062 634 1083">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 1094 695 1136">Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p data-bbox="110 1146 561 1167">Trigger Current for Short Circuit Protection: ≥120 mA</p> <p data-bbox="264 1178 553 1199">Minimum Load Current: ≥3.0 mA</p>	<p data-bbox="914 1031 1235 1052">Off-State (Leakage) Current: ≤0.8 mA</p> <p data-bbox="1003 1062 1292 1083">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="971 1094 1308 1115">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1084 1125 1260 1146">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1157 1471 1178">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1188 1438 1209">Repeatability: ≤2% of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="397 1251 537 1272">Ripple: ≤10%</p> <p data-bbox="212 1283 634 1304">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 1314 537 1335">Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p data-bbox="110 1346 760 1419">Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p data-bbox="232 1430 553 1451">Off-State (Leakage) Current: ≤0.1 mA</p> <p data-bbox="318 1461 781 1503">No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular) ≤20 mA (Uprox+, Uprox 3)</p> <p data-bbox="212 1514 537 1535">Time Delay Before Availability: ≤8 ms</p>	<p data-bbox="1003 1251 1292 1272">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="914 1283 1276 1304">Reverse Polarity Protection: Incorporated</p> <p data-bbox="959 1314 1276 1335">Wire-Break Protection: Incorporated</p> <p data-bbox="971 1346 1308 1367">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="987 1377 1227 1398">Temperature Drift: ≤±10%</p> <p data-bbox="1084 1409 1260 1430">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1440 1471 1461">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1472 1438 1493">Repeatability: ≤2% of Rated Operating Distance</p>	

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# Rectangular Inductive Sensors | Q08

## Top Sensing Qpak Housing with Integral Connector


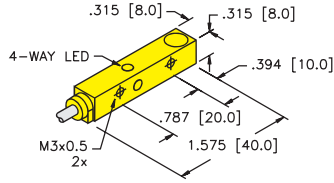
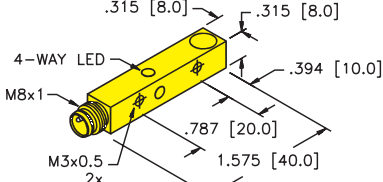
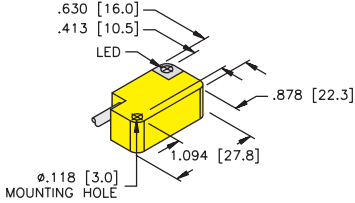
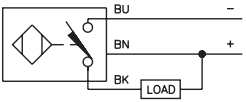
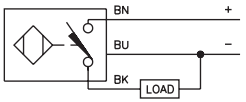
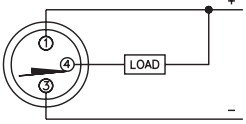
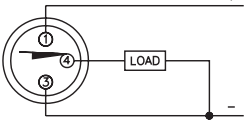
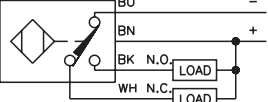
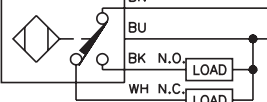
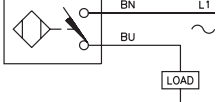
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Mating Cord	Dimension Drawings	Wiring Diagrams	Spec List
Bi5U-Q08-AN6X2-V1131 1608910	Uprox	•	5	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi5U-Q08-AP6X2-V1131 1608900	Uprox	•	5	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4
Bi5U-Q08-AN6X2-V2131 1608904	Uprox	•	5	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi5U-Q08-AP6X2-V2131 1608905	Uprox	•	5	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4
Bi5-Q08-AD4X-V1130 4414551		•	5	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP68	Zamak	PP	N/A	YE	PKG 3M-*	A	1	A2
Bi5-Q08-AN6X2-V1131 16006		•	5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi5-Q08-AP6X2-V1131 16005		•	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4
Bi5-Q08-VN6X2-V1141 1600400	Comp. Outputs	•	5	4-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 4M-*	A	4	A4
Bi5-Q08-VP6X2-V1141 1600300	Comp. Outputs	•	5	4-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 4M-*	A	5	A4
Bi5-Q08-AD4X-V2130 4414553		•	5	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP68	Zamak	PP	N/A	YE	PKG 3M-*	A	1	A2
Bi5-Q08-AN6X2-V2131 1600602		•	5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi5-Q08-AP6X2-V2131 1600502		•	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4
Bi7-Q08-AN6X2-V1131 1601622	Ext. Range	•	7	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi7-Q08-AP6X2-V1131 1601602	Ext. Range	•	7	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4
Bi7-Q08-AN6X2-V2131 1601623	Ext. Range	•	7	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi7-Q08-AP6X2-V2131 1601603	Ext. Range	•	7	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4
Bi7-Q08-VN6X2-V1141 1600922	Ext. Range	•	7	4-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 4M-*	A	4	A4
Bi7-Q08-VP6X2-V1141 1600902	Ext. Range	•	7	4-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	PKG 4M-*	A	5	A4
Bi8U-Q08-AN6X2-V1131 1662008	Uprox+	•	8	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	2	A4
Bi8U-Q08-AP6X2-V1131 1662005	Uprox+	•	8	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	PKG 3M-*	A	3	A4

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q8SE & Q10S

## Side Sensing Qpak Housing

Housing Style	Dimension Drawings		
	<p><b>A</b></p>  <p>8.0 mm - Nonembeddable, Potted-In Cable</p>		
<p><b>B</b></p>  <p>8.0 mm - Nonembeddable, M8 Picofast Connector</p>	<p><b>C</b></p>  <p>10 mm - Embeddable/Nonembeddable, Potted-In Cable</p>		
Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3Z-*</p>
<p><b>5</b></p> 	<p><b>6</b></p> 	<p><b>7</b></p> 	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)			
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular) ≤20 mA (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: ≤8 ms</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>		
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)			
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Inrush Current: ≤8 A (≤10ms max. 5 Hz) ≤1 A (≤10 ms max. 5 Hz) 12 mm ≤0.2 A (≤10 ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>		

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q8SE & Q10S

## Side Sensing Qpak Housing


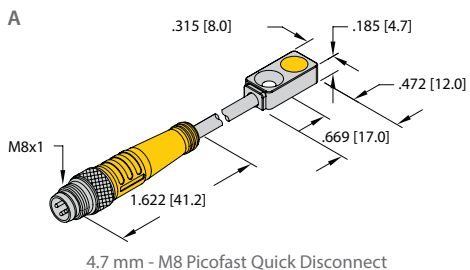
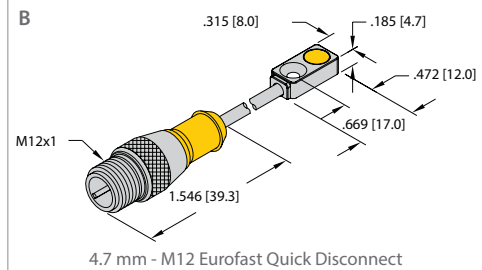
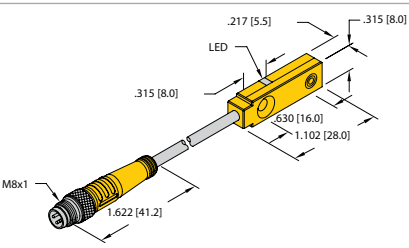
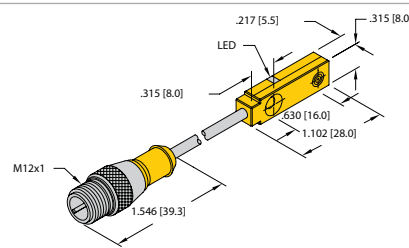
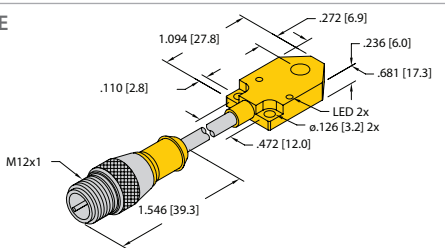
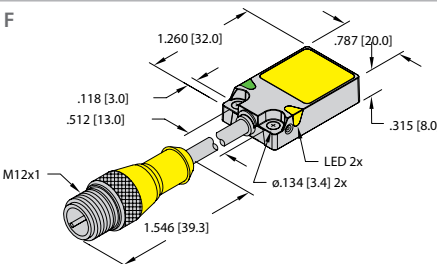
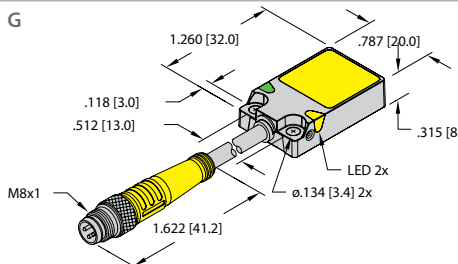
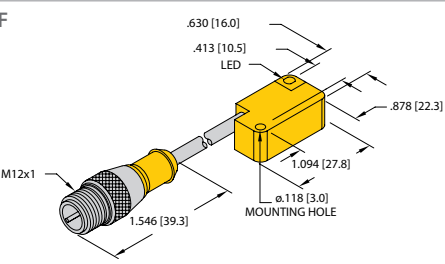
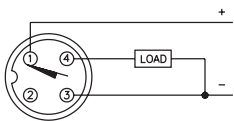
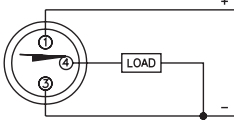
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni4U-Q8SE-AN6X 4635809	Uprox+		4	3-wire DC NPN	10-30 VDC	1000	≤150	-30 to +85	IP68	PP	PP	N/A	YE	2M/TPU	A	1	A4
Ni4U-Q8SE-AP6X 4635807	Uprox+		4	3-wire DC PNP	10-30 VDC	1000	≤150	-30 to +85	IP68	PP	PP	N/A	YE	2M/TPU	A	2	A4
Ni4U-Q8SE-AN6X-V1131 4635810	Uprox+		4	3-wire DC NPN	10-30 VDC	1000	≤150	-30 to +85	IP68	PP	PP	N/A	YE	--	B	3	A4
Ni4U-Q8SE-AP6X-V1131 4635808	Uprox+		4	3-wire DC PNP	10-30 VDC	1000	≤150	-30 to +85	IP68	PP	PP	N/A	YE	--	B	4	A4
Bi2-Q10S-AN6X 1619310		•	2	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	PP-GF20	PP-GF20	N/A	YE	2M/TPU	C	1	A4
Bi2-Q10S-AP6X 1609360		•	2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP-GF20	PP-GF20	N/A	YE	2M/TPU	C	2	A4
Bi2-Q10S-VN6X 1609341	Comp. Outputs	•	2	4-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	PP-GF20	PP-GF20	N/A	YE	2M/TPU	C	5	A4
Bi2-Q10S-VP6X 1609340	Comp. Outputs	•	2	4-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP-GF20	PP-GF20	N/A	YE	2M/TPU	C	6	A4
Bi2-Q10S-AZ31X 1309100		•	2	2-wire AC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PP-GF20	PP-GF20	N/A	RD	2M/TPU	C	7	A6
Ni5U-Q10S-AN6X 1609365	Uprox+		5	3-wire DC NPN	10-30 VDC	1000	≤150	-30 to +85	IP68	PP-GF20	PP-GF20	N/A	YE	2M/TPU	C	1	A4
Ni5U-Q10S-AP6X 1609364	Uprox+		5	3-wire DC PNP	10-30 VDC	1000	≤150	-30 to +85	IP68	PP-GF20	PP-GF20	N/A	YE	2M/TPU	C	2	A4

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Small Rectangular

## Sensor with Molded Connector

Housing Style	Dimension Drawings	
	<div style="display: flex; justify-content: space-around;"> <div data-bbox="558 302 1024 569"> <p><b>A</b></p>  <p>4.7 mm - M8 Picofast Quick Disconnect</p> </div> <div data-bbox="1024 302 1503 569"> <p><b>B</b></p>  <p>4.7 mm - M12 Eurofast Quick Disconnect</p> </div> </div>	
<p><b>C</b></p>  <p>5.5 mm - M8 Picofast Quick Disconnect</p>	<p><b>D</b></p>  <p>5.5 mm - M12 Eurofast Quick Disconnect</p>	<p><b>E</b></p>  <p>6.0 mm - M12 Eurofast Quick Disconnect</p>
<p><b>F</b></p>  <p>8.0 mm - M12 Eurofast Quick Disconnect</p>	<p><b>G</b></p>  <p>8.0 mm - M8 Picofast Quick Disconnect</p>	<p><b>F</b></p>  <p>8.0 mm - M12 Eurofast Quick Disconnect</p>
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3M-*</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:</p> <ul style="list-style-type: none"> <li><math>\geq 220\text{ mA}</math> on 200 mA Load Current</li> <li><math>\geq 170\text{ mA}</math> on 150 mA Load Current</li> <li><math>\geq 120\text{ mA}</math> on 100 mA Load Current</li> </ul> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)</p> <p><math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors | Small Rectangular

## Sensor with Molded Connector


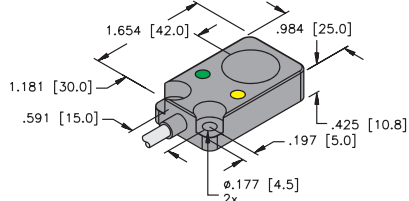
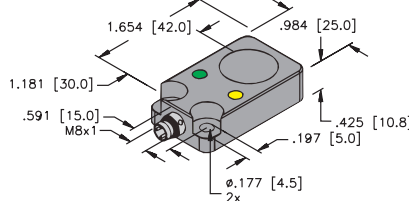
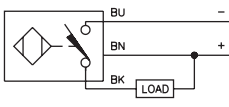
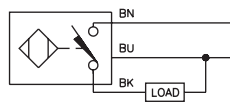
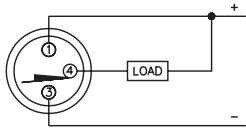
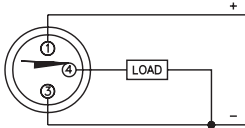
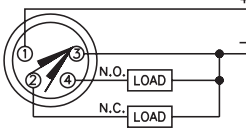
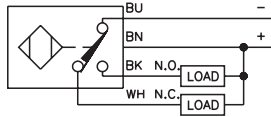
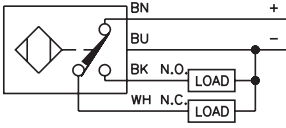
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-Q4.7-AP6X-0.3-PSG3M 1614005		•	2	3-wire DC PNP	10-30 VDC	1000	≤100	0 to +85	IP67	Zinc	PA	N/A	YE	0.3M/TPU	A	2	A4
Bi2-Q4.7-AP6X-0.3-RS4T 16140024		•	2	3-wire DC PNP	10-30 VDC	1000	≤100	0 to +85	IP67	Zinc	PA	N/A	YE	0.3M/TPU	B	1	A4
Bi2-Q5.5-AP6X-0.2-PSG3M 1613099		•	2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	0.2M/TPU	C	2	A4
Bi2-Q5.5-AP6X-0.2-RS4T 1613094		•	2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP	PP	N/A	YE	0.2M/TPU	D	1	A4
Bi3-Q06-AP6X2-0.2-RS4T 1620193		•	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PP	PA 12	GN	YE	0.2M/TPU	E	1	A4
Bi5U-Q08-AP6X2-0.2-RS4T 1608990	Uprox	•	5	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	Zamak	PP	GN	YE	0.2M/TPU	F	1	A4
Bi5-Q08-AP6X2-0.2-PSG3F 1600592		•	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	0.2M/TPU	G	2	A4
Bi7-Q08-AP6X2-0.2-RS4T 1601683		•	7	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	Zamak	PP	GN	YE	0.2M/TPU	F	1	A4
Bi2-Q10S-AP6X-0.2-RS4T 1609390		•	2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	PP-GF20	PP	N/A	YE	0.2M/TPU	H	1	A4

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q10

## Top Sensing Qpak Housing

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>10 mm - Embeddable, Potted-In Cable</p>	
<p><b>B</b></p>  <p>10 mm - Embeddable, M8 Picofast Connector</p>		
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3Z-*</p>
<p><b>4</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>5</b></p>  <p>Mating Cordset: PKG 4Z-*</p>	<p><b>6</b></p> 
<p><b>7</b></p> 		
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q10

## Top Sensing Qpak Housing


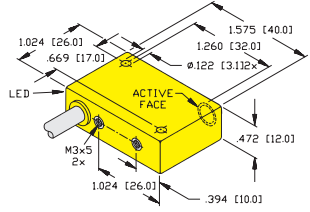
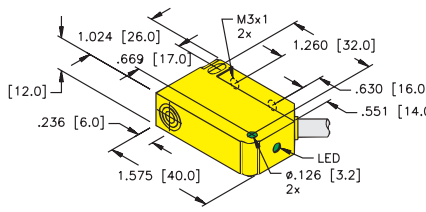
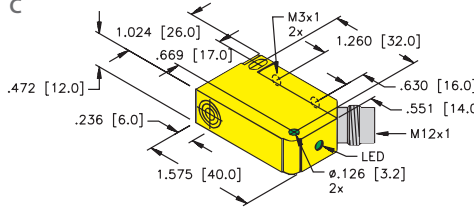
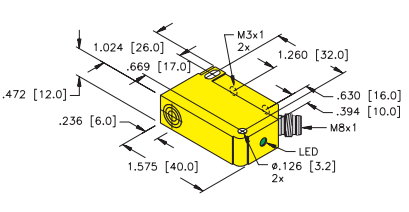
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi8U-Q10-AN6X2</b> 1662003	Uprox	•	8	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	2M/TPU	A	1	A4
<b>Bi8U-Q10-AP6X2</b> 1662001	Uprox	•	8	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	2M/TPU	A	2	A4
<b>Bi8U-Q10-AN6X2-V1131</b> 1662004	Uprox	•	8	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	--	B	3	A4
<b>Bi8U-Q10-AP6X2-V1131</b> 1662002	Uprox	•	8	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	--	B	4	A4
<b>Bi8-Q10-VN6X2</b> 4616410	Comp. Outputs	•	8	4-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/TPU	A	6	A4
<b>Bi8-Q10-VP6X2</b> 4616401	Comp. Outputs	•	8	4-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/TPU	A	7	A4
<b>Bi8-Q10-VP6X2-V1141</b> 4616402	Comp. Outputs	•	8	4-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	--	B	5	A4

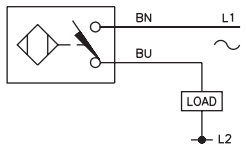
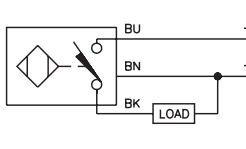
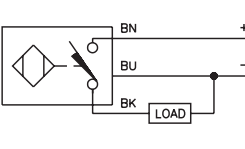
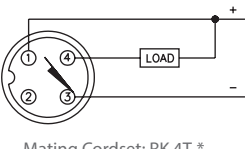
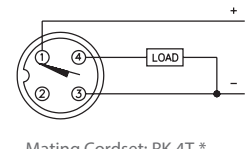
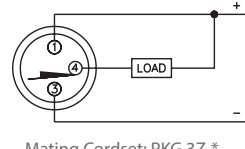
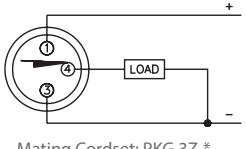
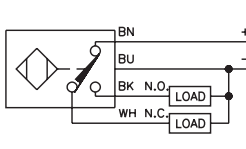
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q12

## Side Sensing Qpak Housing

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable/Nonembeddable, Potted-In Cable</p>	<p><b>B</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>
<p><b>C</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>D</b></p>  <p>12 mm - Embeddable, M8 Picofast Connection</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 
<p><b>4</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>5</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>6</b></p>  <p>Mating Cordset: PKG 3Z-*</p>
<p><b>7</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>8</b></p> 	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q12

## Side Sensing Qpak Housing


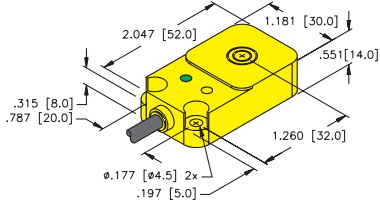
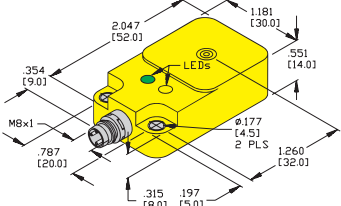
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-Q12-AZ31X 13100		•	2	2-wire AC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/ PVC	A	1	A6
Ni4-Q12-AZ31X 13102			4	2-wire AC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/ PVC	A	1	A6
Bi5U-Q12-AN6X2 1635523	Uprox+	•	5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	2M/ TPU	B	2	A4
Bi5U-Q12-AP6X2 1635522	Uprox+	•	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	2M/ TPU	B	3	A4
Bi5U-Q12-VP6X2 1635533	Uprox+	•	5	4-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	2M/ TPU	B	8	A4
Bi5U-Q12-AN6X2-H1141 1635527	Uprox+	•	5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	--	C	4	A4
Bi5U-Q12-AP6X2-H1141 1635526	Uprox+	•	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	--	C	5	A4
Bi5U-Q12-AN6X2-V1131 1635525	Uprox+	•	5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	--	D	6	A4
Bi5U-Q12-AP6X2-V1131 1635524	Uprox+	•	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	PA 12	PA 12	GN	YE	--	D	7	A4

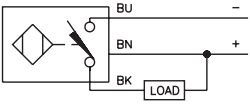
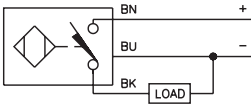
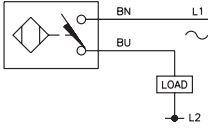
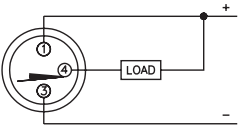
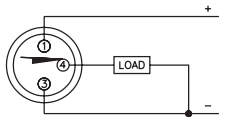
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q14

## Top Sensing Qpak Housing

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>14 mm - Potted-In Cable</p>
<p><b>B</b></p>  <p>14 mm - Embeddable/Nonembeddable, M8 Picofast Connector</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 
<p><b>4</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>5</b></p>  <p>Mating Cordset: PKG 3M-*</p>	

A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440\text{ mA}</math>; DC: <math>\geq 330\text{ mA}</math>  AC: <math>\geq 120\text{ mA}</math>; DC: <math>\geq 120\text{ mA}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math> (AC)  <math>\leq 1.5\text{ mA}</math> (DC)</p>		<p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p> <p>Inrush Current: <math>\leq 3.0\text{ A}</math> (<math>\leq 20\text{ ms}</math>, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q14

## Top Sensing Qpak Housing


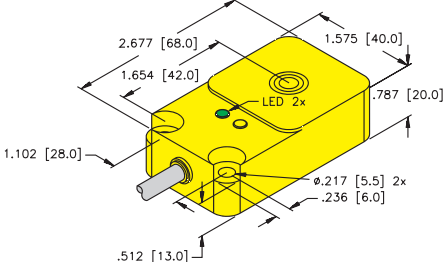
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Bi10U-Q14-AN6X2 1608710	Uprox	•	10	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	2M/ TPU	A	1	A4
Bi10U-Q14-AP6X2 1608700	Uprox	•	10	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	2M/ TPU	A	2	A4
Bi10U-Q14-AN6X2-V1131 1608510	Uprox	•	10	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	- -	B	4	A4
Bi10U-Q14-AP6X2-V1131 1608500	Uprox	•	10	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	- -	B	5	A4
Bi10-Q14-AN6X2 1608320		•	10	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/ TPU	A	1	A4
Bi10-Q14-AP6X2 1608720		•	10	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/ TPU	A	2	A4
Bi10-Q14-ADZ32X2 4256220		•	10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	GN	RD	2M/ TPU	A	3	A5
Bi10-Q14-ADZ32X2/S34 4256225	WFI	•	10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	GN	RD	2M/ TPU	A	3	A5
Bi10-Q14-AP6X2-V1131 1608530		•	10	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	- -	B	5	A4
Ni20-Q14-AP6X2-V1131 4690210			20	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	- -	B	5	A4
Ni20-Q14-AN6X2 4690220			20	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/ TPU	A	1	A4
Ni20-Q14-AP6X2 4690205		•	20	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/ TPU	A	2	A4
Ni20-Q14-ADZ32X2 4205410		•	20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	GN	RD	2M/ TPU	A	3	A5

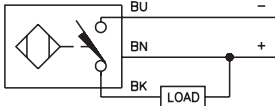
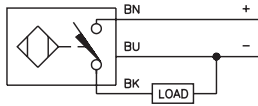
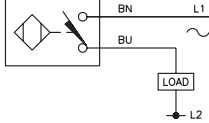
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q20

## Top Sensing Qpak Housing with Potted-in Cable

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="932 569 1373 590">20 mm - Embeddable/Nonembeddable, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="103 659 120 680">1</p> 	<p data-bbox="581 659 597 680">2</p> 	<p data-bbox="1050 659 1066 680">3</p> 

A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="399 894 532 915">Ripple: <math>\leq 10\%</math></p> <p data-bbox="212 926 634 947">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 957 537 978">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="107 989 760 1062">Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="232 1073 553 1094">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="318 1104 781 1125">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)</p> <p data-bbox="326 1136 699 1157">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p data-bbox="1000 894 1284 915">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="919 926 1268 947">Reverse Polarity Protection: Incorporated</p> <p data-bbox="959 957 1268 978">Wire-Break Protection: Incorporated</p> <p data-bbox="967 989 1300 1010">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="984 1020 1227 1041">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1052 1252 1073">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1083 1455 1104">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1115 1422 1136">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p data-bbox="326 1230 594 1251">Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p data-bbox="212 1262 634 1283">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 1293 537 1314">Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p data-bbox="107 1325 708 1377">Trigger Current for Short Circuit Protection: AC: <math>\geq 440\text{ mA}</math>; DC: <math>\geq 330\text{ mA}</math>  AC: <math>\geq 120\text{ mA}</math>; DC: <math>\geq 120\text{ mA}</math></p> <p data-bbox="248 1388 708 1440">Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p data-bbox="232 1451 594 1503">Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math> (AC)  <math>\leq 1.5\text{ mA}</math> (DC)</p>		<p data-bbox="943 1230 1235 1251">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p> <p data-bbox="1016 1262 1373 1283">Inrush Current: <math>\leq 3.0\text{ A}</math> (<math>\leq 20\text{ ms}</math>, max 5 Hz)</p> <p data-bbox="1000 1293 1284 1314">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="967 1325 1300 1346">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1081 1356 1252 1377">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1388 1455 1409">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1024 1419 1422 1440">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors | Q20

## Top Sensing Qpak Housing with Potted-in Cable


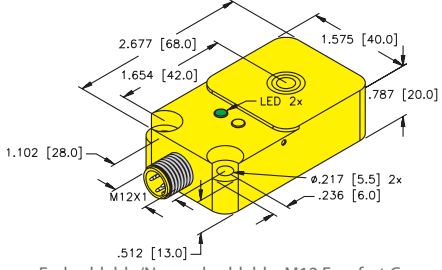
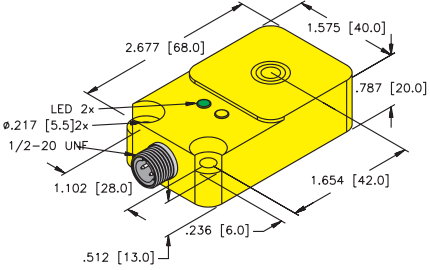
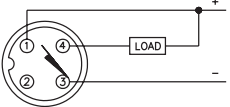
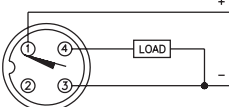
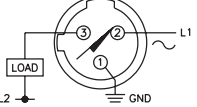
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-Q20-AN6X2 1608810	Uprox	•	15	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	2M/TPU	A	1	A4
Bi15U-Q20-AP6X2 1608800	Uprox	•	15	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	2M/TPU	A	2	A4
Bi15-Q20-AP6X2 1608300		•	15	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/TPU	A	2	A4
Bi15-Q20-ADZ32X2 4256250		•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	GN	RD	2M/TPU	A	3	A5
Ni25-Q20-AN6X2 1602800			25	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/TPU	A	1	A4
Ni25-Q20-AP6X2 1602700			25	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/TPU	A	2	A4

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q20

## Top Sensing Qpak Housing with Integral Connector

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>20 mm - Embeddable/Nonembeddable, M12 Eurofast Connector</p>	
<p><b>B</b></p>  <p>20 mm - Embeddable, 1/2-20UNF Microfast Connector</p>		
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: KB 3T-*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440\text{ mA}</math>; DC: <math>\geq 330\text{ mA}</math>  AC: <math>\geq 120\text{ mA}</math>; DC: <math>\geq 120\text{ mA}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (leakage) Current: <math>\leq 1.7\text{ mA}</math> (AC)  <math>\leq 1.5\text{ mA}</math> (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p> <p>Inrush Current: <math>\leq 3.0\text{ A}</math> (<math>\leq 20\text{ ms}</math>, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q20

## Top Sensing Qpak Housing with Integral Connector


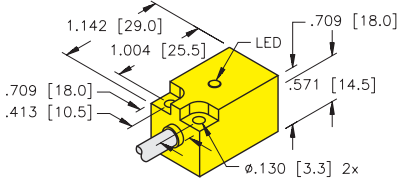
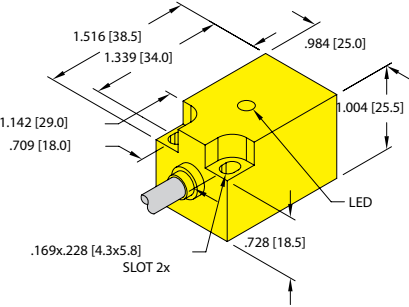
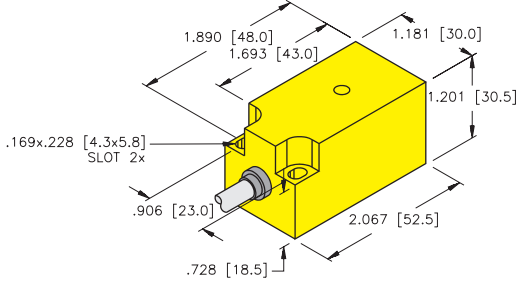
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-Q20-AN6X2-H1141 1608610	Uprox	•	15	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	1	A4
Bi15U-Q20-AP6X2-H1141 1608600	Uprox	•	15	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	2	A4
Bi15-Q20-AN6X2-H1141 1608315		•	15	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	1	A4
Bi15-Q20-AP6X2-H1141 1608305		•	15	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Bi15-Q20-ADZ32X2-B3131 4256251		•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	PBT	PBT	GN	YE	B	3	A5
Ni25-Q20-AN6X2-H1141 1602802			25	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	1	A4
Ni25-Q20-AP6X2-H1141 1602702			25	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q18, Q25, & Q30

## Side Sensing Qpak Housing

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Nonembeddable, Potted-In Cable</p>
<p><b>B</b></p>  <p>25 mm - Nonembeddable, Potted-In Cable</p>	<p><b>C</b></p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>

### Wiring Diagrams/Mating Cordsets

<p><b>1</b></p> 	<p><b>2</b></p> 
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### A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)

<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
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We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Q18, Q25, & Q30

## Side Sensing Qpak Housing


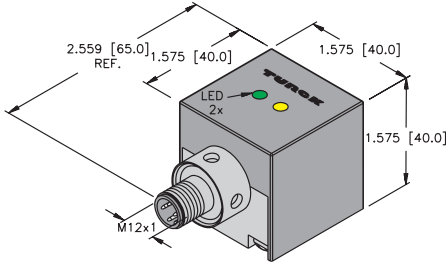
Part Number/ ID Number	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni5-Q18-AN6X 4614607	5	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	A	1	A4
Ni5-Q18-AP6X 4614606	5	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	A	2	A4
Ni10-Q25-AN6X 4652330	10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	B	1	A4
Ni10-Q25-AP6X 4652225	10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	B	2	A4
Ni15-Q30-AN6X 4659330	15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	C	1	A4
Ni15-Q30-AP6X 4659325	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	C	2	A4

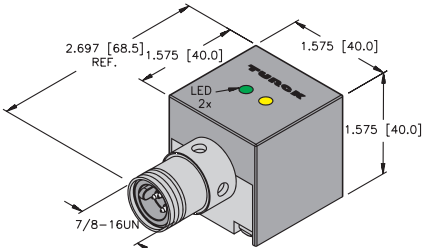
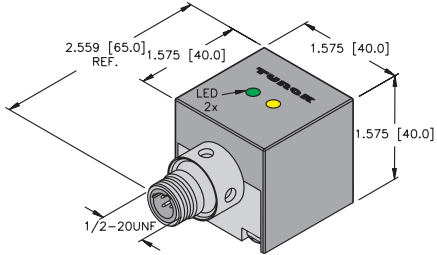
We reserve the right to make technical alterations without prior notice.

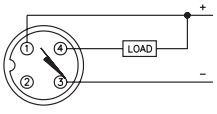
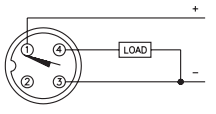
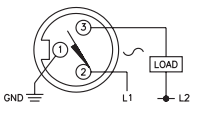
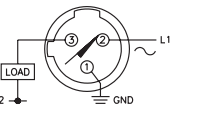
Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CA40

## Rotatable Sensing Head with Metal Housing

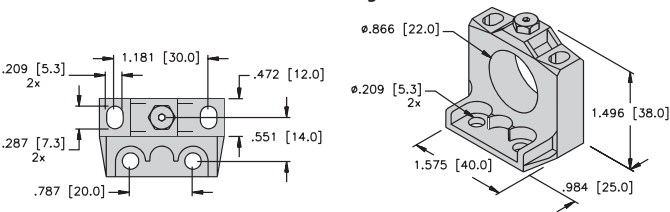
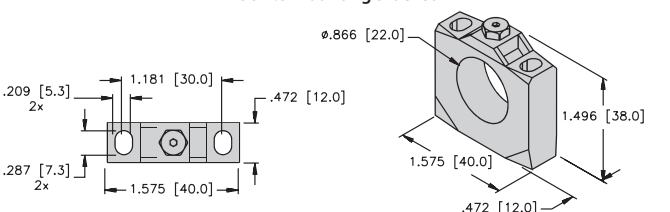
Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CA40 - Embeddable, Eurofast Connector</p>

<p><b>B</b></p>  <p>CA40 - Embeddable, Minifast Connector</p>	<p><b>C</b></p>  <p>CA40 - Embeddable, Microfast Connector</p>
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Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RKM 30-*M</p>	<p><b>4</b></p>  <p>Mating Cordset: KB 3T-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular) ≤20 mA (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: ≤8 ms</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Trigger Current for Short Circuit Protection: AC: ≥440 mA; DC: ≥330 mA AC: ≥120 mA; DC: ≥120 mA</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (leakage) Current: ≤1.7 mA (AC) ≤1.5 mA (DC)</p>	<p>Minimum Load Current: ≥3.0 mA</p> <p>Inrush Current: ≤3.0 A (≤20 ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

<p><b>BS 2.1 Mounting Bracket</b></p> 	<p><b>BS 2.0 Mounting Bracket</b></p> 
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We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | CA40

## Rotatable Sensing Head with Metal Housing


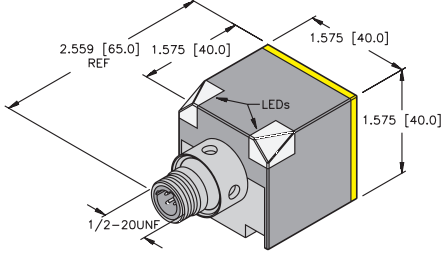
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi20U-CA40-AN6X2-H1141 W/BS2.1 1627390	Uprox	•	20	3-wire DC NPN	10-30 VDC	250	≤200	0 to +70	IP67	AL	TP	GN	YE	A	1	A4
Bi20U-CA40-AP6X2-H1141 W/BS2.1 1627290	Uprox	•	20	3-wire DC PNP	10-30 VDC	250	≤200	0 to +70	IP67	AL	TP	GN	YE	A	2	A4
Bi20U-CA40-AP6X2-H1141/S1590 W/BS2.0 1627297	Weldguard®	•	20	3-wire DC PNP	10-30 VDC	250	≤200	0 to +70	IP67	AL	WG	GN	YE	A	2	A4
Bi20U-CA40-ADZ30X2-B1131 W/BS2.1 4283290	Uprox	•	20	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	AL	TP	GN	YE	B	3	A5
Bi20U-CA40-ADZ30X2-B3131 W/BS2.1 4283292	Uprox	•	20	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	AL	TP	GN	YE	C	4	A5

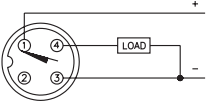
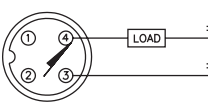
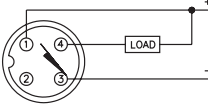
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

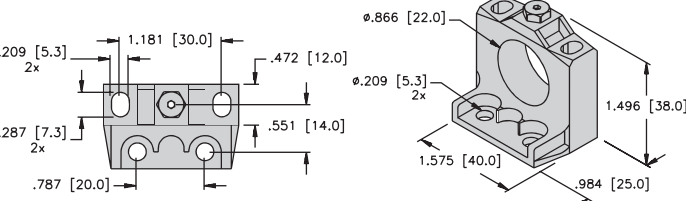
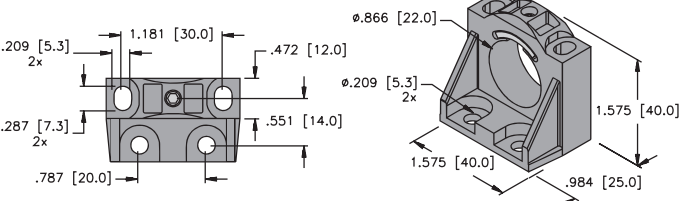
# Rectangular Inductive Sensors | CK40

## Rotatable Sensing Head with 2 and 3-wire DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="925 571 1377 592">CK40 - Embeddable/Nonembeddable, Eurofast Connector</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 657 121 678">1</p>  <p data-bbox="232 804 422 825">Mating Cordset: RK 4T-*</p>	<p data-bbox="565 657 581 678">2</p>  <p data-bbox="698 804 888 825">Mating Cordset: RK 4.2T-*</p>	<p data-bbox="1036 657 1052 678">3</p>  <p data-bbox="1169 804 1359 825">Mating Cordset: RK 4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 898 535 919">Ripple: <math>\leq 10\%</math></p> <p data-bbox="215 926 638 947">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 953 699 974">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p data-bbox="488 980 657 1001">Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="110 1008 561 1029">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="266 1035 557 1056">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="914 898 1235 919">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1003 926 1289 947">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="971 953 1305 974">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1084 980 1256 1001">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1008 1471 1029">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1035 1438 1056">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1115 535 1136">Ripple: <math>\leq 10\%</math></p> <p data-bbox="215 1142 638 1163">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 1169 540 1190">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="110 1197 764 1283">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="232 1289 557 1310">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="321 1316 781 1337">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)</p> <p data-bbox="326 1344 699 1365"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p data-bbox="215 1371 540 1392">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p data-bbox="1003 1115 1289 1136">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="914 1142 1268 1163">Reverse Polarity Protection: Incorporated</p> <p data-bbox="971 1169 1268 1190">Wire-Break Protection: Incorporated</p> <p data-bbox="971 1197 1305 1218">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="987 1224 1224 1245">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1084 1251 1256 1272">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1278 1471 1299">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1306 1438 1327">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

BS 2.1 Mounting Bracket	BS 4 Mounting Bracket
	

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors | CK40

## Rotatable Sensing Head with 2 and 3-wire DC Outputs


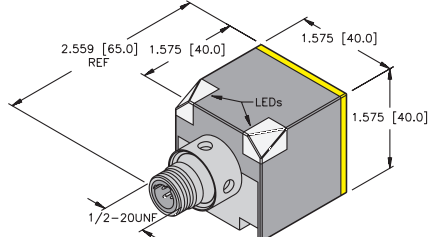
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-CK40-AN6X2-H1141 W/BS2.1 1625690	Uprox	•	15	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	3	A4
Bi15U-CK40-AP6X2-H1141 W/BS2.1 1625689	Uprox	•	15	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A4
Bi15-CK40-AN6X2-H1141 W/BS2.1 1625190		•	15	3-wire DC NPN	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	3	A4
Bi15-CK40-AP6X2-H1141 W/BS2.1 1625090		•	15	3-wire DC PNP	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	1	A4
Bi15-CK40-AD4X-H1141 W/BS2.1 4465090		•	15	2-wire DC	10-65 VDC	150	≤100	-25 to +70	IP67	PBT	PA 12	GN	YE	A	2	A2
Bi20U-CK40-AN6X2-H1141 W/BS2.1 1627230	Uprox+	•	20	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	3	A4
Bi20U-CK40-AP6X2-H1141 W/BS2.1 1627288	Uprox+	•	20	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A4
Bi30U-CK40-AN6X2-H1141 1625820	Uprox+	•	30	3-wire DC NPN	10-30 VDC	250	≤200	-10 to +60	IP68	PBT	PA 12	GN	YE	A	3	A4
Bi30U-CK40-AP6X2-H1141 1625829	Uprox+	•	30	3-wire DC PNP	10-30 VDC	250	≤200	-10 to +60	IP68	PBT	PA 12	GN	YE	A	1	A4
Ni20-CK40-AN6X2-H1141 W/BS2.1 1625390			20	3-wire DC NPN	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	3	A4
Ni20-CK40-AP6X2-H1141 W/BS2.1 1625290			20	3-wire DC PNP	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	1	A4
Ni20-CK40-AD4X-H1141 W/BS2.1 4465290			20	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	PBT	PA 12	GN	YE	A	2	A2
Ni25U-CK40-AN6X2-H1141 W/BS2.1 1625789	Uprox		25	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	3	A4
Ni25U-CK40-AP6X2-H1141 W/BS2.1 1625790	Uprox		25	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A4
Ni35U-CK40-AP6X2-H1141 1625800	Uprox		35	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PA 12	GN	YE	A	1	A4
Ni35U-CK40-AN6X2-H1141 1625810	Uprox		35	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PA 12	GN	YE	A	3	A4
Ni50U-CK40-AN6X2-H1141 1625823	Uprox+		50	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	3	A4
Ni50U-CK40-AP6X2-H1141 1625868	Uprox+		50	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A4

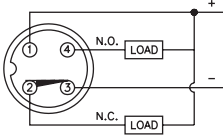
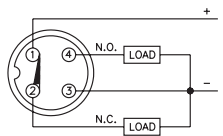
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

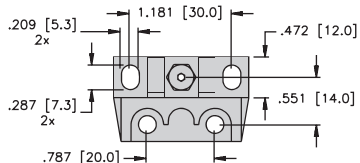
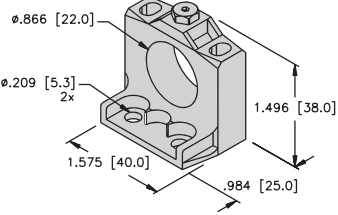
# Rectangular Inductive Sensors | CK40

## Rotatable Sensing Head with Complementary Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>CK40 - Embeddable/Nonembeddable, Eurofast Connector</p>

Wiring Diagrams/Mating Cordsets	
<p>1</p>  <p>Mating Cordset: RK 4.4T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4.4T-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current                      ≥170 mA on 150 mA Load Current                      ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular)                      ≤20 mA (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: ≤8 ms</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

BS 2.1 Mounting Bracket	
	

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# Rectangular Inductive Sensors | CK40

## Rotatable Sensing Head with Complementary Outputs


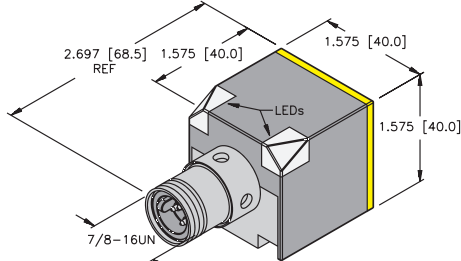
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15-CK40-VN4X2-H1141 W/BS2.1 1550190	Comp. Outputs	•	15	4-wire DC NPN	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	1	A4
Bi15-CK40-VP4X2-H1141 W/BS2.1 1550091	Comp. Outputs	•	15	4-wire DC PNP	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	2	A4
Ni20-CK40-VN4X2-H1141 W/BS2.1 1550390	Comp. Outputs		20	4-wire DC NPN	10-65 VDC	250	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	1	A4
Ni20-CK40-VP4X2-H1141 W/BS2.1 1550290	Comp. Outputs		20	4-wire DC PNP	10-65 VDC	250	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	2	A4
Ni35U-CK40-VP6X2-H1141 1625815	Uprox, Comp. Outputs		35	4-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP67	PBT	PA 12	GN	YE	A	2	A4
Ni50U-CK40-VN4X2-H1141 1625806	Uprox+, Comp. Outputs		50	4-wire DC NPN	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A4
Ni50U-CK40-VP4X2-H1141 1538302	Uprox+, Comp. Outputs		50	4-wire DC PNP	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PA 12	GN	YE	A	2	A4

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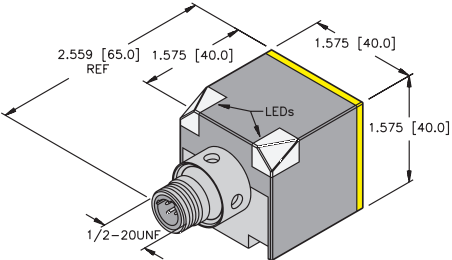
Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CK40

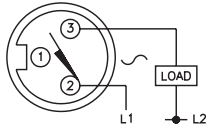
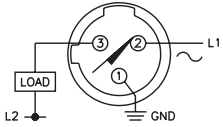
## Rotatable Sensing Head with AC/DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>CK40 - Embeddable/Nonembeddable, Minifast Connector</p>

B



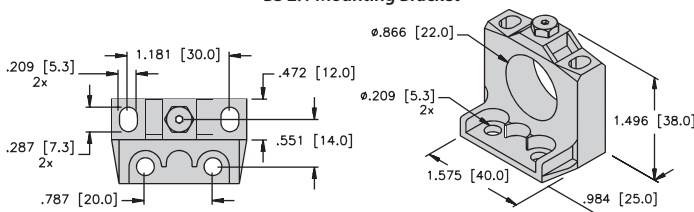
CK40 - Embeddable/Nonembeddable, Microfast Connector

Wiring Diagrams/Mating Cordsets	
<p>1</p>  <p>Mating Cordset: RKM 30-*M</p>	<p>2</p>  <p>Mating Cordset: KB 3T-*</p>

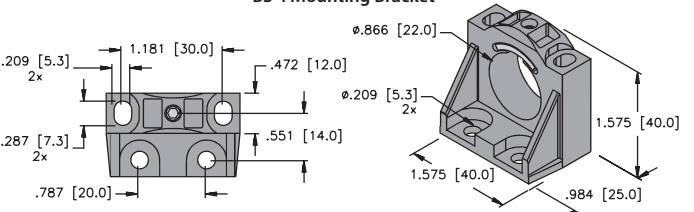
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3.0</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

**BS 2.1 Mounting Bracket**



**BS 4 Mounting Bracket**



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# Rectangular Inductive Sensors | CK40

## Rotatable Sensing Head with AC/DC Outputs


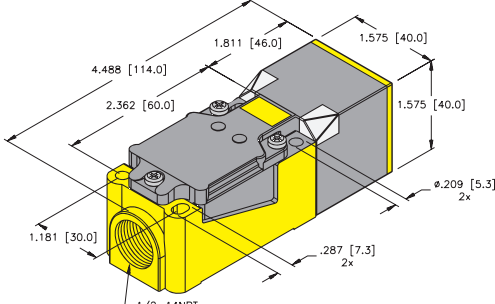
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-CK40-ADZ30X2-B1131 W/BS2.1 4280090	Uprox	•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A5
Bi15U-CK40-ADZ30X2-B3131 W/B 2.1 4280091	Uprox	•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP68	PBT	PA 12	GN	YE	B	2	A5
Bi15-CK40-AZ3X2-B1131 W/BS2.1 1335091		•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PA 12	GN	RD	A	1	A5
Bi15-CK40-AZ3X2-B3131 W/BS2.1 1335095		•	15	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PA 12	GN	RD	B	2	A6
Ni20-CK40-AZ3X2-B1131 W/BS2.1 1335291			20	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PA 12	GN	RD	A	1	A6
Ni20-CK40-AZ3X2-B3131 W/BS2.1 1335290			20	2-Wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PA 12	GN	RD	B	2	A6
Ni25U-CK40-ADZ30X2-B1131 W/BS2.1 4280290	Uprox		25	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	PBT	PA 12	GN	YE	A	1	A5
Ni25U-CK40-ADZ30X2-B3131 W/BS2.1 4280291	Uprox		25	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	PBT	PA 12	GN	YE	B	2	A5
Ni35U-CK40-ADZ30X2-B1131 4280410	Uprox		35	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP68	PBT	PA 12	GN	YE	A	1	A5

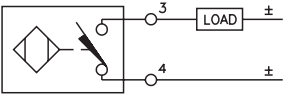
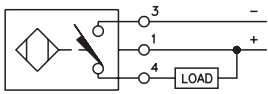
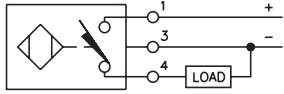
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CP40

## Rotatable Sensing Head with 2 and 3-wire DC Outputs and Terminal Chamber

Housing Style	Dimension Drawings
	<p>A</p>  <p>CP40 - Embeddable/Nonembeddable, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p> 	<p>2</p> 	<p>3</p> 

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | CP40

## Rotatable Sensing Head with 2 and 3-wire DC Outputs and Terminal Chamber


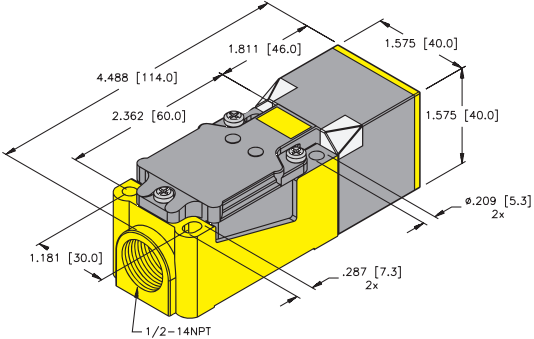
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-CP40-AP6X2/S10 1623502	Uprox	•	15	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	3	A4
Bi15-CP40-AN6X2/S10 16230		•	15	3-wire DC NPN	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Bi15-CP40-AN6X2/S10-S97 1623001	Low Temp. -40 °C	•	15	3-wire DC NPN	10-30 VDC	250	≤200	-40 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Bi15-CP40-AP6X2/S10 16030		•	15	3-Wire DC PNP	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	3	A4
Bi15-CP40-AD4X/S10 44770		•	15	2-wire DC	10-65 VDC	150	≤100	-25 to +70	IP67	PBT	PBT	N/A	YE	A	1	A2
Bi20U-CP40-AP6X2/S10 1625826	Uprox+	•	20	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	3	A4
Bi30U-CP40-AP6X2/S10 1625825	Uprox+	•	30	3-wire DC PNP	10-30 VDC	250	≤200	-10 to +60	IP68	PBT	PBT	GN	YE	A	3	A4
Ni20-CP40-AP6X2/S10 16031			20	3-wire DC PNP	10-30 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	3	A4
Ni20-CP40-AD4X/S10 44771			20	2-wire DC	10-65 VDC	150	≤100	-25 to +70	IP67	PBT	PBT	N/A	YE	A	1	A2
Ni25U-CP40-AP6X2/S10 1623701	Uprox		25	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	3	A4
Ni40U-CP40-AP6X2/S10 1623602	Uprox		40	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	3	A4
Ni50U-CP40-AN6X2/S10 1625824	Uprox+		50	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	2	A4
Ni50U-CP40-AP6X2/S10 1625842	Uprox+		50	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	3	A4

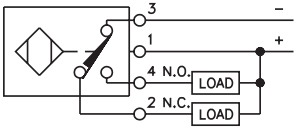
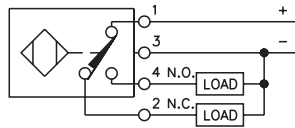
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CP40

## Rotatable Sensing Head with Complementary Outputs and Terminal Chamber

Housing Style	Dimension Drawings
	<p>A</p>  <p>CP40 - Embeddable/Nonembeddable, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets	
<p>1</p> 	<p>2</p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors | CP40

## Rotatable Sensing Head with Complementary Outputs and Terminal Chamber


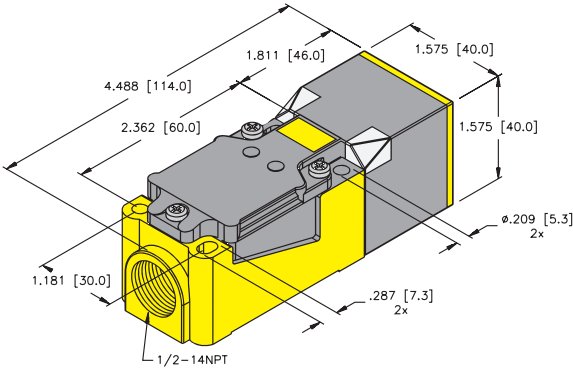
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-CP40-VN4X2/S10 1540511	Uprox	•	15	4-wire DC NPN	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	1	A4
Bi15U-CP40-VP4X2/S10 1540501	Uprox	•	15	4-wire DC PNP	10-65 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	2	A4
Bi15-CP40-VN4X2/S100 15250	Comp. Outputs	•	15	4-wire DC NPN	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	1	A4
Bi15-CP40-VN4X2/S100-S10 15144	High Temp. 100 °C	•	15	4-wire DC NPN	10-65 VDC	150	≤200	-25 to +100	IP67	PBT	PBT	GN	YE	A	1	A4
Bi15-CP40-VP4X2/S10 15010	Comp. Outputs	•	15	4-wire DC PNP	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Bi15-CP40-VP4X2/S100-S10 15019	High Temp. 100 °C	•	15	4-wire DC PNP	10-65 VDC	150	≤200	-25 to +100	IP67	PBT	PBT	GN	YE	A	2	A4
Bi20-CP40-VN4X2/S10 1579221	Ext. Range	•	20	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	1	A4
Bi20-CP40-VP4X2/S10 15012	Ext. Range	•	20	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Ni20-CP40-VN4X2/S10 15251	Comp. Outputs		20	4-wire DC NPN	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	1	A4
Ni20-CP40-VP4X2/S10 15011	Comp. Outputs		20	4-wire DC PNP	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Ni20-CP40-VP4X2/S100-S10 15020	High Temp. 100 °C		20	4-wire DC PNP	10-65 VDC	150	≤200	-25 to +100	IP67	PBT	PBT	GN	YE	A	2	A4
Ni35-CP40-VN4X2/S10 15254	Comp. Outputs		35	4-wire DC NPN	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	1	A4
Ni35-CP40-VP4X2/S10 15014	Comp. Outputs		35	4-wire DC PNP	10-65 VDC	150	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	2	A4
Ni40U-CP40-VN4X2/S10 1540611	Uprox, Ext. Range		40	4-wire DC NPN	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	1	A4
Ni40U-CP40-VP4X2/S10 1540601	Uprox, Ext. Range		40	4-wire DC PNP	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	2	A4
Ni50U-CP40-VN4X2/S10 1625807	Uprox+		50	4-wire DC NPN	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	1	A4
Ni50U-CP40-VP4X2 1538303	Uprox+		50	4-wire DC PNP	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	A	2	A4

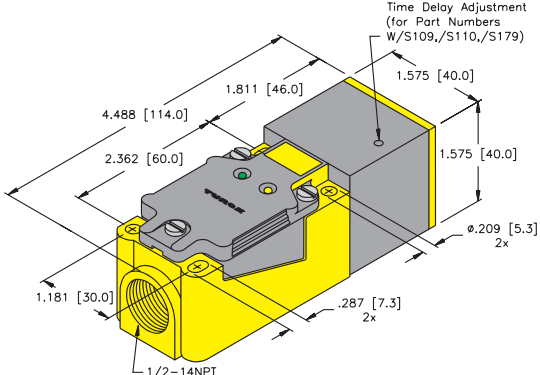
We reserve the right to make technical alterations without prior notice.

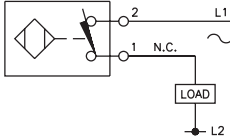
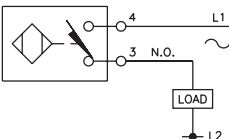
Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CP40

## Rotatable Sensing Head with AC/DC Outputs and Terminal Chamber

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CP40 - Embeddable/Nonembeddable, Terminal Chamber</p>

<p><b>B</b></p>  <p>CP40 - Embeddable/Nonembeddable, Terminal Chamber</p>	
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Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p>-OR-</p> 

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3.0</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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## Rectangular Inductive Sensors | CP40

### Rotatable Sensing Head with AC/DC Outputs and Terminal Chamber


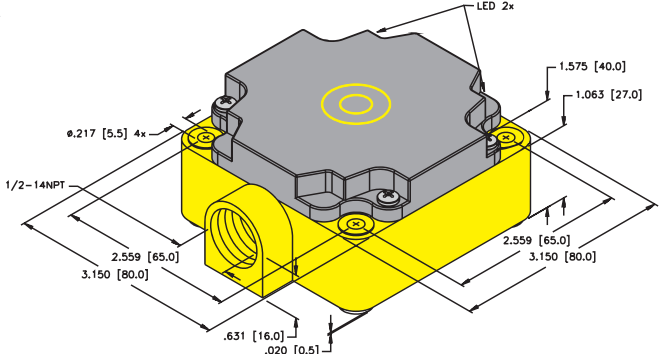
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-CP40-FDZ30X2/S10 4280601	Uprox	•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	PBT	PBT	GN	YE	A	1	A5
Bi15-CP40-FDZ30X2/S10 42241	Prog. Outputs	•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	60	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
Bi15-CP40-FDZ30X2/S10-S97 42266	Low Temp. -40 °C	•	15	2-wire AC/DC	20-250 VAC/10-300 VDC	60	≤400/300	-40 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
Bi15-CP40-FZ3X2/S109-S10 13737	Time On Delay	•	15	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	1	A6
Bi15-CP40-FZ3X2/S110-S10 13735	Time Off Delay	•	15	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	1	A6
Bi15-CP40-FZ3X2/S10 13410	Prog. Outputs	•	15	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
Bi15-CP40-FZ3X2/S10-S97 1341010	Low Temp. -40 °C	•	15	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-40 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
Bi15-CP40-FZ3X2/S100-S10 13776	High Temp. 100 °C	•	15	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +100	IP67	PBT	PBT	GN	RD	A	1	A6
Ni20-CP40-FDZ30X2/S10 42242	Prog. Outputs		20	2-wire AC/DC	20-250 VAC/10-300 VDC	60	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
Ni20-CP40-FZ3X2/S10 13411	Prog. Outputs		20	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
Ni20-CP40-FZ3X2/S100-S10 13775	High Temp. 100 °C		20	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +100	IP67	PBT	PBT	GN	RD	A	1	A6
Ni20-CP40-FZ3X2/S110-S10 13746	Time Off Delay		20	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	1	A6
Ni30-CP40-FZ3X2/S109-S10 13747	Time On Delay		30	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	1	A6
Ni30-CP40-FZ3X2/S110-S10 13744	Time Off Delay		30	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	1	A6
Ni35-CP40-FDZ30X2/S10 42245	Prog. Outputs		35	2-wire AC/DC	20-250 VAC/10-300 VDC	60	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
Ni35-CP40-FZ3X2/S10 13413	Prog. Outputs		35	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
Ni40U-CP40-FDZ30X2/S10 4280801	Uprox		40	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP68	PBT	PBT	GN	YE	A	1	A5
Ni40-CP40-FZ3X2/S100-S10 1374802	High Temp. 100 °C		40	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +100	IP67	PBT	PBT	GN	RD	A	1	A6

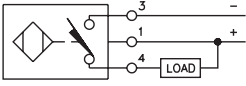
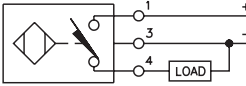
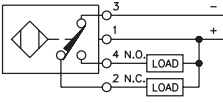
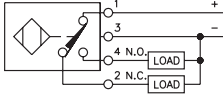
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Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CP80

## Top Sensing with 3 and 4-wire DC Outputs and Terminal Chamber

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="930 667 1372 688">CP80 - Embeddable/Nonembeddable, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets	
<p data-bbox="105 762 121 783">1</p> 	<p data-bbox="808 762 824 783">2</p> 
<p data-bbox="105 945 121 966">3</p> 	<p data-bbox="808 945 824 966">4</p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="399 1167 532 1188">Ripple: <math>\leq 10\%</math></p> <p data-bbox="212 1194 634 1215">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="128 1222 537 1243">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="107 1249 760 1270">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p data-bbox="188 1276 760 1297"><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p data-bbox="188 1304 760 1325"><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="232 1331 553 1352">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="318 1358 781 1379">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox, Rectangular)</p> <p data-bbox="318 1386 699 1407"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p> <p data-bbox="212 1413 537 1434">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p>	<p data-bbox="1003 1167 1284 1188">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="915 1194 1268 1215">Reverse Polarity Protection: Incorporated</p> <p data-bbox="956 1222 1268 1243">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1249 1300 1270">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="987 1276 1219 1297">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1304 1252 1325">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1331 1455 1352">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1358 1422 1379">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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# Rectangular Inductive Sensors | CP80

## Top Sensing with 3 and 4-wire DC Outputs and Terminal Chamber


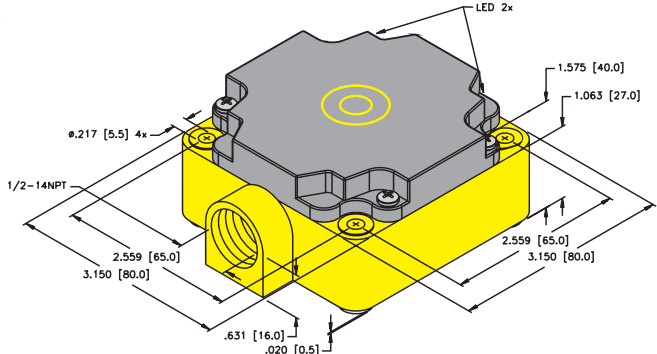
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi40-CP80-VN4X2/S10 1579800	Comp. Outputs	•	40	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	3	A4
Bi40-CP80-VP4X2/S10 15698	Comp. Outputs	•	40	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	4	A4
Ni40-CP80-VP4X2/S10 15015	Comp. Outputs		40	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	4	A4
Ni50-CP80-VN4X2/S10 15256	Comp. Outputs		50	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	3	A4
Ni50-CP80-VP4X2/S10 15016	Comp. Outputs		50	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	A	4	A4
Ni75U-CP80-AN6X2/S10 1623811	Uprox		75	3-wire DC NPN	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	1	A4
Ni75U-CP80-AP6X2/S10 1623801	Uprox		75	3-wire DC PNP	10-30 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	2	A4
Ni75U-CP80-VN4X2/S10 1540811	Uprox		75	4-wire DC NPN	10-65 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	3	A4
Ni75U-CP80-VP4X2/S10 1540801	Uprox		75	4-wire DC PNP	10-65 VDC	250	≤200	-30 to +85	IP67	PBT	PBT	GN	YE	A	4	A4

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | CP80

## Top Sensing with AC/DC Outputs and Terminal Chamber

Housing Style	Dimension Drawings
	<p>A</p>  <p>CP80 - Embeddable/Nonembeddable, Terminal Chamber</p>

### Wiring Diagrams/Mating Cordsets



A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (leakage) Current: <math>\leq 1.7</math> mA (AC)</p> <p><math>\leq 1.5</math> mA (DC)</p>		<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3.0</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6	2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>		<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz)</p> <p><math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm</p> <p><math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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# Rectangular Inductive Sensors | CP80

## Top Sensing with AC/DC Outputs and Terminal Chamber


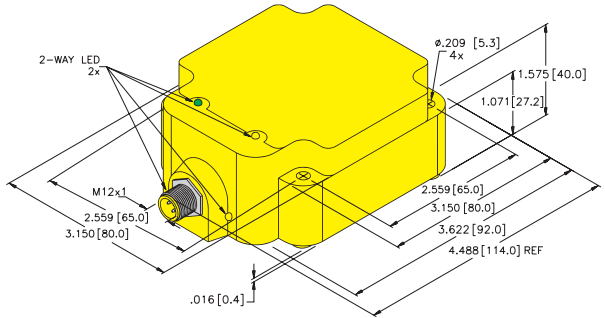
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi40-CP80-FDZ30X2/S10</b> 4230901	Prog. Outputs	•	40	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
<b>Bi40-CP80-FZ3X2/S10</b> 1340401	Prog. Outputs	•	40	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
<b>Ni40-CP80-FZ3X2/S10</b> 13415	Prog. Outputs		40	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
<b>Ni40-CP80-FZ3X2/S100-S10</b> 13453	High Temp. 100 °C		40	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +100	IP67	PBT	PBT	GN	RD	A	1	A6
<b>Ni50-CP80-FZ3X2/S10</b> 13410	Prog. Outputs		50	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A6
<b>Ni50-CP80-FDZ30X2/S10</b> 42321	Prog. Outputs		50	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
<b>Ni50-CP80-FDZ30X2/S10-S100</b> 4229000	High Temp. 100 °C		50	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +100	IP67	PBT	PBT	GN	RD	A	1	A5
<b>Ni75U-CP80-FDZ30X2/S10</b> 4280901	Uprox		75	2-wire AC/DC	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	PBT	PBT	GN	YE	A	1	A5

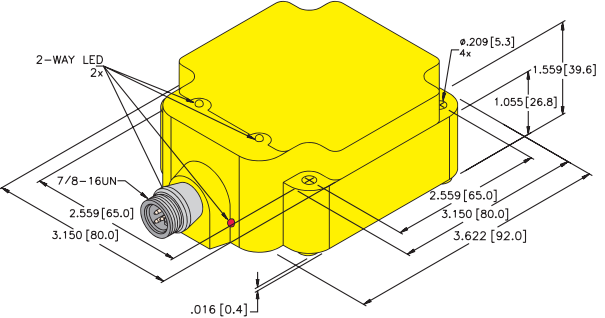
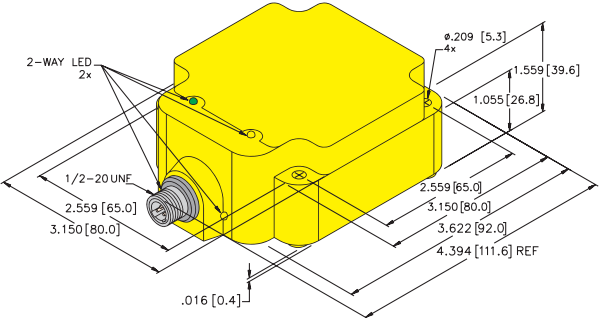
We reserve the right to make technical alterations without prior notice.

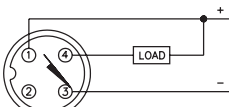
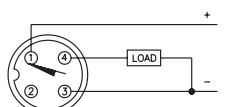
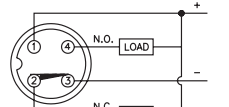
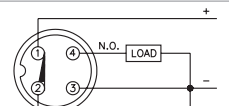

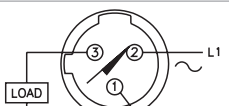
Rectangular Inductive Sensors

# Rectangular Inductive Sensors | Q80

## Top Sensing with 3 and 4-wire DC or AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>Q80 - Embeddable/Nonembeddable, Eurofast Connector</p>

<p><b>B</b></p>  <p>Q80 - Embeddable, Minifast Connector</p>	<p><b>C</b></p>  <p>Q80 - Embeddable, Microfast Connector</p>
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Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.4T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>5</b></p>  <p>Mating Cordset: RKM 30-*M</p>	<p><b>6</b></p>  <p>Mating Cordset: KB 3T-*</p>

A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular) ≤20 mA (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: ≤8 ms</p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Trigger Current for Short Circuit Protection: AC: ≥440 mA; DC: ≥330 mA AC: ≥120 mA; DC: ≥120 mA</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA (AC) ≤1.5 mA (DC)</p>		<p>Minimum Load Current: ≥3.0 mA</p> <p>Inrush Current: ≤3.0 A (≤20 ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Rectangular Inductive Sensors | Q80

## Top Sensing with 3 and 4-wire DC or AC/DC Outputs


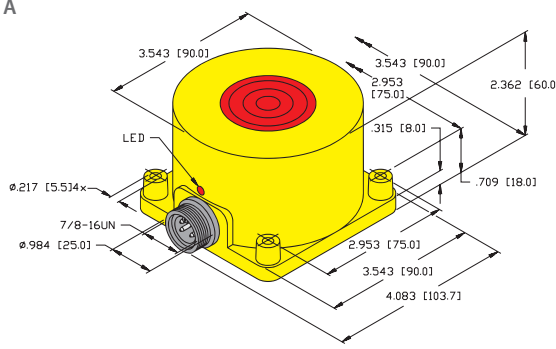
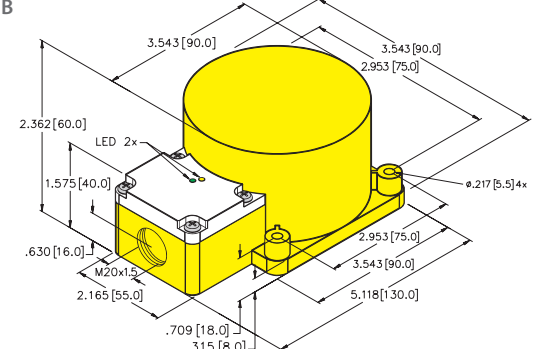
Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi50U-Q80-AP6X2-H1141</b> 1608940	Uprox+	•	50	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	2	A4
<b>Bi50U-Q80-VN4X2-H1141</b> 1562001	Uprox+, Comp. Outputs	•	50	4-wire DC NPN	10-65 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	3	A4
<b>Bi50U-Q80-VP4X2-H1141</b> 1562000	Uprox+, Comp. Outputs	•	50	4-wire DC PNP	10-65 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	4	A4
<b>Bi50-Q80-ADZ30X2-B1131</b> 4200310		•	50	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	5	A5
<b>Bi50-Q80-ADZ30X2-B3131</b> 4200311		•	50	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	C	6	A5
<b>Ni75U-Q80-AN6X2-H1141</b> 1625856	Uprox+		75	3-wire DC NPN	10-30 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	1	A4
<b>Ni75U-Q80-AP6X2-H1141</b> 1625855	Uprox+		75	3-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	2	A4
<b>Ni75U-Q80-VP4X2-H1141</b> 1625857	Uprox+, Comp. Outputs		75	4-wire DC PNP	10-65 VDC	250	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	A	4	A4

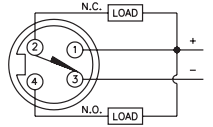
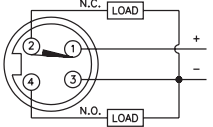
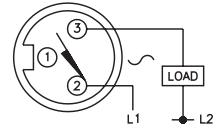
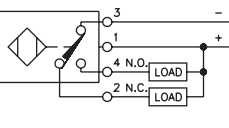
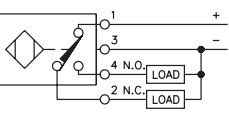
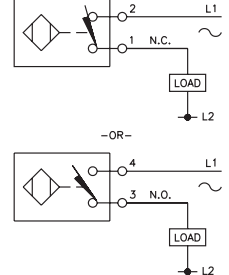
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Rectangular Inductive Sensors | K90 & K90SR

## Top Sensing with 4-wire DC or AC/DC Outputs

Housing Style	Dimension Drawings	
	 <p style="text-align: center;">K90 - Nonembeddable, Minifast Connector</p>	 <p style="text-align: center;">K90SR - Nonembeddable, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p style="text-align: center;">Mating Cordset: RK 40-*M</p>	<p>2</p>  <p style="text-align: center;">Mating Cordset: RK 40-*M</p>	<p>3</p>  <p style="text-align: center;">Mating Cordset: RK 30-*M</p>
<p>4</p> 	<p>5</p> 	<p>6</p> 

We reserve the right to make technical alterations without prior notice.

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Rectangular) ≤20 mA (Uprox+, Uprox 3)</p> <p>Time Delay Before Availability: ≤8 ms</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Inrush Current: ≤8 A (≤10ms max. 5 Hz) ≤1 A (≤10 ms max. 5 Hz) 12 mm ≤0.2 A (≤10 ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

## Rectangular Inductive Sensors | K90 & K90SR

### Top Sensing with 4-wire DC or AC/DC Outputs

Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni60-K90-VN4X-B2141 15203	Comp. Outputs		60	4-wire DC NPN	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	A	1	A4
Ni60-K90-VP4X-B2141 15103	Comp. Outputs		60	4-wire DC PNP	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	A	2	A4
Ni60-K90-AZ3X-B2131 13542			60	2-wire AC	20-250 VAC/10-300 VDC	20	≤500	-25 to +70	IP67	PBT	PBT	N/A	YE	A	3	A6
Ni60-K90SR-VN4X2 15740	Comp. Outputs		60	4-wire DC NPN	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	B	4	A4
Ni60-K90SR-VP4X2 15640	Comp. Outputs		60	4-wire DC PNP	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	B	5	A4
Ni60-K90SR-FZ3X2 13429	Prog. Outputs		60	2-wire AC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	B	6	A6
Ni100U-K90SR-VP4X2 1625834	Uprox+, Comp. Outputs		100	4-wire DC PNP	10-65 VDC	250	≤200	-30 to +85	IP68	PBT	PBT	GN	YE	B	5	A4

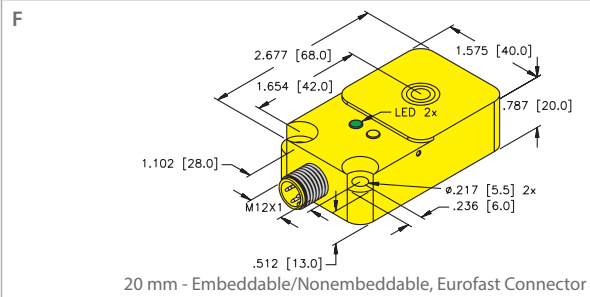
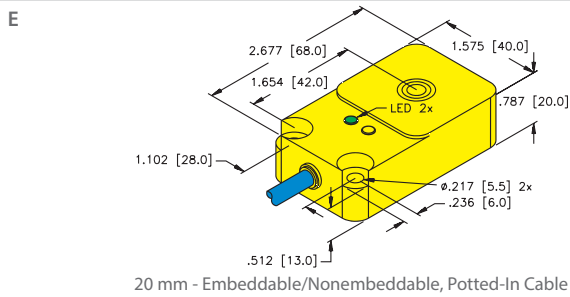
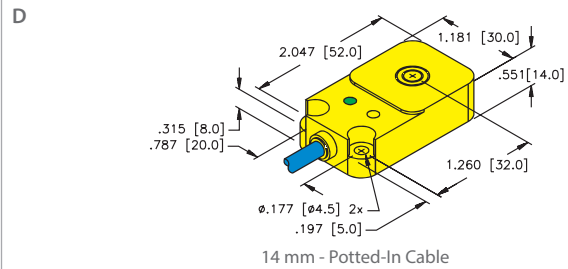
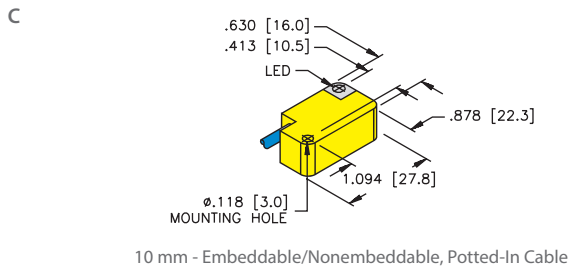
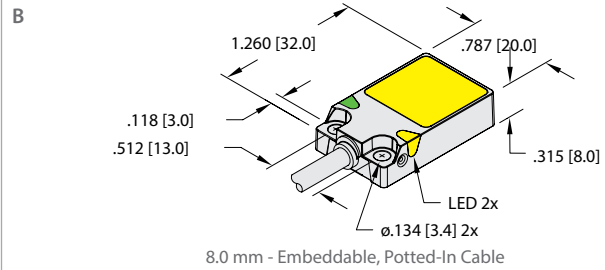
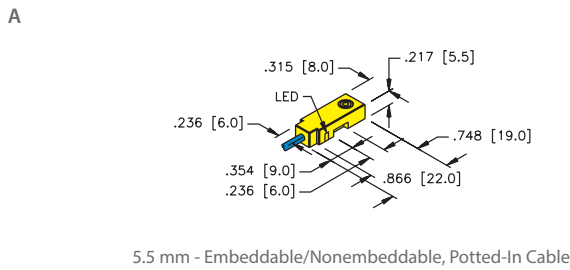
We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

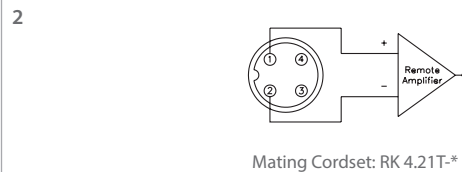
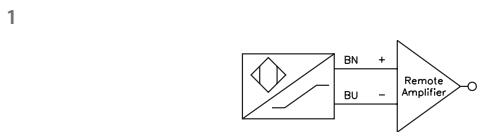
# Rectangular Inductive Sensors | Namur



## Dimension Drawings



## Wiring Diagrams/Mating Cordsets



## A1 2-wire DC NAMUR - (Y0 and Y1)

Differential Travel (Hysteresis):	1-10% (5% typical)
Nominal Voltage:	8.2 VDC (EN60947-5-6)
Load Resistance:	1000 Ω
Non-activated Current Consumption:	≥2.1 mA
Activated Current Consumption:	≤1.2 mA
Recommended Switching Point for Remote Amplifier:	>1.2 to <2.1 mA, typ. 1.55 mA ON/1.75 mA OFF

Power-On Effect:	Realized in Amplifier
Reverse Polarity Protection:	Incorporated
Wire-Break Protection:	Realized in Amplifier
Transient Protection:	Realized in Amplifier
Shock:	30 g, 11 ms
Vibration:	55 Hz, 1 mm Amplitude in all 3 Planes
Repeatability:	≤2% of Rated Operating Distance

### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

We reserve the right to make technical alterations without prior notice.

# Rectangular Inductive Sensors | Namur

Intrinsically Safe

Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-Q5.5K-Y1X 4055300		•	2	2-wire DC NAMUR	8.2 VDC nominal	2000	Remote	-25 to +70	IP67	PP	PP	N/A	YE	2M/TPU	A	1	A1
Bi5-Q08-Y1X 4054000		•	5	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	Zamak	PP	N/A	YE	2M/TPU	B	1	A1
Bi2-Q10S-Y1X 4012130		•	2	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PP-GF20	PP-GF20	N/A	YE	2M/PVC	C	1	A1
Bi10-Q14-Y1X 1608730		•	10	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/TPU	D	1	A1
Bi15-Q20-Y1X 1080020		•	15	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/TPU	E	1	A1
Bi15-Q20-Y1X-H1141 1080025		•	15	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PBT	PBT	N/A	YE	--	F	2	A1

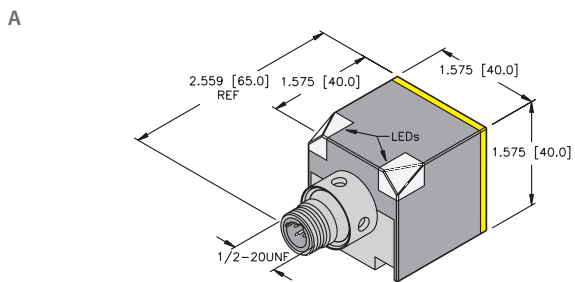
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Rectangular Inductive Sensors

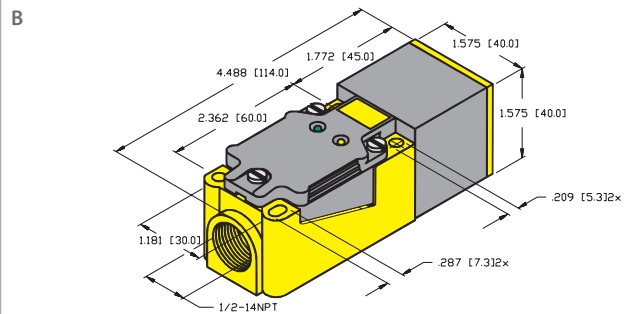
# Rectangular Inductive Sensors | Namur



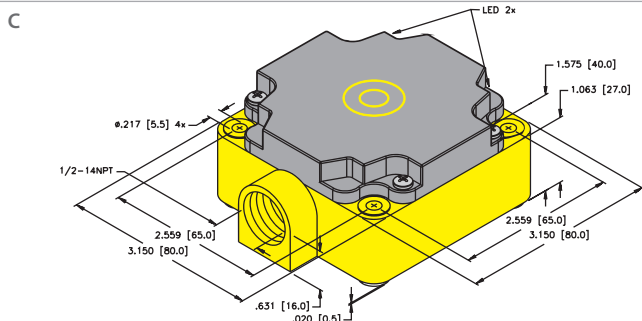
## Dimension Drawings



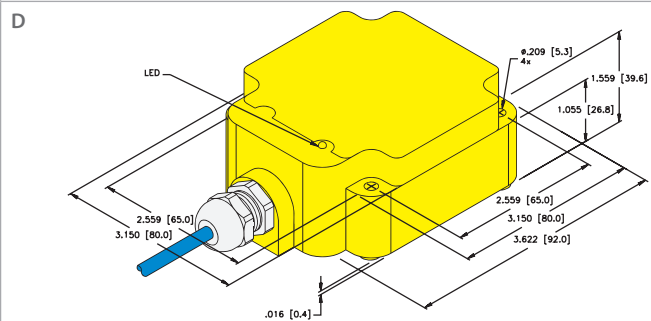
CK40 - Embeddable/Nonembeddable, Eurofast Connector



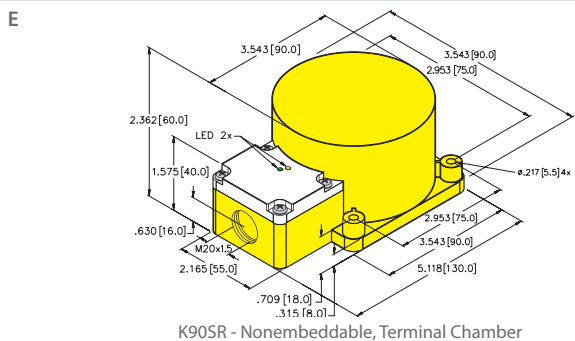
CP40 - Embeddable/Nonembeddable, Terminal Chamber



CP80 - Embeddable/Nonembeddable, Terminal Chamber



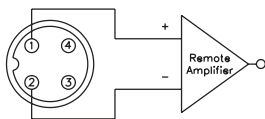
Q80 - Nonembeddable, Potted-In Cable



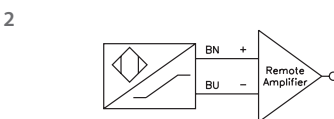
K90SR - Nonembeddable, Terminal Chamber

We reserve the right to make technical alterations without prior notice.

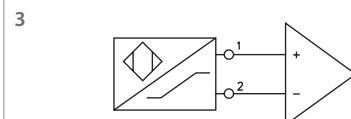
## Wiring Diagrams/Mating Cordsets



Mating Cordset: RK 4.21T-\*



2



3

### A1

### 2-wire DC NAMUR - (Y0 and Y1)

Differential Travel (Hysteresis):	1-10% (5% typical)
Nominal Voltage:	8.2 VDC (EN60947-5-6)
Load Resistance:	1000 Ω
Non-activated current consumption:	≥2.1 mA
Activated current consumption:	≤1.2 mA
Recommended Switching Point for Remote Amplifier:	>1.2 to <2.1 mA, typ. 1.55 mA ON/1.75 mA OFF

Power-On Effect:	Realized in Amplifier
Reverse Polarity Protection:	Incorporated
Wire-Break Protection:	Realized in Amplifier
Transient Protection:	Realized in Amplifier
Shock:	30 g, 11 ms
Vibration:	55 Hz, 1 mm Amplitude in all 3 Planes
Repeatability:	≤2% of Rated Operating Distance

#### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

# Rectangular Inductive Sensors | Namur

Intrinsically Safe

Part Number/ ID Number	Features	Embeddable	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi15-CK40-Y1X-H1141 4065000		•	15	2-wire DC NAMUR	8.2 VDC nominal	150	Remote	-25 to +70	IP67	PBT	PA 12	N/A	YE	--	A	1	A1
Bi15-CP40-Y1X/S10 10120		•	15	2-wire DC NAMUR	8.2 VDC nominal	150	Remote	-25 to +70	IP67	PBT	PBT	N/A	YE	--	B	3	A1
Ni20-CP40-Y1X/S10 10121			20	2-wire DC NAMUR	8.2 VDC nominal	150	Remote	-25 to +70	IP67	PBT	PBT	N/A	YE	--	B	3	A1
Ni35-CP40-Y1X/S100-S10 1011126	High Temp. 100 °C		35	2-wire DC NAMUR	8.2 VDC nominal	80	Remote	-25 to +100	IP67	PBT	PBT	N/A	YE	--	B	3	A1
Ni50-CP80-Y1/S10 10401			50	2-wire DC NAMUR	8.2 VDC nominal	100	Remote	-25 to +70	IP67	PBT	PBT	N/A	N/A	--	C	3	A1
Ni60-Q80-Y1X 1008700			60	2-wire DC NAMUR	8.2 VDC nominal	100	Remote	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/ PVC	D	2	A1
Ni50-K90SR-Y1 10074			50	2-wire DC NAMUR	8.2 VDC nominal	100	Remote	-25 to +70	IP67	PBT	PBT	N/A	N/A	--	E	3	A1

We reserve the right to make technical alterations without prior notice.

Rectangular Inductive Sensors

# Notes














Notes



# Inductive Barrel Sensor Selection Guide

Embeddable/Nonembeddable Barrels					
					
Housing	3 mm	4 mm	4 mm	4 mm	5 mm
Sensing Range	1 mm	1 mm	1 mm	1 mm	1 mm
Pages	B9	B9	B9	B11	B11
Features					
2-wire					
3/4-wire	•	•	•	•	•
2-wire AC/DC					




Embeddable/Nonembeddable Barrels				
				
Housing	5 mm	6.5 mm	6.5 mm	8 mm
Sensing Range	1 mm	1.5 - 6 mm	1.5 - 6 mm	1.5 - 2 mm
Pages	B11	B13 - 16	B13 - 16	B17
Features		Uprox	Uprox	
2-wire				
3/4-wire	•	•	•	•
2-wire AC/DC				

Embeddable/Nonembeddable Barrels				
				
Housing	8 mm	Side Sensing	Side Sensing	8 mm
Sensing Range	1.5 - 2 mm	1 - 1.5 mm	1.5 mm	1.5 - 6 mm
Pages	B17	B19	B19	B23 - 34
Features	Uprox			Uprox
2-wire				•
3/4-wire	•	•	•	•
2-wire AC/DC				





We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensor Selection Guide





### Embeddable/Nonembeddable Barrels

				
Housing	8 mm	12 mm	12 mm	12 mm
Sensing Range	1.5 - 6 mm	2 - 10 mm	2 - 8 mm	2 - 10 mm
Pages	B35 - 42	B43 - 64	B59	B65 - 72
Features		Uprox	Uprox	
2-wire	•	•		•
3/4-wire	•	•	•	•
2-wire AC/DC		•		•

### Embeddable/Nonembeddable Barrels

				
Housing	12 mm	12 mm	18 mm	18 mm
Sensing Range	2 - 8 mm	2 - 8 mm	5 - 15 mm	2 - 10 mm
Pages	B73	B75	B77 - 104	B95; B103
Features	Uprox	Uprox	Uprox	Uprox
2-wire		•	•	
3/4-wire	•	•	•	•
2-wire AC/DC	•		•	





### Embeddable/Nonembeddable Barrels


				
Housing	18 mm	18 mm	18 mm	18 mm
Sensing Range	5 - 15 mm	5 - 12 mm	5 - 10 mm	5 - 12 mm
Pages	B105 - 110	B99 - 112	B113	B115
Features	Uprox	Uprox	Uprox	Uprox
2-wire	•	•		
3/4-wire	•	•	•	•
2-wire AC/DC	•	•	•	•





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Inductive Barrel Sensors

# Inductive Barrel Sensor Selection Guide

Embeddable/Nonembeddable Barrels				
				
Housing	30 mm	30 mm	30 mm	30 mm
Sensing Range	10 - 30 mm	10 - 20 mm	10 - 30 mm	10 - 20 mm
Pages	B117 - 132	B127, B143	B133 - 140	B141
Features	Uprox	Uprox	Uprox	Uprox
2-wire	•	•	•	•
3/4-wire	•	•	•	•
2-wire AC/DC	•	•	•	•

Embeddable/Nonembeddable Barrels				
				
Housing	30 mm	30 mm	40 mm	47 mm
Sensing Range	10 - 20 mm	10 - 20 mm	30 mm	20 - 25 mm
Pages	B145	B145	B147	B147
Features	Uprox			
2-wire				
3/4-wire	•	•	•	•
2-wire AC/DC	•	•	•	•

Embeddable/Nonembeddable Barrels				
				
Housing	47 mm	40 mm	47 mm	Variable
Sensing Range	20 - 25 mm	15 - 30 mm	25 - 40 mm	1 - 15 mm
Pages	B147	B149	B149	B151 - 162
Features				
2-wire				•
3/4-wire	•	•	•	
2-wire AC/DC	•	•	•	

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# Inductive Barrel Sensor Part Number Key

We reserve the right to make technical alterations without prior notice.

<b>B</b>	<b>I</b>	<b>10</b>	<b>U</b>	-	<b>G</b>	<b>T</b>	<b>30</b>	-	<b>A</b>	<b>DZ</b>	<b>30</b>	<b>X2</b>	<b>Wiring Option*</b>	<b>Special Option Code**</b>
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<p><b>Mounting</b>          B = embeddable          N = nonembeddable</p> <p><b>Principle of Operation</b>          I = inductive</p> <p><b>Rated Operating Distance (mm)</b></p> <p><b>Sensing Characteristics</b>          U = Uprox® sensor</p> <p><b>Housing Material Modifier</b>          E = stainless steel</p> <p><b>Housing Style</b></p> <p><b>Barrel - Metal</b>          G = full threading, generally chrome plated brass          GS = threaded side sensor          H = smooth, chrome plated brass or stainless steel          HS = smooth side sensor          M = partial threading, chrome plated brass</p> <p><b>Barrel - Plastic</b>          K = smooth          P = full threading          S = partial threading          SK = side sensing/slot sensor, plastic housing</p> <p><b>Primary Barrel Modifier</b>          T = PTFE coated</p> <p><b>Housing Diameter or Height (mm)</b></p> <p><b>Secondary Barrel Modifier</b>          CA = conduit adaptor          E = extended barrel length          EE = extra long barrel length          F = stainless steel face          FE = stainless steel face, extended barrel length          H = Stoneface®          K = short barrel length          M = medium barrel length          S = side sensing          SE = extended length          SK = right-angle terminal chamber          SR = straight terminal chamber          T = barb fitting at cable entry          TC = terminal chamber          WD = washdown IP68/IP69K</p>	<p><b>Number of LEDs</b>          (blank) = no LEDs          X = 1 LED          X2 = 2 LEDs</p> <p><b>Voltage Range</b></p> <p><b>AC/DC: (No SCP**)</b>          3 = 20-250 VAC, 10-300 VDC          14 = 20-132 VAC, 10-140 VDC          31 = 20-250 VAC, 10-300 VDC, plastic barrel          33 = 35-250 VAC, grounded metal barrel</p> <p><b>AC/DC: (Latched SCP)</b>          30 = 20-250 VAC, 10-300 VDC          32 = 20-250 VAC, 10-300 VDC          40 = 20-140 VAC/DC, high off-state current</p> <p><b>DC:</b>          4 = 10-65 VDC, polarity protected, pulsed SCP**          6 = 10-30 VDC, polarity protected, pulsed SCP          7 = 10-30 VDC, TTL compatible          8 = 20-30 VDC, polarity protected, pulsed SCP          41 = 10-55 VDC, polarity protected, pulsed SCP          44 = 10-55 VDC          45 = 8.4-64 Volts          **SCP = short-circuit and overload protection</p> <p><b>Output</b>          D = 2-wire DC (transistor output)          DZ = 2-wire AC/DC, (power MOSFET output)          G = 2-wire DC, low voltage drop          N = NPN transistor (current sinking)          P = PNP transistor (current sourcing)          Z = 2-wire AC or 2-wire AC/DC</p> <p><b>Output Function</b>          A = normally open (N.O.)          DA = dynamic output (ring sensor), normally open          F = connection programmable (N.O or N.C.)          R = normally closed (N.C.)          V = complementary outputs: one N.O., one N.C.          Y0 = NAMUR output, requires switching amplifier          Y1 = NAMUR output, requires switching amplifier, ATEX Approved</p>
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**NOTE:**  
 Part number keys are to assist in identification only.  
 Verify new part numbers with factory; some configurations are not possible.

# Inductive Barrel Sensor Part Number Key

## Wiring Options\*

### A. Connectorized Sensor

Bi2-M12-AN6X - H1 1 4 1

#### Connector Family

- B1 = Minifast®, 7/8"-16UN, metal, male
- B2 = Minifast®, 7/8"-16UN, plastic, male
- B3 = Microfast®, 1/2"-20UNF, metal, male
- H1 = Eurofast®, M12x1, metal or plastic, male
- V1 = Picofast®, snap and M8x1, metal, male

#### Connector/Sensor Transition

- 1 = straight
- 3 = straight with adapter
- 4 = right-angle with adapter

#### Factory Code

##### Example:

- 0 = non-standard wiring
- 1 = standard wiring
- 3 = N.C. DC output on pin 4
- 4 = N.O. 2-wire DC output on pin 4

#### Number of Pins

### B. Potted Cable

Bi2-G12-AN6X 7M

#### Cable Length

- (blank) = 2 meter cable
- 7M = 7 meter cable
- \*M = custom cable lengths available

### C. Potted Cable with Molded Connector

Bi2-G12-Y0X - 0.2 - RS 4.21T

#### Cable Length

##### examples:

- 0.2 = 0.2 meters (minimum)
- 2M = 2 meter cable
- 7M = 7 meter cable

#### Standard Cordset Connector

- AC: RSM30 = Minifast, 7/8"-16UN, metal, male, 3-conductor
- SB3T = Microfast, 1/2"-20UNF, metal, male, 30 conductor
- DC: RS4T = Eurofast, M12x1, metal or plastic, male, 3-conductor
- RS 4.2T = Eurofast, M12x1, metal or plastic, male, 2-conductor
- RS 4.21T = Eurofast, M12x1, metal or plastic, male, NAMUR, 2-conductor
- RS 4.4T = Eurofast, M12x1, metal or plastic, male, 4-conductor
- RSM40 = Minifast, 7/8"-16UN, metal, male, 4-conductor
- PSG3 = Picofast, snap, plastic, male, 3-conductor
- PSG3M = Picofast, M8x1, male, 3-conductor

## Option Codes for Special or Custom-Built Sensors\*\*

Bi 2-S12-AN7X /S100 or Bi10-M30-AN6X-H1141 /F2

#### examples:

- /S34 = weld field immune
- /S90 = TPU cable
- /S97 = -40 °C (-40 °F) operating temperature
- /S100 = +100 °C (+212 °F) operating temperature
- /S1589 = barrel sensors with Weldguard® laminate
- /S1610 = barrel sensors with tool steel sleeve and Weldguard® laminate

#### example:

- /F2 = alternate oscillator frequency

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors

### Mounting

Turck inductive proximity sensors are manufactured with a shielded coil, designated by “Bi” in the part number, and a nonshielded coil, designated by “Ni” in the part number. Embeddable (shielded) units may be safely flush-mounted in metal. Nonembeddable (nonshielded) units require a metal free area around the sensing face. Because of possible interference of the electromagnetic fields generated by the oscillators, minimum spacing is required between adjacent or opposing sensors.

It is good engineering practice to mount sensors horizontally or with the sensing face looking down. Avoid sensors that look up wherever considered, especially if metal filings and chips are present.

### Maximum Locknut Torque Specifications

The locknut torque should be considered for all threaded sensors to prevent the housing from being over stressed. The values below pertain to the locknut provided with each sensor. Liquid thread sealants of an anaerobic base, such as Loctite, are recommended if strong vibrations are likely. Torque values can vary, see individual data sheets for specific information.

**Caution:** Sensor barrels are typically brass. Consider break torque when selecting grade of thread sealant.

Barrel Size	Metal Barrel	Plastic Barrel
5 mm	5 Nm (3.7 ft-lb)	----
8 mm	5 Nm (3.7 ft-lb)	----
8 mm (M08 Ferrite)	7 Nm (5.2 ft-lb)	----
12 mm	10 Nm (7.4 ft-lb)	1 Nm (0.7 ft-lb)
18 mm	25 Nm (18 ft-lb)	2 Nm (1.4 ft-lb)
30 mm	75 Nm (55 ft-lb)	5 Nm (3.7 ft-lb)
47 mm	90 Nm (66 ft-lb)	----

### Drill Hole Sizes for Metric Threads

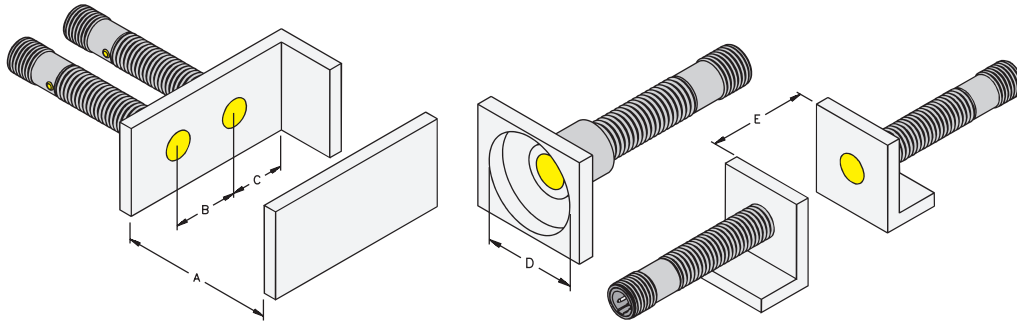
Thread Size	Pitch	Thru Hole (mm)	Tap Hole Dia. (mm)	Thru Hole (in)	Tap Hole Dia. (in)
M5 x 0.5	0.5	5.0	4.5	13/64	5/32
M8 x 1	1.0	8.0	7	21/64	1/4
M12 x 1	1.0	12.0	11	31/64	13/32
M18 x 1	1.0	18.0	17	23/32	41/64
M30 x 1.5	1.5	30.0	28	1-3/16	1-5/64
PG 9	1.41	15.2	14	5/8	1/2
PG 13.5	1.41	20.4	19	13/16	23/32
PG 36	1.59	47.0	45.5	1-7/8	1-47/64

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Inductive Barrel Sensors

# Inductive Barrel Sensors

## Embeddable Mounting Considerations



## Flush Mountable

Sensor Type	Barrel Diameter	A	B	C	D	E
Bi1	3.00	3.00	6.00	4.50	9.00	9.00
Bi1U	4.00	3.00	8.00	6.00	12.00	6.00
Bi1	4.00	3.00	8.00	6.00	12.00	6.00
Bi1	5.00	3.00	10.00	8.00	15.00	6.00
Bi1U	5.00	3.00	10.00	7.50	15.00	6.00
Bi1.5U	6.50	5.00	13.00	10.00	20.00	9.00
Bi1.5	6.50	5.00	13.00	10.00	20.00	9.00
Bi2	6.50	6.00	13.00	10.00	20.00	12.00
Bi1.5U	8.00	5.00	16.00	12.00	24.00	9.00
Bi1.5	8.00	5.00	16.00	12.00	24.00	9.00
Bi2	8.00	6.00	16.00	12.00	24.00	12.00
Bi2U	8.00	6.00	16.00	12.00	24.00	12.00
Bi3U	8.00	9.00	16.00	12.00	24.00	18.00
Bi2	11.00	6.00	22.00	17.00	33.00	12.00
Bi2	12.00	6.00	24.00	18.00	36.00	12.00
Bi3U	12.00	9.00	24.00	18.00	36.00	18.00
Bi3	12.00	9.00	24.00	18.00	36.00	18.00
Bi4	12.00	12.00	24.00	18.00	36.00	24.00
Bi4U	12.00	12.00	24.00	18.00	36.00	24.00
Bi6U	12.00	18.00	24.00	18.00	36.00	36.00
Bi5U	18.00	15.00	36.00	27.00	54.00	30.00
Bi5	18.00	15.00	36.00	27.00	54.00	30.00
Bi7	18.00	21.00	36.00	27.00	54.00	42.00
Bi8U	18.00	24.00	36.00	27.00	54.00	48.00
Bi8	18.00	24.00	36.00	27.00	54.00	48.00
Bi10U	18.00	30.00	36.00	27.00	54.00	60.00
Bi10U	30.00	27.00	60.00	45.00	90.00	54.00
Bi10	30.00	30.00	60.00	45.00	90.00	60.00
Bi12	30.00	36.00	60.00	45.00	90.00	72.00
Bi15	30.00	45.00	60.00	45.00	90.00	90.00
Bi15U	30.00	45.00	60.00	45.00	90.00	90.00
Bi 20U	30.00	60.00	60.00	45.00	90.00	120.00
Bi 20	47.00	60.00	94.00	71.00	141.00	120.00
Bi 25	47.00	75.00	94.00	71.00	141.00	150.00

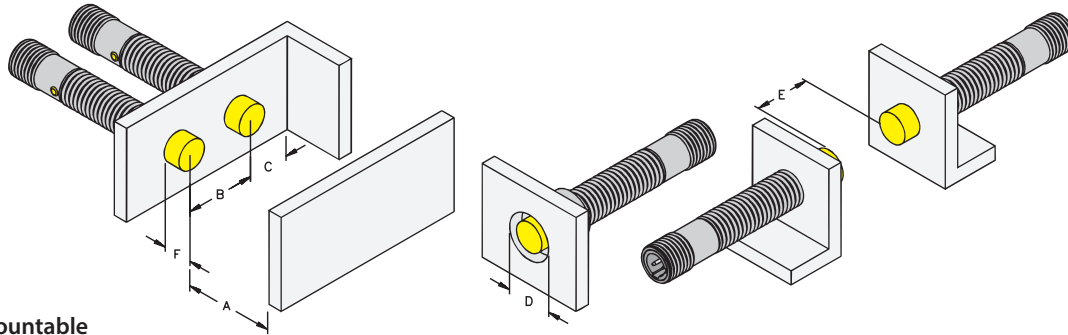
Dimensions are in mm.

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## Inductive Barrel Sensors

### Nonembeddable Mounting Characteristics

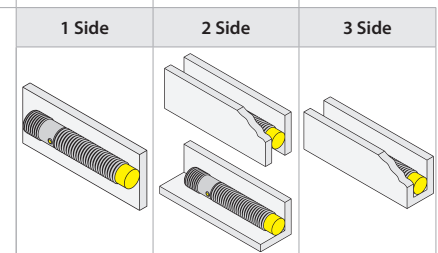


### Non-Flush Mountable

Sensor Type	Barrel Diameter	A	B	C	D	E	F	1 Side	2 Side	3 Side
Ni3	6.50	9.00	20.00	10.00	20.00	18.00	6.00			
Ni3	8.00	9.00	24.00	12.00	24.00	18.00	6.00			
Ni4U	8.00	12.00	32.00	12.00	32.00	24.00	8.00			
Ni4	8.00	12.00	24.00	12.00	24.00	24.00	8.00			
Ni6U	8.00	18.00	32.00	12.00	36.00	36.00	12.00			
Ni5	11.00	15.00	33.00	17.00	33.00	30.00	10.00			
Ni4	12.00	12.00	36.00	18.00	36.00	24.00	8.00			
Ni5	12.00	15.00	36.00	18.00	36.00	30.00	10.00			
Ni8U	12.00	24.00	48.00	18.00	45.00	48.00	16.00	Sr=6 mm*		
Ni8	12.00	24.00	36.00	18.00	36.00	48.00	16.00			
Ni10U	12.00	30.00	48.00	18.00	36.00	60.00	20.00			
Ni8	18.00	24.00	54.00	27.00	54.00	48.00	16.00			
Ni10	18.00	30.00	54.00	27.00	54.00	60.00	20.00			
Ni12U	18.00	36.00	70.00	27.00	54.00	72.00	24.00			
Ni14	18.00	42.00	54.00	27.00	54.00	84.00	20.00			
Ni15U	18.00	45.00	70.00	27.00	54.00	90.00	30.00			
Ni10	20.00	30.00	60.00	30.00	60.00	60.00	20.00			
Ni15	30.00	45.00	90.00	45.00	90.00	90.00	20.00			
Ni20U	30.00	60.00	90.00	45.00	90.00	120.00	40.00	Sr=15 mm*	Sr=12 mm*	Sr=11 mm*
Ni20	30.00	60.00	90.00	45.00	90.00	120.00	20.00			
Ni30U	30.00	90.00	135.00	45.00	90.00	180.00	60.00			
Ni20	40.00	60.00	120.00	60.00	120.00	120.00	40.00			
Ni30	40.00	90.00	120.00	60.00	120.00	180.00	40.00			
Ni25	47.00	75.00	141.00	71.00	141.00	150.00	40.00			
Ni40	47.00	120.00	141.00	71.00	141.00	240.00	40.00			

Dimensions are in mm.

\*The above Uprox Ni sensors with DC outputs and Stainless barrels can be flush mounted because the sensor automatically compensates for metal alongside its sensing face by decreasing the sensing range, preventing the output from locking on.


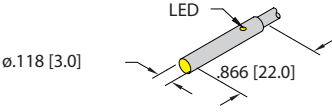
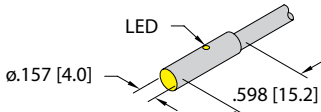
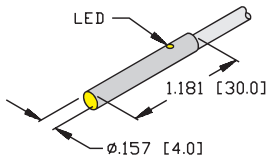
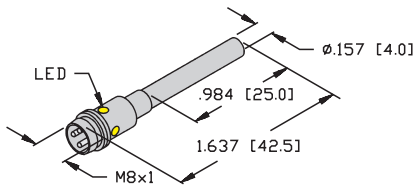
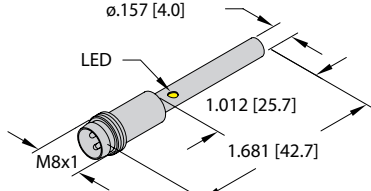


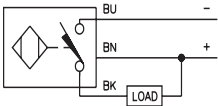
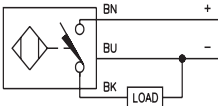
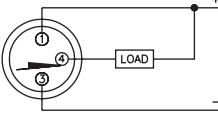
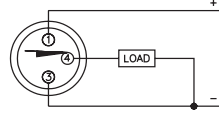
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 3 mm, 4 mm

## Embeddable Smooth Metal Barrels with DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>3 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>4 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>C</b></p>  <p>4 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>D</b></p>  <p>4 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p>  <p>4 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 3 mm, 4 mm

### Embeddable Smooth Metal Barrels with DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1U-EH04-AN6X 4602114	Uprox3	1	3-wire DC NPN	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi1U-EH04-AP6X 4602112	Uprox3	1	3-wire DC PNP	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4
Bi1-EH04-AN6X 4609640		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	C	1	A4
Bi1-EH04-AP6X 4609540		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	C	2	A4
Bi1-EH04K-AN6X 4609768	Short Barrel	1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	B	1	A4
Bi1-EH04K-AP6X 4609767	Short Barrel	1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	B	2	A4
Bi1-EH03-AN6X 1619326		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi1-EH03-AP6X 1619325		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	2	A4
Bi1U-EH04-AN6X-V1331 4602115	Uprox3	1	3-wire DC NPN	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	--	D	3	A4
Bi1U-EH04-AP6X-V1331 4602113	Uprox3	1	3-wire DC PNP	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	--	D	4	A4
Bi1-EH04-AN6X-V1331 4608540		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	E	3	A4
Bi1-EH04-AN6X-V1331/ S1367 100013816		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE		D	3	A4
Bi1-EH04-AP6X-V1331 4608440		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	E	4	A4
Bi1-EH04-AP6X-V1331/ S1367 100013735		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE		D	4	A4


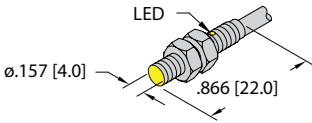
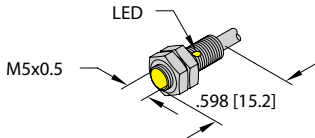
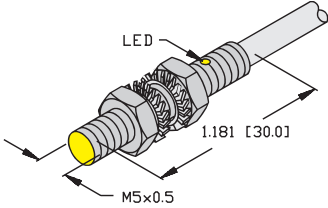
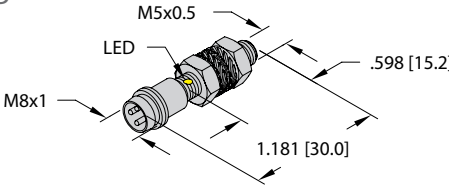
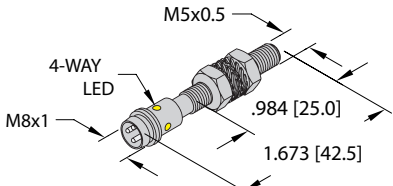
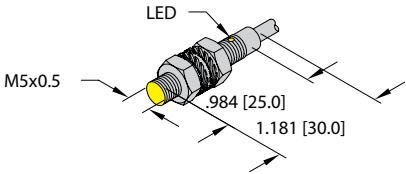
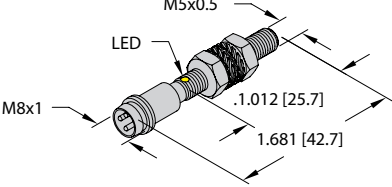
We reserve the right to make technical alterations without prior notice.

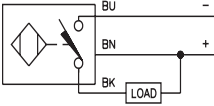
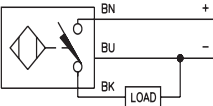
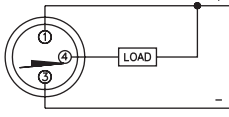
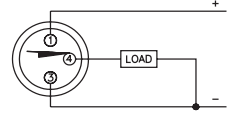
Inductive Barrel Sensors

/S1367 designates legacy sensor design prior to 2020

# Inductive Barrel Sensors | 4 mm, 5 mm

## Embeddable Threaded Metal Barrels with DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>4 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>5 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>C</b></p>  <p>5 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>D</b></p>  <p>5 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p>  <p>5 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>F</b></p>  <p>5 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>G</b></p>  <p>5 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)			
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>		<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 4 mm, 5 mm

### Embeddable Threaded Metal Barrels with DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1U-EG05-AN6X 4602118	Uprox3	1	3-wire DC NPN	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi1U-EG05-AP6X 4602116	Uprox3	1	3-wire DC PNP	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4
Bi1-EG05-AN6X 4609840		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	F	1	A4
Bi1-EG05-AN6X/S1367 100013741		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi1-EG05-AP6X 4609740		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	F	2	A4
Bi1-EG05-AP6X/S1367 100013734		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4
Bi1-EG05K-AN6X 4609764	Short Barrel	1	3-wire DC NPN	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	B	1	A4
Bi1-EG05K-AP6X 4609765	Short Barrel	1	3-wire DC PNP	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	B	2	A4
Bi1-EG04-AN6X 1619328		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi1-EG04-AP6X 1619327		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	2	A4
Bi1U-EG05-AN6X-V1331 4602119	Uprox3	1	3-wire DC NPN	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	--	E	3	A4
Bi1U-EG05-AP6X-V1331 4602117	Uprox3	1	3-wire DC PNP	10-30 VDC	2000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	--	E	4	A4
Bi1-EG05-AN6X-V1331 4608740		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	G	3	A4
Bi1-EG05-AN6X-V1331/ S1367 100013744		1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE		E	3	A4
Bi1-EG05-AP6X-V1331 4608640		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	G	4	A4
Bi1-EG05-AP6X-V1331/ S1367 100013729		1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE		E	4	A4
Bi1-EG05K-AP6X-V1331 4609766	Short Barrel	1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	D	4	A4


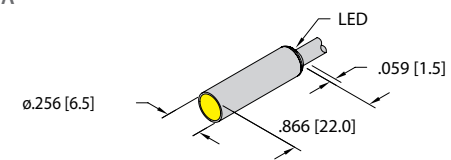
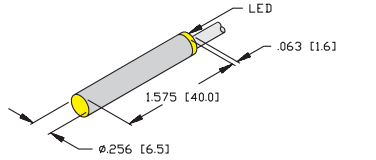
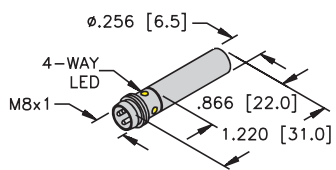
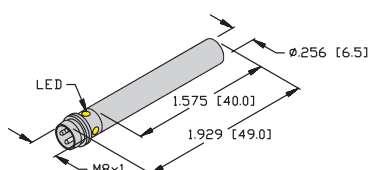
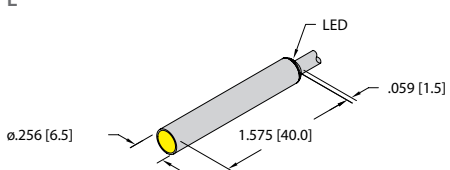
/S1367 designates legacy sensor design prior to 2020

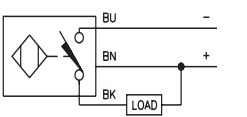
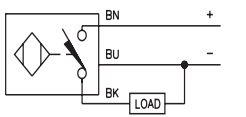
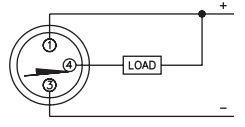
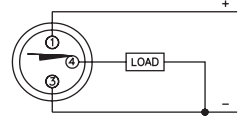
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 6.5 mm

## Embeddable Smooth Metal Barrels with DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>6.5 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>6.5 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>C</b></p>  <p>6.5 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>	<p><b>D</b></p>  <p>6.5 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p>  <p>6.5 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:</p> <ul style="list-style-type: none"> <li><math>\geq 220\text{ mA}</math> on 200 mA Load Current</li> <li><math>\geq 170\text{ mA}</math> on 150 mA Load Current</li> <li><math>\geq 120\text{ mA}</math> on 100 mA Load Current</li> </ul> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 6.5 mm

### Embeddable Smooth Metal Barrels with DC Outputs


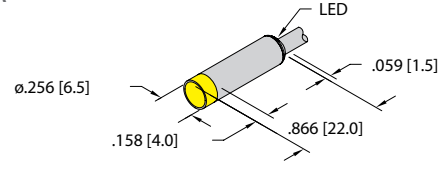
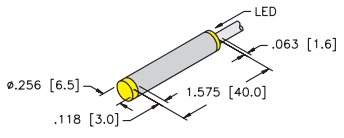
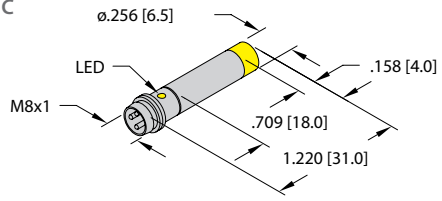
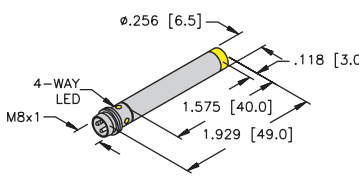
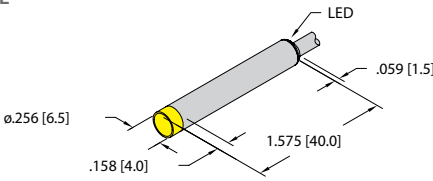
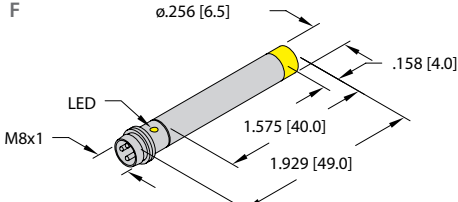
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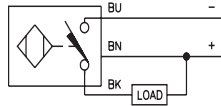
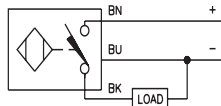
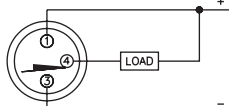
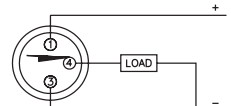
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2U-EH6.5-AN6X 4281170	Uprox	2	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/ TPU	B 1	A4	A4
Bi2U-EH6.5-AP6X 4281150	Uprox	2	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/ TPU	B 2	A4	A4
Bi2-EH6.5-AN6X 4612300		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	E 1	A4	A4
Bi2-EH6.5-AP6X 4612200		2	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	E 2	A4	A4
Bi2-EH6.5K-AN6X 4610100	Short Barrel	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	A 1	A4	A4
Bi2-EH6.5K-AP6X 4610000	Short Barrel	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	A 2	A4	A4
Bi1.5-EH6.5-AN6X 4612100		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	E 1	A4	A4
Bi1.5-EH6.5-AP6X 4612000		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	E 2	A4	A4
Bi1.5-EH6.5-AP6X/S100 4612001	High Temp. 100 °C	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	SS	PA6.6	N/A	YE	2M/ TPU	E 2	A4	A4
Bi1.5-EH6.5K-AN6X 4610640	Short Barrel	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	A 1	A4	A4
Bi1.5-EH6.5K-AP6X 4610540	Short Barrel	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/ TPU	A 2	A4	A4
Bi2U-EH6.5-AN6X-V1131 4281180	Uprox	2	3-wire DC NPN	10-30 VDC	1000	≤150	-25 to +70	IP68	SS	PA 12	N/A	YE	--	D 3	A4	A4
Bi2U-EH6.5-AP6X-V1131 4281160	Uprox	2	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +70	IP68	SS	PA 12	N/A	YE	--	D 4	A4	A4
Bi2-EH6.5-AN6X-V1131 4612320		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	D 3	A4	A4
Bi2-EH6.5-AP6X-V1131 4612220		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	D 4	A4	A4
Bi2-EH6.5K-AN6X-V1131 4610120	Short Barrel	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	C 3	A4	A4
Bi2-EH6.5K-AP6X-V1131 4610020	Short Barrel	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	C 4	A4	A4
Bi1.5-EH6.5-AN6X-V1131 4612120		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	D 3	A4	A4
Bi1.5-EH6.5-AP6X-V1131 4612020		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	D 4	A4	A4
Bi1.5-EH6.5K-AN6X-V1131 4610840	Short Barrel	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	C 3	A4	A4
Bi1.5-EH6.5K-AP6X-V1131 4610740	Short Barrel	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	--	C 4	A4	A4

Inductive Barrel Sensors

# Inductive Barrel Sensors | 6.5 mm

## Nonembeddable Smooth Metal Barrels with DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>6.5 mm - Nonembeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>6.5 mm - Nonembeddable, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>C</b></p>  <p>6.5 mm - Nonembeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>	<p><b>D</b></p>  <p>6.5 mm - Nonembeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p>  <p>6.5 mm - Nonembeddable, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>F</b></p>  <p>6.5 mm - Nonembeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>		

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



## Inductive Barrel Sensors | 6.5 mm

### Nonembeddable Smooth Metal Barrels with DC Outputs


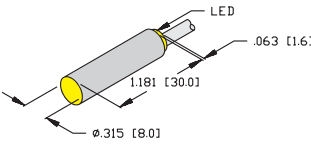
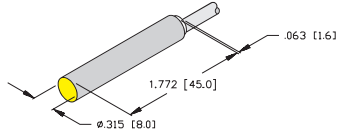
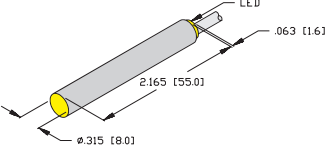
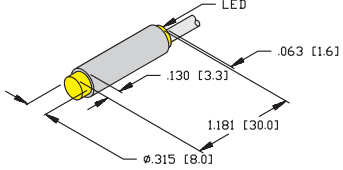
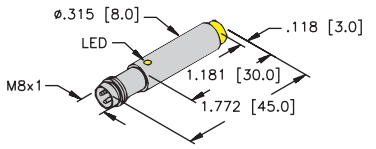
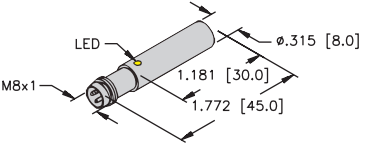
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni4U-EH6.5-AP6X 4600680	Uprox	4	3-wire DC PNP	10-30 VDC	3000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	B	2	A4
Ni3-EH6.5-AN6X 4612500		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	E	1	A4
Ni3-EH6.5-AP6X 4612400		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	E	2	A4
Ni3-EH6.5K-AN6X 4610300	Short Barrel	3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	A	1	A4
Ni3-EH6.5K-AP6X 4610200	Short Barrel	3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	A	2	A4
Ni6U-EH6.5-AP6X-V1131 4631510	Uprox+	6	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +70	IP68	SS	PA 12	N/A	YE	--	D	4	A4
Ni4U-EH6.5-AN6X-V1131 4600683	Uprox	4	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	--	D	3	A4
Ni4U-EH6.5-AP6X-V1131 4600681	Uprox	4	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	--	D	4	A4
Ni3-EH6.5-AN6X-V1131 4612520		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	--	F	3	A4
Ni3-EH6.5-AP6X-V1131 4612420		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	--	F	4	A4
Ni3-EH6.5K-AN6X-V1131 4610320	Short Barrel	3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	--	C	3	A4
Ni3-EH6.5K-AP6X-V1131 4610220	Short Barrel	3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	--	C	4	A4

We reserve the right to make technical alterations without prior notice.

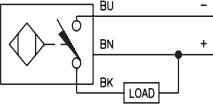
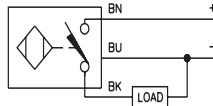
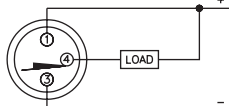
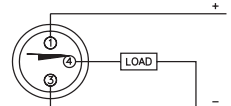
Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable and Nonembeddable Smooth Metal Barrels with DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>D</b></p>  <p>8 mm - Nonembeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>E</b></p>  <p>8 mm - Nonembeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>
<p><b>F</b></p>  <p>8 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>		

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

# Inductive Barrel Sensors | 8 mm

## Embeddable and Nonembeddable Smooth Metal Barrels with DC Outputs


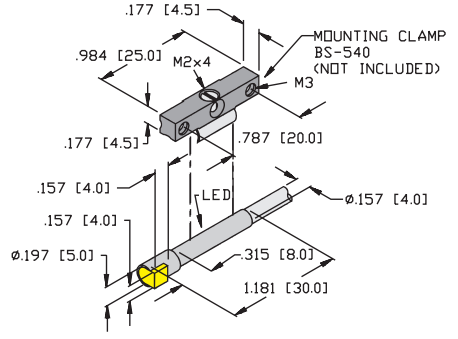
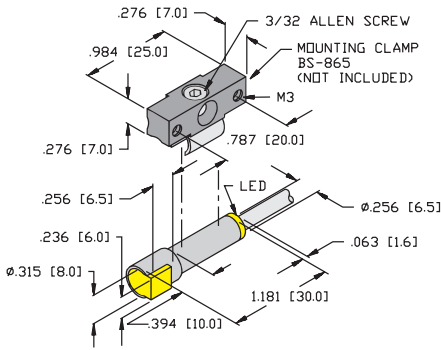
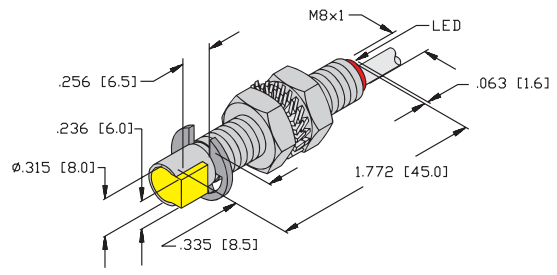
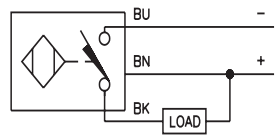
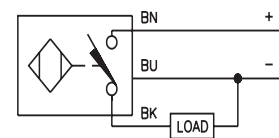
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1.5-H08K-AN6X 1604341	Short Barrel	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi1.5-H08K-AP6X 1604331	Short Barrel	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	2	A4
Bi1.5-H08M-AP6X 1604301		1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	B	2	A4
Bi1.5-H08-AN6X 16143		1.5	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi1.5-H08-AP6X 16043		1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4
Ni2-H08K-AN6X 16147	Short Barrel	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	D	1	A4
Ni2-H08K-AP6X 16047	Short Barrel	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	D	2	A4
Bi1.5-H08K-AN6X-V1131 1604340	Short Barrel	1.5	3-wire DC NPN	10-30 VDC	5000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	--	F	3	A4
Bi1.5-H08K-AP6X-V1131 1604330	Short Barrel	1.5	3-wire DC PNP	10-30 VDC	5000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	--	F	4	A4
Ni2-H08K-AN6X-V1131 16148	Short Barrel	2	3-wire DC NPN	10-30 VDC	5000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	--	E	3	A4
Ni2-H08K-AP6X-V1131 16048	Short Barrel	2	3-wire DC PNP	10-30 VDC	5000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	--	E	4	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 5 mm, 8 mm

## Embeddable Side Sensing Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>5 mm - Embeddable, Side Sensing, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>B</b></p>  <p>8 mm - Embeddable, Side Sensing, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Side Sensing, Potted-In Cable</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 5 mm, 8 mm

## Embeddable Side Sensing Metal Barrels with Cable and DC Outputs


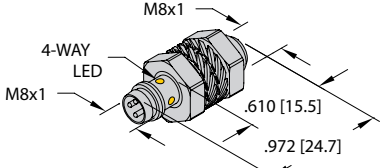
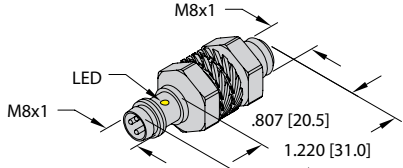
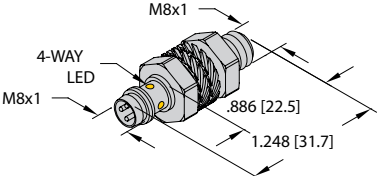
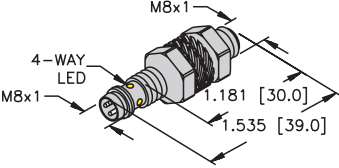
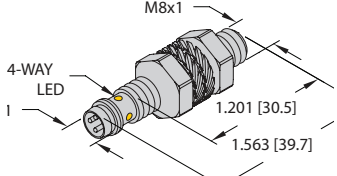
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1.5-HS865-AN6X 4604301	Side Sensing	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	B	1	A4
Bi1.5-HS865-AP6X 4604201	Side Sensing	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	B	2	A4
Bi1.5-GS880-AN6X 4604501	Side Sensing	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi1.5-GS880-AP6X 4604401	Side Sensing	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4
Bi1-HS540-AN6X 4604101	Side Sensing	1	3-wire DC NPN	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi1-HS540-AP6X 4604001	Side Sensing	1	3-wire DC PNP	10-30 VDC	3000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	2	A4

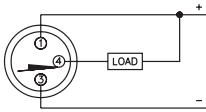
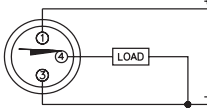
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>D</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi3U-EM08-AN6X-V1131 4602423	Uprox3	3	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +60	IP68	SS	PA 12	N/A	YE	D	1	A4
Bi3U-EMT08-AN6X-V1131 4602157	Uprox3, PTFE	3	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +60	IP68	SS	TC	N/A	YE	D	1	A4
Bi3U-EM08-AP6X-V1131 4602413	Uprox3	3	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +60	IP68	SS	PA 12	N/A	YE	D	2	A4
Bi3U-EMT08-AP6X-V1131 4602155	Uprox3, PTFE	3	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +60	IP68	SS	TC	N/A	YE	D	2	A4
Bi3-M08-AN6X-V1131 4602914		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	E	1	A4
Bi3-M08-AP6X-V1131 4602911		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	E	2	A4
Bi3-M08KK-AN6X-V1131 4602942	Short Barrel	3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	A	1	A4
Bi3-M08KK-AP6X-V1131 4602939	Short Barrel	3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	A	2	A4
Bi2-EG08K-AN6X-V1131 4669550		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	B	1	A4
Bi2-EG08K-AP6X-V1131 4669450		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	B	2	A4
Bi2-G08K-AP6X-V1131 4672803		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	D	2	A4
Bi2-M08K-AN6X-V1131 4602965		2	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	C	1	A4
Bi2-M08K-AP6X-V1131 4602968		2	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	C	2	A4
Bi1.5-EG08K-AN6X-V1131 4672540		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	B	1	A4
Bi1.5-EG08K-AP6X-V1131 4672440		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	B	2	A4


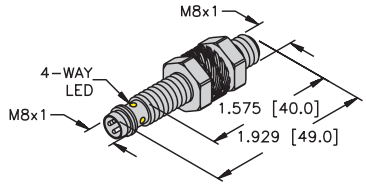
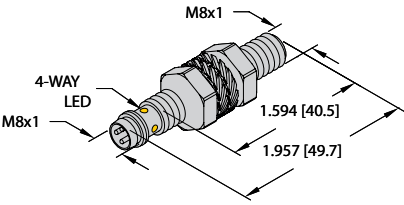
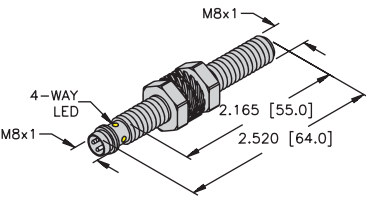
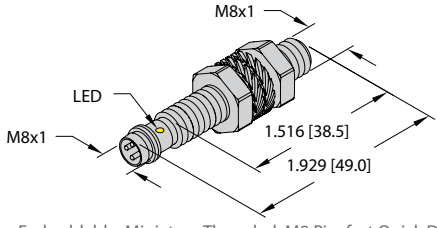
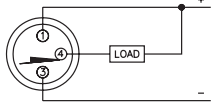
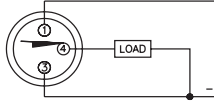
**Note:** Reference sensor data sheet for considerations if mounting a Bi3-M08 sensor flush in steel.

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>B</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>D</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3M-*, PKG 3M-*/S1587</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:</p> <ul style="list-style-type: none"> <li><math>\geq 220\text{ mA}</math> on 200 mA Load Current</li> <li><math>\geq 170\text{ mA}</math> on 150 mA Load Current</li> <li><math>\geq 120\text{ mA}</math> on 100 mA Load Current</li> </ul> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs


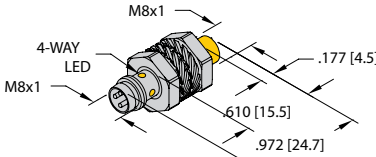
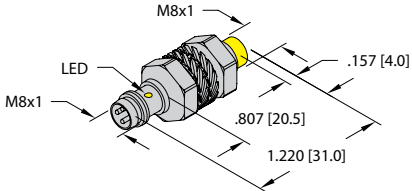
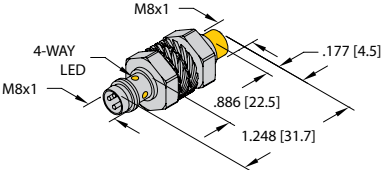
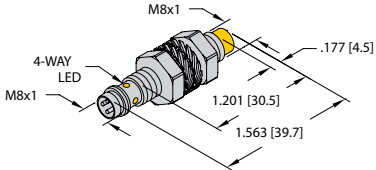
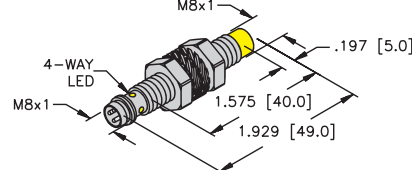
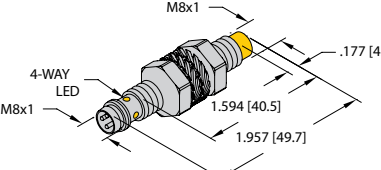
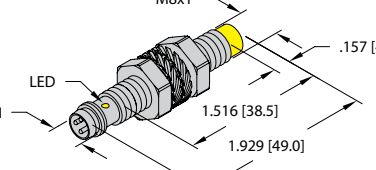
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi2U-EG08-AN6X-V1131 4602036	Uprox	2	3-wire DC NPN	10-30 VDC	1000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	1	A4
Bi2U-EG08-AP6X-V1131 4602033	Uprox	2	3-wire DC PNP	10-30 VDC	1000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	2	A4
Bi2-EG08-AN6X-V1131 4602150		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	1	A4
Bi2-EG08-AP6X-V1131 4602050		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	2	A4
Bi2-EG08-AP6X-V1131/S1589 46020501	Weldguard	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	D	2	A4
Bi2-EGT08-AP6X-V1131/S100 4602263	PTFE, High Temp. 100 °C	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	SS	TC	N/A	YE	A	2	A4
Bi2-EGT08-AP6X-V1131/S100/S1589 4602072	PTFE, High Temp. 100 °C, Weldguard	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	SS	WG	N/A	YE	A	2	A4
Bi2-G08-AP6X-V1131 4602002		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	2	A4
Bi2-M08E-AN6X-V1131 4602953		2	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	B	1	A4
Bi2-M08E-AP6X-V1131 4602956		2	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	B	2	A4
Bi1.5U-EG08-AN6X-V1131 4600530	Uprox	1.5	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	1	A4
Bi1.5U-EG08-AP6X-V1131 4600520	Uprox	1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	2	A4
Bi1.5-EG08-AN6X-V1131 4602350		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	1	A4
Bi1.5-EG08-AP6X-V1131 4602220		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	2	A4

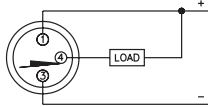
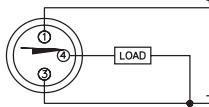
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>B</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>C</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>D</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>F</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>G</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


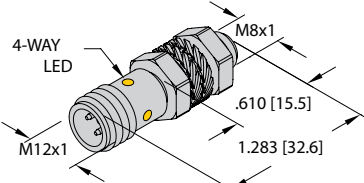
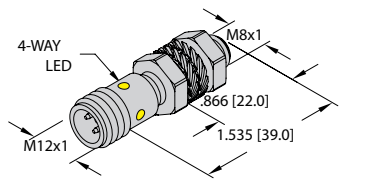
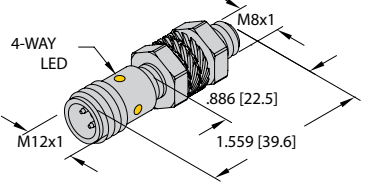
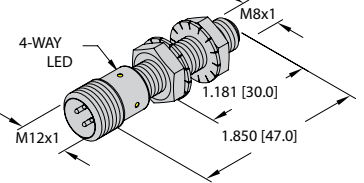
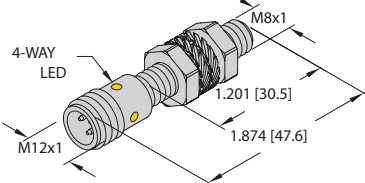
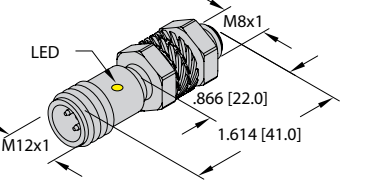
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni6U-EG08-AN6X-V1131 4635804	Uprox+	6	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +70	IP68	SS	LCP	N/A	YE	E	1	A4
Ni6U-EG08-AP6X-V1131 4635801	Uprox+	6	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +70	IP68	SS	LCP	N/A	YE	E	2	A4
Ni5-M08-AN6X-V1131 4602924		5	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	D	1	A4
Ni5-M08-AP6X-V1131 4602921		5	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	D	2	A4
Ni5-M08KK-AN6X-V1131 4602949	Short Barrel	5	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	A	1	A4
Ni5-M08KK-AP6X-V1131 4602946	Short Barrel	5	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	A	2	A4
Ni4U-EG08-AN6X-V1131 4600630	Uprox	4	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	E	1	A4
Ni4U-EG08-AP6X-V1131 4600620	Uprox	4	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	E	2	A4
Ni3-M08E-AN6X-V1131 4602833		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	F	1	A4
Ni3-M08E-AP6X-V1131 4602836		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	F	2	A4
Ni3-M08K-AN6X-V1131 4602849		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	C	1	A4
Ni3-M08K-AP6X-V1131 4602853		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	C	2	A4
Ni3-EG08-AN6X-V1131 4602850		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	E	1	A4
Ni3-EG08-AP6X-V1131 4602750		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	F	2	A4
Ni3-EG08K-AN6X-V1131 4669750		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	G	1	A4
Ni3-EG08K-AP6X-V1131 4669650		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	B	2	A4

We reserve the right to make technical alterations without prior notice.

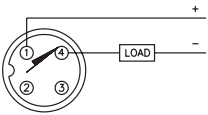
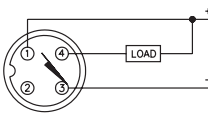
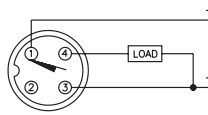
Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>D</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>E</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>
<p><b>F</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>		

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.23T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*, RK 4T-*/S1587</p>

A2 2-wire DC - (AD, RD, AG)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V</p> <p>Polarized (AG) ≤4.2 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current</p> <p>≥170 mA on 150 mA Load Current</p> <p>≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)</p> <p>≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi3U-EM08-AN6X-H1341 4602422	Uprox3	3	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +60	IP68	SS	PA 12	N/A	YE	D	2	A4
Bi3U-EMT08-AN6X-H1341 4602158	Uprox3, PTFE	3	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +60	IP68	SS	TC	N/A	YE	D	2	A4
Bi3U-EM08-AP6X-H1341 4602412	Uprox3	3	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +60	IP68	SS	PA 12	N/A	YE	D	3	A4
Bi3U-EMT08-AP6X-H1341 4602156	Uprox3, PTFE	3	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +60	IP68	SS	TC	N/A	YE	D	3	A4
Bi3-M08-AN6X-H1341 4602915		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	E	2	A4
Bi3-M08-AP6X-H1341 4602912		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	E	3	A4
Bi3-M08KK-AN6X-H1341 4602943	Short Barrel	3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	A	2	A4
Bi3-M08KK-AP6X-H1341 4602940	Short Barrel	3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	A	3	A4
Bi2-EG08K-AG41X-H1341 4562011		2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	B	1	A2
Bi2-EG08K-AG41X-H1341/S1589 4562090	Weldguard	2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	B	1	A2
Bi2-EGT08K-AG41X-H1341/S1589 4602599	PTFE, Short barrel, Weldguard	2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	B	1	A2
Bi2-EG08K-AN6X-H1341 4669560		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	F	2	A4
Bi2-EG08K-AP6X-H1341 4669460		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	F	3	A4
Bi2-EG08K-AP6X-H1341/S1589 4669486	Weldguard	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	F	3	A4
Bi2-M08K-AN6X-H1341 4602964		2	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	C	2	A4
Bi2-M08K-AP6X-H1341 4602967		2	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP- GF20	N/A	YE	C	3	A4
Bi1.5-EG08K-AN6X-H1341 4669150		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	F	2	A4
Bi1.5-EG08K-AP6X-H1341 4669050		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	F	3	A4


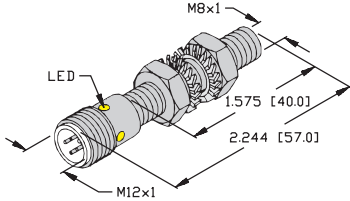
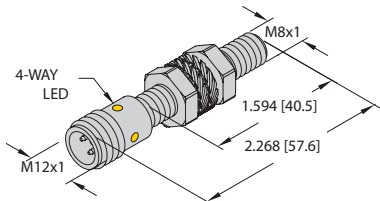
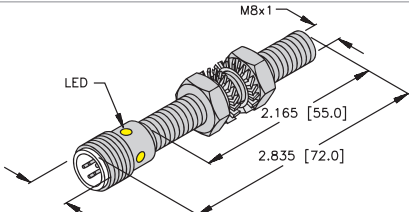
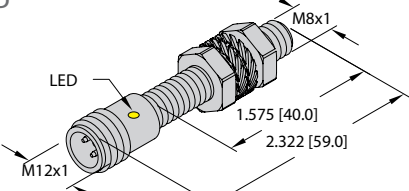
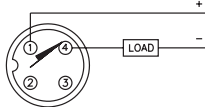
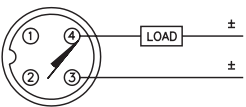
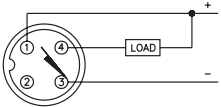
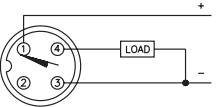
**Note:** Reference sensor data sheet for considerations if mounting a Bi3-M08 sensor flush in steel.

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>D</b></p>  <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.23T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.2T-*</p>	
<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*, RK 4T-*/S1587</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4T-*, RK 4T-*/S1587</p>	
A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs


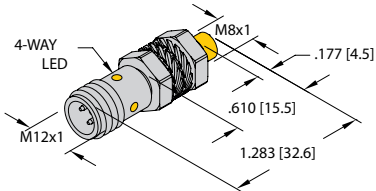
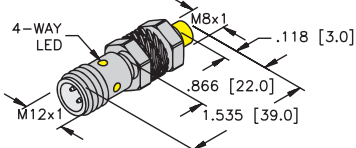
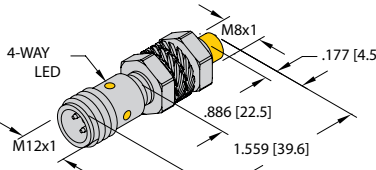
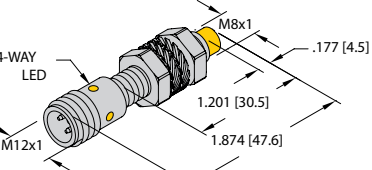
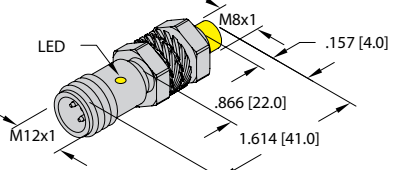
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi2U-EG08-AN6X-H1341 4602037	Uprox	2	3-wire DC NPN	10-30 VDC	1000	≤150	-35 to +85	IP68	SS	PA 12	N/A	YE	A	3	A4
Bi2U-EG08-AP6X-H1341 4602034	Uprox	2	3-wire DC PNP	10-30 VDC	1000	≤150	-35 to +85	IP68	SS	PA 12	N/A	YE	A	4	A4
Bi2-EG08-AG41X-H1341 4562001		2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	A	1	A2
Bi2-EG08-AG41X-H1341/S1589 4562095	Weldguard	2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	A	1	A2
Bi2-EG08-AN6X-H1341 4602160		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	3	A4
Bi2-EG08-AN6X-H1341/S1589 4602182	Weldguard	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	D	3	A4
Bi2-EG08-AP6X-H1341 4602060		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	4	A4
Bi2-EG08-AP6X-H1341/S1589 4602086	Weldguard	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	D	4	A4
Bi2-EGT08-AP6X-H1341/S100 4602257	PTFE, High Temp. 100 °C	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	TC	TC	N/A	YE	A	4	A4
Bi2-EG08-VN6X-H1341 4602521	Comp. Outputs	2	4-wire DC NPN	10-30 VDC	3000	≤200	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	5	A4
Bi2-EG08-VP6X-H1341 4602522	Comp. Outputs	2	4-wire DC PNP	10-30 VDC	3000	≤200	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	6	A4
Bi2-G08-AN6X-H1341 46026		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	3	A4
Bi2-G08-AP6X-H1341 46025		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	4	A4
Bi2-M08E-AN6X-H1341 4602952		2	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP- GF20	N/A	YE	B	3	A4
Bi2-M08E-AP6X-H1341 4602955		2	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP- GF20	N/A	YE	B	4	A4
Bi1.5U-EG08-AN6X-H1341 4600550	Uprox	1.5	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP67	SS	PA 12	N/A	YE	A	3	A4
Bi1.5U-EG08-AP6X-H1341 4600540	Uprox	1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	4	A4
Bi1.5U-EG08-AP6X-H1341/S1589 46005401	Uprox, Weldguard	1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP67	SS	WG	N/A	YE	A	4	A4
Bi1.5U-EGT08-AP6X-H1341 4600555	Uprox, PTFE	1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP67	TC	TC	N/A	YE	A	4	A4
Bi1.5-EG08-AD6X-H1341 4600203		1.5	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	A	2	A2
Bi1.5-EG08-AN6X-H1341 4602360		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	3	A4
Bi1.5-EG08-AP6X-H1341 4602260		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	D	4	A4
Bi1.5-G08-AN6X-H1341 4603700		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	3	A4
Bi1.5-G08-AN7X-H1341 4701126	TTL Compatible	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	3	A4
Bi1.5-G08-AP6X-H1341 4603600		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	4	A4

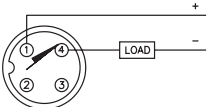
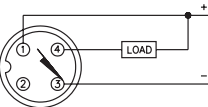
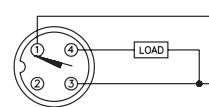
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>
<p><b>B</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>C</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>
<p><b>D</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>E</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.23T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0</math> V Polarized (AG) <math>\leq 4.2</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Off-State (Leakage) Current: <math>\leq 0.8</math> mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current <math>\geq 170</math> mA on 150 mA Load Current <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA (Ferrite, Uprox) <math>\leq 20</math> mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8</math> ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

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# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


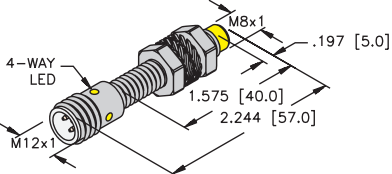
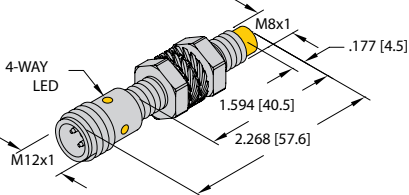
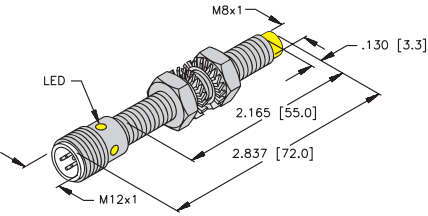
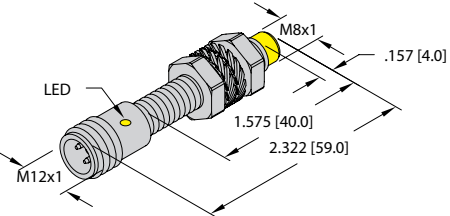
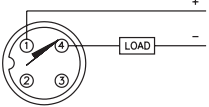
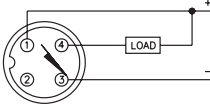
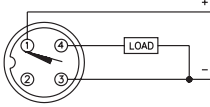
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni5-M08-AN6X-H1341 4602925		5	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	D	2	A4
Ni5-M08-AP6X-H1341 4602922		5	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	D	3	A4
Ni5-M08KK-AN6X-H1341 4602950	Short Barrel	5	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	A	2	A4
Ni5-M08KK-AP6X-H1341 4602947	Short Barrel	5	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	A	3	A4
Ni4-EG08K-AG41X-H1341 4561011		4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	B	1	A2
Ni4-EG08K-AG41X-H1341/S1589 4561090	Weldguard	4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	B	1	A2
Ni3-EG08K-AN6X-H1341 4669760		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	E	2	A4
Ni3-EG08K-AP6X-H1341 4669660		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	E	3	A4
Ni3-M08K-AN6X-H1341 4602848		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	C	2	A4
Ni3-M08K-AP6X-H1341 4602852		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	C	3	A4

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Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	
<p><b>B</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>C</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	
<p><b>D</b></p>  <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>		
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.23T-*, RK 4.23T-*/S1587</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*;</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*; RK 4T-*/S1587</p>
A2 2-wire DC - (AD, RD, AG)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0</math> V Polarized (AG) <math>\leq 4.2</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Off-State (Leakage) Current: <math>\leq 0.8</math> mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current <math>\geq 170</math> mA on 150 mA Load Current <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA (Ferrite, Uprox) <math>\leq 20</math> mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8</math> ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

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## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


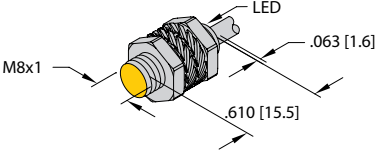
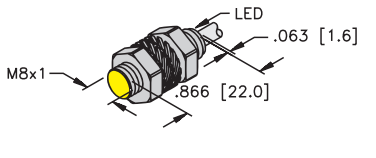
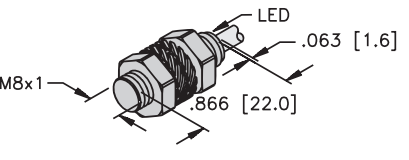
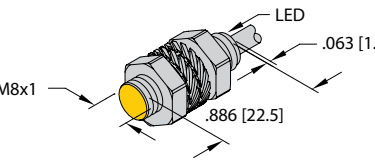
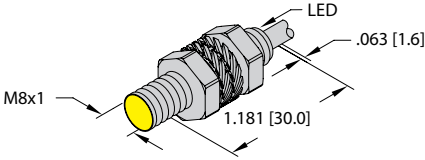
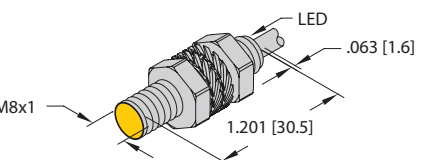
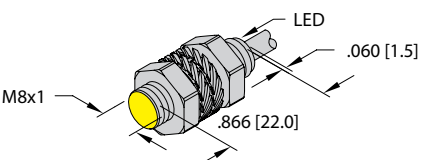
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni6U-EG08-AN6X-H1341 4635805	Uprox+	6	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +70	IP68	SS	LCP	N/A	YE	A	2	A4
Ni6U-EG08-AP6X-H1341 4635802	Uprox+	6	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +70	IP68	SS	LCP	N/A	YE	A	3	A4
Ni4U-EG08-AN6X-H1341 4600650	Uprox	4	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	2	A4
Ni4U-EG08-AP6X-H1341 4600640	Uprox	4	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	A	3	A4
Ni4U-EG08-AP6X-H1341/S1589 46006401	Uprox, Weldguard	4	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP67	SS	WG	N/A	YE	A	3	A4
Ni4-EG08-AG41X-H1341 4561001		4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	A	1	A2
Ni4-EG08-AG41X-H1341/S1589 4561091	Weldguard	4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	A	1	A2
Ni3-EG08-AN6X-H1341 4602860		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	A	2	A4
Ni3-EG08-AN7X-H1341 4669761	TTL Compatible	3	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	A	2	A4
Ni3-EG08-AP6X-H1341 4602760		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	D	3	A4
Ni3-EG08-AP6X-H1341/S1589 4602799	Weldguard	3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	D	3	A4
Ni3-M08E-AN6X-H1341 4602832		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	B	2	A4
Ni3-M08E-AP6X-H1341 4602835		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	B	3	A4
Ni3-G08-AN6X-H1341 4602704		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	2	A4
Ni3-G08-AP6X-H1341 4602705		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	3	A4
Ni2-G08-AN6X-H1341 46033		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	2	A4
Ni2-G08-AP6X-H1341 46032		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	C	3	A4

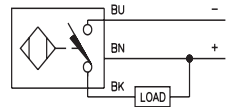
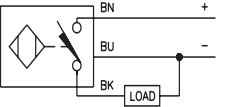
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>G</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable, PTFE Coated</p>	<p><b>D</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>E</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>F</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>G</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: No-Load Current: ≤0.1 mA ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

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## Inductive Barrel Sensors | 8 mm

### Embeddable Threaded Metal Barrels with Cable and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi3U-EM08-AN6X 4602421	Uprox3	3	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +60	IP68	SS	PA 12	N/A	YE	2M/TPU	E	1	A4
Bi3U-EM08-AP6X 4602411	Uprox3	3	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +60	IP68	SS	PA 12	N/A	YE	2M/TPU	E	2	A4
Bi3-M08-AN6X 4602913		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	F	1	A4
Bi3-M08-AP6X 4602910		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	F	2	A4
Bi3-M08KK-AN6X 4602941	Short Barrel	3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	A	1	A4
Bi3-M08KK-AP6X 4602938	Short Barrel	3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	A	2	A4
Bi2-EG08K-AN6X 4669500		2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	G	1	A4
Bi2-EG08K-AN6X/S1589 4669587	Weldguard	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	2M/TPU	G	1	A4
Bi2-EG08K-AP6X 4669400		2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	G	2	A4
Bi2-EG08K-AP6X/S97 4669413	Low Temp. -40 °C	2	3-wire DC PNP	10-30 VDC	3000	≤150	-40 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	G	2	A4
Bi2-EGT08K-AP6X 4602541	PTFE	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	TC	TC	N/A	YE	2M/TPU	C	2	A4
Bi2-EGT08K-AP6X/S100 4602544	PTFE, High Temp. 100 °C	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	TC	TC	N/A	YE	2M/TPU	C	2	A4
Bi2-EGT08K-AP6X/S1589 46025413	PTFE, Weldguard	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	TC	WG	N/A	YE	2M/TPU	C	2	A4
Bi2-M08K-AN6X 4602963		2	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	D	1	A4
Bi2-M08K-AP6X 4602966		2	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	D	2	A4
Bi1.5-EG08K-AN6X 4669140		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	G	1	A4
Bi1.5-EG08K-AP6X 4669040		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	G	2	A4
Bi1.5-EG08K-AP6/S100 4669016	High Temp. 100 °C	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	SS	PA 12	N/A	N/A	2M/TPU	B	2	A4


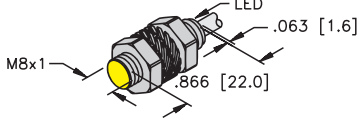
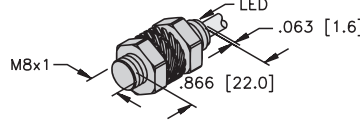
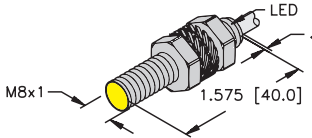
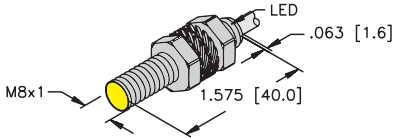
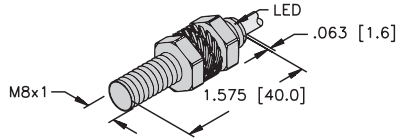
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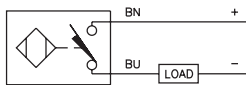
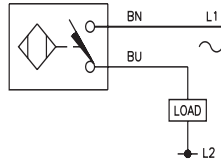
Inductive Barrel Sensors

**Note:** Reference sensor data sheet for considerations if mounting a Bi3-M08 sensor flush in steel.

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Cable and 2-Wire Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable, PTFE Coated</p>
	<p><b>C</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>D</b></p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable, PTFE Coated</p>

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 

A2 2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50\text{ Hz}</math> <math>\leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math> AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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## Embeddable Threaded Metal Barrels with Cable and 2-Wire Outputs


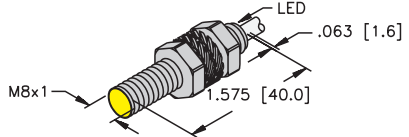
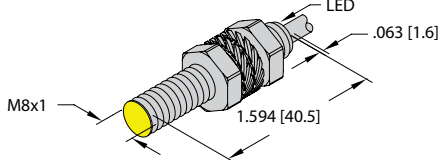
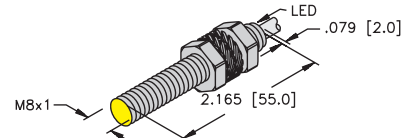
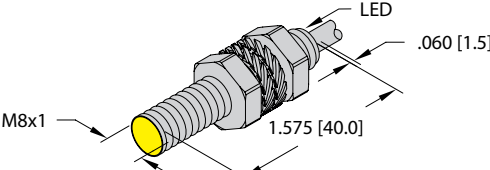
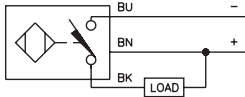
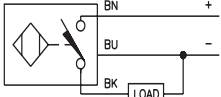
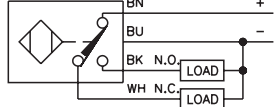
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi2-EG08-AG41X</b> 4562000		2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A2
<b>Bi2-EG08-AG41X/S1589</b> 4562088	Weldguard	2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	2M/TPU	C	1	A2
<b>Bi2-EG08-AZ14X</b> 4100001		2	2-wire AC/DC	20-132 VAC/10-140 VDC	20	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A6
<b>Bi2-EGT08-AG41X</b> 4602540	PTFE	2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	TC	PA 12	N/A	YE	2M/TPU	D	1	A2
<b>Bi2-EGT08-AG41X/S1589</b> 4602003	PTFE, Weld-guard	2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	2M/TPU	D	1	A2
<b>Bi2-EG08K-AG41X</b> 4562010		2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	1	A2
<b>Bi2-EG08K-AG41X/S1589</b> 4562091	Weldguard	2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	SS	WG	N/A	YE	2M/TPU	A	1	A2
<b>Bi2-EGT08K-AG41X</b> 4602545	PTFE	2	2-wire DC	10-55 VDC	1000	≤100	-25 to +70	IP67	TC	PA 12	N/A	YE	2M/TPU	B	1	A2

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p>B</p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p>C</p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p>D</p>  <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	
Wiring Diagrams/Mating Cordsets	
<p>1</p> 	<p>2</p> 
<p>3</p> 	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection:              ≥220 mA on 200 mA Load Current              ≥170 mA on 150 mA Load Current              ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current:              No-Load Current: ≤0.1 mA              ≤15 mA (Ferrite, Uprox)              ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 8 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs


Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2U-EG08-AN6X 4602035	Uprox	2	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi2U-EG08-AP6X 4602032	Uprox	2	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	A	2	A4
Bi2-EG08-AN6X 4602140	Extended Range	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	D	1	A4
Bi2-EG08-AP6X 4602040	Extended Range	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	D	2	A4
Bi2-EG08-AP6X/S100 4602047	High Temp. 100 °C	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +100	IP67	SS	PA6.6	N/A	YE	2M/TPU	D	2	A4
Bi2-EG08-AP6X/S1589 4602185	Weldguard	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	2M/TPU	D	2	A4
Bi2-EG08-VP6X 1604610	Comp. Outputs	2	4-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	D	3	A4
Bi2-G08-AN6X 46021	Extended Range	2	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi2-G08-AP6X 46020	Extended Range	2	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4
Bi2-M08E-AN6X 4602951		2	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	B	1	A4
Bi2-M08E-AP6X 4602954		2	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CBP	PP-GF20	N/A	YE	2M/TPU	B	2	A4
Bi1.5U-EG08-AN6X 4600510	Uprox	1.5	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi1.5U-EG08-AP6X 4600500	Uprox	1.5	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	A	2	A4
Bi1.5-EG08-AN6X 4602340		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	D	1	A4
Bi1.5-EG08-AN7X 1766110	TTL Compatible	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	A	1	A4
Bi1.5-EG08-AP6X 4602240		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA6.6	N/A	YE	2M/TPU	D	2	A4
Bi1.5-G08-AN6X 46023		1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	1	A4
Bi1.5-G08-AP6X 46022		1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	2	A4

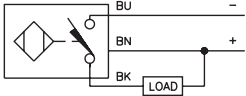
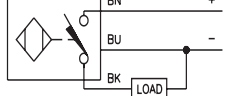
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>B</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>C</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>D</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>E</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>F</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>G</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>H</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 8 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs


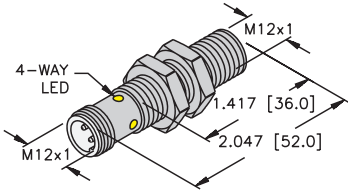
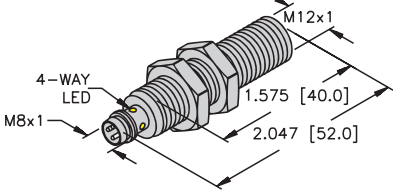
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni6U-EG08-AN6X 4635803	Uprox+	6	3-wire DC NPN	10-30 VDC	1000	≤150	0 to +70	IP68	SS	LCP	N/A	YE	2M/TPU	E	1	A4
Ni6U-EG08-AP6X 4635800	Uprox+	6	3-wire DC PNP	10-30 VDC	1000	≤150	0 to +70	IP68	SS	LCP	N/A	YE	2M/TPU	E	2	A4
Ni5-M08-AN6X 4602923		5	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	D	1	A4
Ni5-M08-AP6X 4602920		5	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	D	2	A4
Ni5-M08KK-AN6X 4602948	Short Barrel	5	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	A	1	A4
Ni5-M08KK-AP6X 4602944	Short Barrel	5	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	A	2	A4
Ni4U-EG08-AN6X 4600610	Uprox	4	3-wire DC NPN	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	E	1	A4
Ni4U-EG08-AP6X 4600600	Uprox	4	3-wire DC PNP	10-30 VDC	2000	≤150	-30 to +85	IP68	SS	PA 12	N/A	YE	2M/TPU	E	2	A4
Ni3-EG08-AN6X 4602840		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	E	1	A4
Ni3-EG08-AN6X/S1589 4602888	Weldguard	3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	2M/TPU	E	1	A4
Ni3-EG08-AN7X 4669759	TTL Compatible	3	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	E	1	A4
Ni3-EG08-AP6X 4602740		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	H	2	A4
Ni3-EG08-AP6X/S1589 4602789	Weldguard	3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	WG	N/A	YE	2M/TPU	H	2	A4
Ni3-EG08K-AN6X 4669700		3	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	B	1	A4
Ni3-EG08K-AP6X 4669600		3	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +70	IP67	SS	PBT	N/A	YE	2M/TPU	B	2	A4
Ni3-G08-AN6X 46028		3	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	G	1	A4
Ni3-G08-AP6X 46027		3	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	G	2	A4
Ni3-M08E-AN6X 4602831		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	F	1	A4
Ni3-M08E-AP6X 4602834		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	F	2	A4
Ni3-M08K-AN6X 4602847		3	3-wire DC NPN	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	C	1	A4
Ni3-M08K-AP6X 4602851		3	3-wire DC PNP	10-30 VDC	2800	≤150	-25 to +70	IP67	CPB	PP-GF20	N/A	YE	2M/TPU	C	2	A4
Ni2-G08-AN6X 4601300		2	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	G	1	A4
Ni2-G08-AP6X 46012		2	3-wire DC PNP	10-30 VDC	2000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	G	2	A4

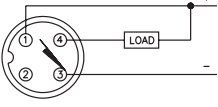
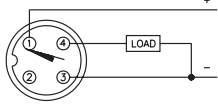
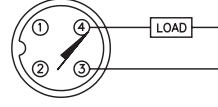
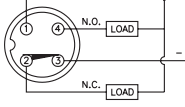
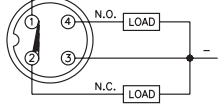
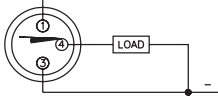
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>B</b></p>  <p>12 mm - Embeddable, M8 Picofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.2T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>5</b></p>  <p>Mating Cordset: RK 4.4T-*; RKV 4.4T-*</p>	<p><b>6</b></p>  <p>Mating Cordset: PKG 3M-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi6U-M12-AN6X-H1141 1644808	Uprox3	6	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	1	A4
Bi6U-M12-AP6X-H1141 1644810	Uprox3	6	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	2	A4
Bi6U-M12-VP6X-H1141 1644805	Uprox3, Comp. Outputs	6	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	5	A4
Bi4U-EM12-AN6X-H1141 1634827	Uprox+	4	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	1	A4
Bi4U-M12-AN6X-H1141 1634824	Uprox+	4	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	1	A4
Bi4U-EM12-AP6X-H1141 1634807	Uprox+	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	2	A4
Bi4U-M12-AP6X-H1141 1634804	Uprox+	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	2	A4
Bi4U-M12-AP6X-V1131 1634780	Uprox+	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	B	6	A4
Bi4-M12-AN6X-H1141 46071	Extended Range	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi4-M12-AP6X-H1141 46070	Extended Range	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi4-M12-VN6X-H1141 1643200	Ext. Range, Comp. Outputs	4	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi4-M12-VP6X-H1141 1633200	Ext. Range, Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi4-EM12-VP6X-H1141 1633201	Ext. Range, Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	5	A4
Bi3U-EM12-AN6X-H1141 1634350	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PA 12	N/A	YE	A	1	A4
Bi3U-M12-AN6X-H1141 1634150	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi3U-EM12-AP6X-H1141 1634340	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PA 12	N/A	YE	A	2	A4
Bi3U-M12-AP6X-H1141 1634140	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi3-M12-AD4X-H1141 4405041		3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A2
Bi2-M12-AD4X-H1141 44065		2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A2
Bi2-EM12-AN6X-H1141 4606601		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	1	A4
Bi2-M12-AN6X-H1141 46066		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi2-EM12-AP6X-H1141 4606501		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	2	A4
Bi2-M12-AP6X-H1141 46065		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi2-M12-VN6X-H1141 16430	Comp. Outputs	2	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi2-M12-VP6X-H1141 16330	Comp. Outputs	2	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4

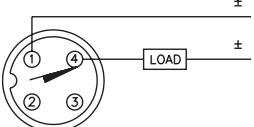
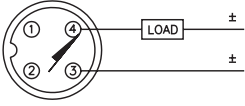
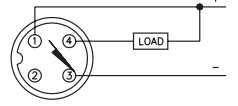
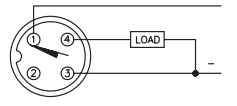
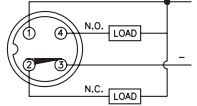
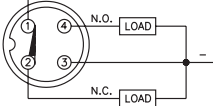
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="873 546 1429 567">12 mm - Embeddable, M12 Eurofast Connection, Extended Barrel Length</p>

Wiring Diagrams/Mating Cordsets	
<p data-bbox="105 640 121 661">1</p>  <p data-bbox="341 777 560 798">Mating Cordset: RK 4.23T-*</p>	<p data-bbox="808 640 824 661">2</p>  <p data-bbox="1047 777 1250 798">Mating Cordset: RK 4.2T-*</p>
<p data-bbox="105 823 121 844">3</p>  <p data-bbox="292 955 609 976">Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p data-bbox="808 823 824 844">4</p>  <p data-bbox="998 955 1307 976">Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>
<p data-bbox="105 1005 121 1026">5</p>  <p data-bbox="349 1138 552 1159">Mating Cordset: RK 4.4T-*</p>	<p data-bbox="808 1005 824 1026">6</p>  <p data-bbox="1047 1138 1250 1159">Mating Cordset: RK 4.4T-*</p>

A2 2-wire DC - (AD, RD, AG)	
<p data-bbox="397 1234 544 1255">Ripple: <math>\leq 10\%</math></p> <p data-bbox="219 1260 641 1281">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1285 706 1306">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p data-bbox="267 1310 657 1331">Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="113 1344 568 1365">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="267 1369 560 1390">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="909 1234 1234 1255">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="998 1260 1291 1281">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1285 1307 1306">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1310 1258 1331">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1344 1469 1365">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1369 1437 1390">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="397 1455 544 1476">Ripple: <math>\leq 10\%</math></p> <p data-bbox="219 1480 641 1501">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1505 544 1526">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="113 1539 771 1560">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p data-bbox="186 1564 771 1585"><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p data-bbox="186 1589 771 1610"><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="235 1623 560 1644">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="316 1648 682 1669">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p data-bbox="324 1673 698 1694"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="893 1455 1218 1476">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="998 1480 1291 1501">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="917 1505 1274 1526">Reverse Polarity Protection: Incorporated</p> <p data-bbox="958 1539 1274 1560">Wire-Break Protection: Incorporated</p> <p data-bbox="966 1564 1307 1585">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="982 1589 1226 1610">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1079 1623 1258 1644">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1648 1461 1669">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1673 1429 1694">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi4-M12E-AN6X-H1141 4607193	Extended Range	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi4-EM12E-AN6X-H1141/S1589 4607185	Ext. Range, Weldguard	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	3	A4
Bi4-M12E-AP6X-H1141 4608030	Extended Range	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi4-EM12E-AP6X-H1141/S1589 4607184	Ext. Range, Weldguard	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	4	A4
Bi4-M12E-VN6X-H1141 1643201	Extended Range	4	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi4-M12E-VP6X-H1141 4608031	Extended Range	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Bi3U-EM12E-AN6X-H1141 1634351	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PA 12	N/A	YE	A	3	A4
Bi3U-EM12HE-AN6X2-H1141 1634311	Uprox, Stoneface	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PA 12	GN	YE	A	3	A4
Bi3U-EM12E-AN6X2-H1141/S1589 1634397	Uprox, Weldguard	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	3	A4
Bi3U-M12E-AP6X-H1141 1634148	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi3U-EM12HE-AP6X2-H1141 1634310	Uprox, Stoneface	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	SF	GN	YE	A	4	A4
Bi3U-EM12E-AP6X2-H1141/S1589 1634398	Uprox, Weldguard	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	4	A4
Bi3U-M12E-AN6X-H1141 1634151	Uprox	3	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi3U-EM12E-AP6X-H1141 1634343	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PA 12	N/A	YE	A	4	A4
Bi3U-M12E-VN4X-H1141 1580354	Uprox	3	4-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi3U-M12E-VP4X-H1141 1580252	Uprox	3	4-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	6	A4
Bi3-M12E-AD4X-H1141 4405080		3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A2
Bi2U-M12E-AD4X-H1144 4405060	Uprox	2	2-wire DC	10-65 VDC	1000	≤100	-30 to +85	IP68	CPB	LCP	N/A	YE	A	1	A2
Bi2-M12E-AN6X-H1141 4606602		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4

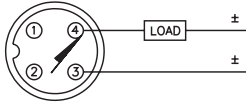
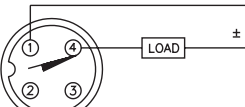
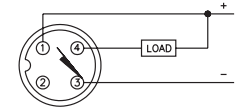
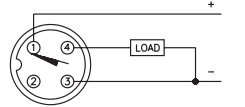
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="881 548 1419 569">12 mm - Embeddable, M12 Eurofast Connection, PTFE Coated Sensors</p>

Wiring Diagrams s/Mating Cordset	
<p data-bbox="105 642 121 663">1</p>  <p data-bbox="337 785 555 806">Mating Cordset: RKRK 4.2T-*</p>	<p data-bbox="808 642 824 663">2</p>  <p data-bbox="1045 785 1243 806">Mating Cordset: RK 4.23T-*</p>
<p data-bbox="105 825 121 846">3</p>  <p data-bbox="290 963 602 984">Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p data-bbox="808 825 824 846">4</p>  <p data-bbox="995 963 1307 984">Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 1062 539 1083">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1092 643 1113">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="134 1121 701 1171">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="112 1180 565 1201">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="269 1209 558 1230">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="911 1062 1235 1083">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1000 1092 1289 1113">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="967 1121 1305 1142">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1081 1150 1256 1171">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1180 1471 1201">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1209 1438 1230">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1283 539 1304">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1312 643 1333">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="134 1341 542 1362">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="112 1371 766 1451">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="237 1459 558 1480">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="321 1488 701 1539">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="891 1283 1218 1304">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1000 1312 1289 1333">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="915 1341 1273 1362">Reverse Polarity Protection: Incorporated</p> <p data-bbox="954 1371 1273 1392">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1400 1305 1421">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="984 1430 1224 1451">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1459 1256 1480">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1488 1471 1509">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1518 1438 1539">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


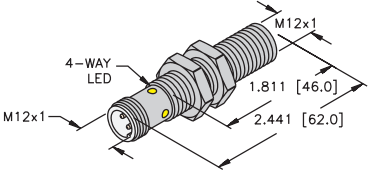
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi6U-MT12-AN6X-H1141 1644822	Uprox3, PTFE	6	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP68	TC	TC	N/A	YE	A	3	A4
Bi6U-MT12-AP6X-H1141 1644811	Uprox3, PTFE	6	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP68	TC	TC	N/A	YE	A	4	A4
Bi6U-MT12-AP6X2-H1141 1644904	Uprox3, PTFE	6	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP68	TC	TC	GN	YE	A	4	A4
Bi4U-MT12-AN6X-H1141 1634829	Uprox+, PTFE	4	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	3	A4
Bi4U-MT12-AN6X-H1141/S1589 16348290	Uprox+, PTFE, Weld- guard	4	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	TC	WG	N/A	YE	A	3	A4
Bi4U-MT12-AP6X-H1141 1634809	Uprox+, PTFE	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	4	A4
Bi4-MT12H-AN6X-H1141 4607194	Ext. Range, PTFE, Stoneface	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	SF	N/A	YE	A	3	A4
Bi4-MT12-AN6X-H1141/S1589 4607188	Ext. Range, PTFE, Weldguard	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	WG	N/A	YE	A	3	A4
Bi4-MT12H-AP6X-H1141 4607093	Ext. Range, PTFE, Stoneface	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	SF	N/A	YE	A	4	A4
Bi4-MT12-AP6X-H1141/S1589 4607099	Ext. Range, PTFE, Weldguard	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	WG	N/A	YE	A	4	A4
Bi3U-MT12-AN6X-H1141 1634250	Uprox, PTFE	3	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	3	A4
Bi3U-MT12-AP6X-H1141 1634240	Uprox, PTFE	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	4	A4
Bi3U-MT12-AP6X2-H1141 1634245	Uprox, PTFE	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	4	A4
Bi3U-MT12H-AP6X-H1141 1634212	Uprox, PTFE, Stoneface	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	4	A4
Bi3U-MT12-AP6X2-H1141/S1589 1634293	Uprox, PTFE, Weld- guard	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	4	A4
Bi3-MT12-AD4X-H1141/S1589 4405082	PTFE, Weldguard	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	A	1	A2
Bi3-MT12-AD4X-H1144/S1589 4405084	PTFE, Weldguard	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	A	2	A2

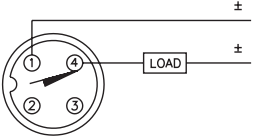
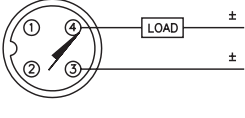
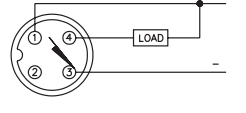
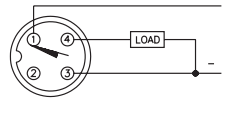
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="820 525 1485 567">12 mm - Embeddable, M12 Eurofast Connection, Extended Barrel Length, PTFE Coated Sensors</p>

Wiring Diagrams/Mating Cordset	
<p data-bbox="105 640 121 661">1</p>  <p data-bbox="341 787 560 808">Mating Cordset: RK 4.23T-*</p>	<p data-bbox="808 640 824 661">2</p>  <p data-bbox="1047 787 1258 808">Mating Cordset: RK 4.2T-*</p>
<p data-bbox="105 823 121 844">3</p>  <p data-bbox="292 961 609 982">Mating Cordset: RK 4T-*/RKC 4T-*/S1587</p>	<p data-bbox="808 823 824 844">4</p>  <p data-bbox="998 961 1307 982">Mating Cordset: RK 4T-*/RKC 4T-*/S1587</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="397 1054 535 1075">Ripple: <math>\leq 10\%</math></p> <p data-bbox="211 1081 641 1102">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1108 698 1134">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p data-bbox="487 1138 657 1159">Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="105 1165 560 1186">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="259 1192 560 1213">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="909 1054 1234 1075">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="998 1081 1291 1102">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1108 1307 1129">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1138 1258 1159">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1165 1469 1186">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1192 1437 1213">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="397 1276 535 1297">Ripple: <math>\leq 10\%</math></p> <p data-bbox="211 1304 641 1325">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1331 544 1352">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="105 1358 763 1379">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p data-bbox="186 1386 763 1407"><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p data-bbox="186 1413 763 1434"><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="235 1440 560 1461">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="316 1470 673 1491">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p data-bbox="479 1497 698 1518"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="893 1276 1218 1297">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="998 1304 1291 1325">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="917 1331 1274 1352">Reverse Polarity Protection: Incorporated</p> <p data-bbox="950 1358 1274 1379">Wire-Break Protection: Incorporated</p> <p data-bbox="966 1386 1307 1407">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="982 1413 1226 1434">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1079 1440 1258 1461">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1470 1461 1491">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1497 1429 1518">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


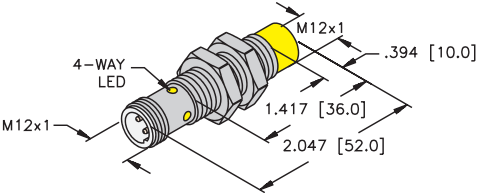
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi4U-MT12E-AP6X2-H1141 1644742	Uprox+	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	TC	TC	GN	YE	A	4	A4
Bi4U-MT12E-AP6X2-H1141/S1589 1644797	Uprox+, PTFE, Weld- guard	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	TC	WG	N/A	YE	A	4	A4
Bi4-MT12E-AP6X-H1141 46080932	Ext. Range, PTFE	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	TC	N/A	YE	A	4	A4
Bi4-MT12HE-AN6X-H1141 4607197	Ext. Range, PTFE	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	TC	N/A	YE	A	3	A4
Bi4-MT12HE-AP6X-H1141 4608093	Ext. Range, Stoneface	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	TC	N/A	YE	A	4	A4
Bi4-MT12E-AN6X-H1141/S1589 4607187	Ext. Range, Weldguard	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	WG	N/A	YE	A	3	A4
Bi4-MT12E-AP6X-H1141/S1589 4608094	Ext. Range, Weldguard	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	TC	WG	N/A	YE	A	4	A4
Bi3U-MT12HE-AN6X2-H1141 1634230	Uprox, PTFE, Stoneface	3	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	3	A4
Bi3U-MT12E-AN6X2-H1141/S1589 1634290	Uprox, Weldguard	3	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	3	A4
Bi3U-MT12HE-AP6X2-H1141 1634220	Uprox, PTFE, Stoneface	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	4	A4
Bi3U-MT12E-AP6X2-H1141/S1589 1634291	Uprox, Weldguard	3	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	4	A4
Bi3-MT12E-AD4X-H1141 44050882	PTFE	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	TC	N/A	YE	A	2	A2
Bi3-MT12HE-AD4X-H1141 4405088	Stoneface	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	TC	N/A	YE	A	2	A2
Bi3-MT12E-AD4X-H1141/S1589 4405086	PTFE, Weldguard	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	A	2	A2
Bi3-MT12E-AD4X-H1144/S1589 4405087	PTFE, Weldguard	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	A	2	A2
Bi2U-MT12E-AD4X-H1144 4405061	Uprox+, PTFE	2	2-wire DC	10-65 VDC	1000	≤100	-30 to +85	IP68	TC	TC	N/A	YE	A	1	A2

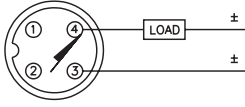
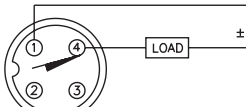
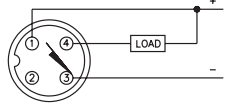
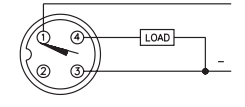
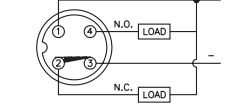
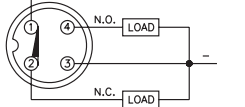
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="950 548 1356 569">12 mm - Nonembeddable, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 640 121 661">1</p>  <p data-bbox="227 787 422 808">Mating Cordset: RK 4.2T-*</p>	<p data-bbox="571 640 587 661">2</p>  <p data-bbox="698 787 893 808">Mating Cordset: RK 4.23T-*</p>	<p data-bbox="1042 640 1058 661">3</p>  <p data-bbox="1136 787 1380 808">Mating Cordset: RK 4T-*, RKV 4T-*</p>
<p data-bbox="105 827 121 848">4</p>  <p data-bbox="194 974 454 995">Mating Cordset: RK 4T-*, RKV 4T-*</p>	<p data-bbox="571 827 587 848">5</p>  <p data-bbox="698 974 893 995">Mating Cordset: RK 4.4T-*</p>	<p data-bbox="1042 827 1058 848">6</p>  <p data-bbox="1128 974 1404 995">Mating Cordset: RK 4.4T-*, RKV 4.4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="397 1060 544 1081">Ripple: ≤10%</p> <p data-bbox="219 1092 641 1113">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1123 706 1165">Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p data-bbox="113 1176 568 1197">Trigger Current for Short Circuit Protection: ≥120 mA</p> <p data-bbox="267 1207 560 1228">Minimum Load Current: ≥3.0 mA</p>		<p data-bbox="917 1060 1242 1081">Off-State (Leakage) Current: ≤0.8 mA</p> <p data-bbox="998 1092 1291 1113">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1123 1307 1144">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1155 1258 1176">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1186 1469 1207">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1218 1437 1239">Repeatability: ≤2% of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="397 1281 544 1302">Ripple: ≤10%</p> <p data-bbox="219 1312 641 1333">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1344 544 1365">Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p data-bbox="113 1375 771 1449">Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p data-bbox="235 1459 560 1480">Off-State (Leakage) Current: ≤0.1 mA</p> <p data-bbox="316 1491 682 1512">No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>		<p data-bbox="893 1281 1218 1302">Time Delay Before Availability: ≤8 ms</p> <p data-bbox="998 1312 1291 1333">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="917 1344 1274 1365">Reverse Polarity Protection: Incorporated</p> <p data-bbox="958 1375 1274 1396">Wire-Break Protection: Incorporated</p> <p data-bbox="966 1407 1307 1428">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="982 1438 1226 1459">Temperature Drift: ≤±10%</p> <p data-bbox="1079 1470 1258 1491">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1501 1469 1522">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1533 1437 1554">Repeatability: ≤2% of Rated Operating Distance</p>

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# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


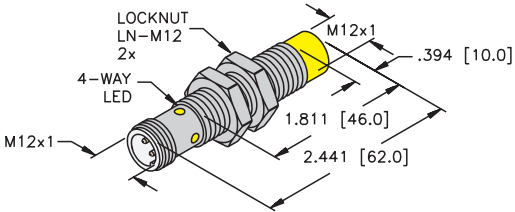
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni10U-M12-AN6X-H1141 1634826	Uprox+	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	3	A4
Ni10U-M12-AP6X-H1141 1634806	Uprox+	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	4	A4
Ni10U-EM12-AN6X-H1141 1634828	Uprox+	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	3	A4
Ni10U-EM12-AP6X-H1141 1634808	Uprox+	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	4	A4
Ni8U-M12-AN6X-H1141 1644150	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	A	3	A4
Ni8U-M12-AN6X2-H1141 1644155	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	GN	YE	A	3	A4
Ni8U-M12-AP6X-H1141 1644140	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	A	4	A4
Ni8U-M12-AP6X2-H1141 1644145	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	GN	YE	A	4	A4
Ni8U-EM12-AN6X-H1141 1644350	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	3	A4
Ni8U-EM12-AP6X-H1141 1644340	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	4	A4
Ni8-M12-AD4X-H1141 4411241	Extended Range	8	2-wire DC	10-65 VDC	2000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni8-M12-AD4X-H1144 4411236	Extended Range	8	2-wire DC	10-65 VDC	2000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A2
Ni8-M12-AN6X-H1141 4611315	Extended Range	8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni8-M12-AP6X-H1141 4611310	Extended Range	8	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni8-M12-VN6X-H1141 4611323	Ext. Range, Comp. Outputs	8	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni8-M12-VP6X-H1141 4611324	Ext. Range, Comp. Outputs	8	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Ni5-M12-AN6X-H1141 4671390		5	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni5-M12-AP6X-H1141 4653400		5	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni4-M12-AD4X-H1141 44067		4	2-wire DC	10-65 VDC	2000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni4-M12-AN6X-H1141 46068		4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni4-M12-AP6X-H1141 46067		4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni4-M12-VN6X-H1141 16431	Comp. Outputs	4	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni4-M12-VP6X-H1141 16331	Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Ni4-EM12-VP6X-H1141 1633101	Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	6	A4

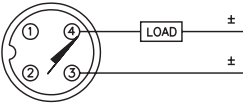
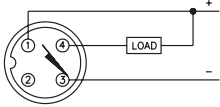
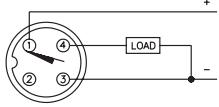
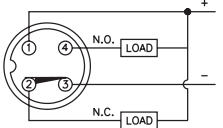
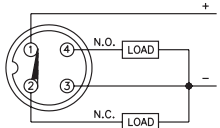
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>12 mm - Nonembeddable, Extended Barrel Length, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>
<p>4</p>  <p>Mating Cordset: RK 4.4T-*</p>	<p>5</p>  <p>Mating Cordset: RK 4.4T-*, RKV 4.4T-*</p>	

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p><math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

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# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


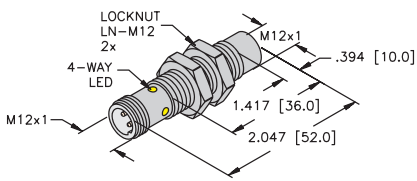
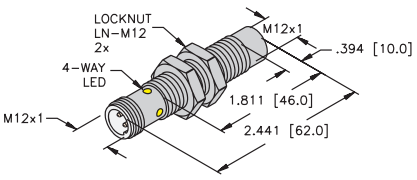
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni8U-M12E-AN6X-H1141 1644151	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	2	A4
Ni8U-EM12E-AN6X2-H1141 1644315	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PA 12	GN	YE	A	2	A4
Ni8U-EM12E-AN6X2-H1141/S1589 1644391	Uprox, Weld-guard	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	WG	WG	GN	YE	A	2	A4
Ni8U-M12E-AP6X-H1141 1644144	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni8U-EM12E-AP6X-H1141 1644342	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	3	A4
Ni8U-EM12E-AP6X2-H1141 1644314	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	GN	YE	A	3	A4
Ni8U-EM12E-AP6X2-H1141/S1589 1644392	Uprox, Weld-guard	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	WG	WG	GN	YE	A	3	A4
Ni8U-M12E-VN4X-H1141 1580552	Uprox, Comp. Outputs	8	4-wire DC NPN	10-65 VDC	2000	≤200	-30 to +85	IP67	SS	PA 12	N/A	YE	A	4	A4
Ni8U-M12E-VP4X-H1141 1580454	Uprox	8	4-wire DC PNP	10-65 VDC	2000	≤200	-30 to +85	IP67	SS	PA 12	N/A	YE	A	5	A4
Ni8U-EM12E-VP4X-H1141 1580463	Uprox	8	4-wire DC PNP	10-65 VDC	2000	≤200	-30 to +85	IP67	SS	PA 12	N/A	YE	A	5	A4
Ni8-M12E-AN6X-H1141 4611325	Extended Range	8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Ni8-EM12E-AN6X-H1141/S1589 4611395	Ext. Range, Weldguard	8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	WG	WG	N/A	YE	A	2	A4
Ni8-M12E-AP6X-H1141 46113981	Extended Range	8	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni8-EM12E-AP6X-H1141/S1589 4611396	Weldguard	8	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	WG	WG	N/A	YE	A	3	A4
Ni8-M12E-VP6X-H1141 4611389	Ext. Range, Comp. Outputs	8	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni4-M12E-AD4X-H1144 4406792		4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni4-EM12E-VP6X-H1141 1633191	Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	5	A4

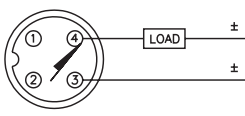
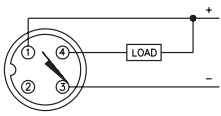
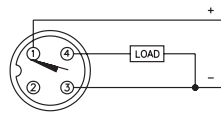
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Nonembeddable, M12 Eurofast Connection, PTFE Coated</p>	<p><b>B</b></p>  <p>12 mm - Nonembeddable, Extended Barrel Length, M12 Eurofast Connection, PTFE Coated</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RKC 4.2T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni10U-MT12-AN6X-H1141 1634830	Uprox+, PTFE	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	LCP	N/A	YE	A	2	A4
Ni10U-MT12-AP6X-H1141 1634810	Uprox+, PTFE	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	LCP	N/A	YE	A	3	A4
Ni10U-MT12-AP6X-H1141/S1589 16348101	Uprox+, PTFE, Weldguard	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	WG	N/A	YE	A	3	A4
Ni10U-MT12E-AP6X2-H1141 1634844	Uprox+, PTFE	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	LCP	GN	YE	B	3	A4
Ni10U-MT12E-AP6X2-H1141/S1589 1634994	Uprox+, PTFE, Weldguard	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	WG	N/A	YE	B	3	A4
Ni8U-MT12-AP6X-H1141 1644240	Uprox, PTFE	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	3	A4
Ni8U-MT12-AP6X2-H1141 1644245	Uprox, PTFE	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	3	A4
Ni8U-MT12-AP6X2-H1141/S1589 1644292	Uprox, PTFE, Weldguard	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	3	A4
Ni8U-MT12E-AN6X2-H1141 1644248	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	B	2	A4
Ni8U-MT12E-AP6X2-H1141 1644247	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	B	3	A4
Ni8-MT12-AD4X-H1141/S1589 4411291	PTFE, Weldguard	8	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	A	1	A2
Ni8-MT12E-AN6X-H1141/S1589 4611397	Ext. Range, Weldguard	8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	WG	WG	N/A	YE	B	2	A4
Ni8-MT12E-AP6X-H1141/S1589 4611398	Ext. Range, Weldguard	8	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	WG	WG	N/A	YE	B	3	A4

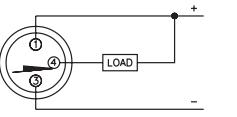
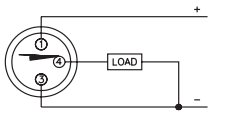
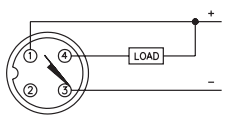
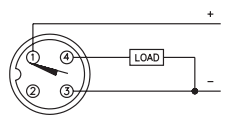
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Fully Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p> <p>12 mm - Embeddable, M8 Picofast Connection</p>
<p><b>B</b></p> <p>12 mm - Embeddable, M8 Picofast Connection</p>	<p><b>C</b></p> <p>12 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>D</b></p> <p>12 mm - Nonembeddable, M12 Eurofast Connection</p>	

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4T-*, RKV 4T-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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## Inductive Barrel Sensors | 12 mm

### Fully Threaded Metal Barrels with Connector and DC Outputs


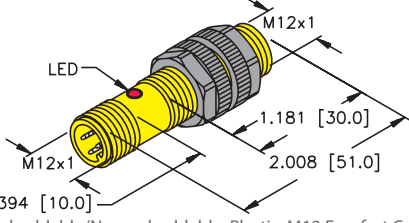
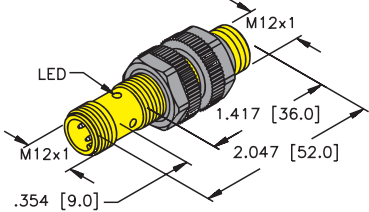
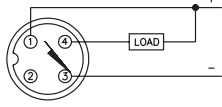
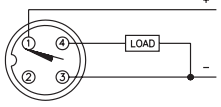
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi4-G12-AN6X-V1131 1690707	Extended Range	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi4-G12-AP6X-V1131 1690703	Extended Range	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi4-EG12-AP6X-H1141 4607091	Extended Range	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	RD	C	4	A4
Bi2-G12-AN6X-V1131 4635583		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi2-G12-AN6X-H1141 4606693		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	C	3	A4
Bi2-G12-AP6X-H1141 4606595		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	C	4	A4
Bi2-G12-AP6X-V1131 4606597		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	2	A4
Ni8-G12-AN6X-H1141 4611383	Extended Range	8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	D	3	A4
Ni5-G12-AN6X-V1131 4635721		5	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	1	A4
Ni5-G12-AN6X-H1141 4635793		5	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	D	3	A4
Ni5-G12-AN7X-H1141 1714593	TTL Compatible	5	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	D	3	A4
Ni5-G12-AP6X-V1131 4635621		5	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	2	A4
Ni5-G12-AP6X-H1141 4635692		5	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	D	4	A4

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Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Threaded Plastic Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable/Nonembeddable, Plastic, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>12 mm - Embeddable/Nonembeddable, Plastic, M12 Eurofast Connection</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RKK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKK 4T-*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection:</p> <ul style="list-style-type: none"> <li>≥220 mA on 200 mA Load Current</li> <li>≥170 mA on 150 mA Load Current</li> <li>≥120 mA on 100 mA Load Current</li> </ul> <p>Off-State (Leakage) Current:</p> <ul style="list-style-type: none"> <li>≤0.1 mA</li> <li>No-Load Current: ≤15 mA (Ferrite, Uprox)</li> <li>≤20 mA (Uprox+, Uprox3)</li> </ul>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

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## Inductive Barrel Sensors | 12 mm


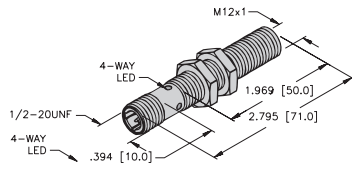
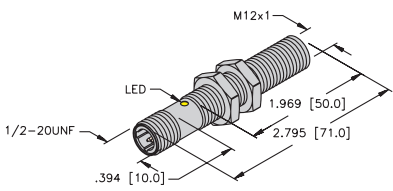
### Threaded Plastic Barrels with Connector and DC Outputs

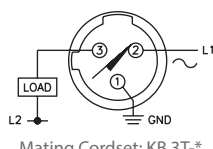
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi3U-S12-AN6X-H1141</b> 1634620	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	B	1	A4
<b>Bi3U-S12-AP6X-H1141</b> 1634600	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	B	2	A4
<b>Bi2-S12-AN6X-H1141</b> 46521		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	RD	A	1	A4
<b>Bi2-S12-AP6X-H1141</b> 46520		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	RD	A	2	A4
<b>Ni8U-S12-AN6X-H1141</b> 1644620	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	B	1	A4
<b>Ni8U-S12-AP6X-H1141</b> 1644600	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	B	2	A4
<b>Ni4-S12-AN6X-H1141</b> 46523		4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	RD	A	1	A4
<b>Ni4-S12-AP6X-H1141</b> 46522		4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	RD	A	2	A4

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# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="966 525 1339 546">12 mm - Embeddable, 1/2" Microfast Connection</p>
<p data-bbox="105 562 121 583">B</p>  <p data-bbox="203 777 690 798">12 mm - Embeddable, 1/2" Microfast Connection, PTFE Coated</p>	

Wiring Diagrams/Mating Cordsets	
<p data-bbox="105 863 121 884">1</p>  <p data-bbox="706 1008 885 1029">Mating Cordset: KB 3T-*</p>	

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p data-bbox="324 1098 592 1119">Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p data-bbox="211 1129 641 1150">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1161 535 1182">Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p data-bbox="105 1192 706 1245">Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p data-bbox="243 1255 706 1308">Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p data-bbox="227 1318 592 1371">Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p data-bbox="941 1098 1234 1119">Minimum Load Current: <math>\geq 3.0</math> mA</p> <p data-bbox="1006 1129 1364 1150">Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p data-bbox="998 1161 1291 1182">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1192 1307 1245">Transient Protection: Per EN 60947-5-2 Shock: 30 g, 11 ms</p> <p data-bbox="1047 1255 1461 1276">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1023 1287 1429 1308">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p data-bbox="324 1404 592 1425">Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p data-bbox="211 1436 641 1457">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1467 535 1488">Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p data-bbox="243 1499 706 1551">Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p data-bbox="227 1562 552 1583">Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p data-bbox="259 1593 552 1614">Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p data-bbox="1006 1404 1356 1446">Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p data-bbox="998 1499 1291 1520">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1530 1307 1551">Transient Protection: Per EN 60947-5-2 Shock: 30 g, 11 ms</p> <p data-bbox="1047 1583 1461 1604">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1023 1614 1429 1635">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Connector and AC/DC Outputs


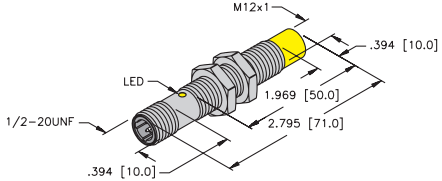
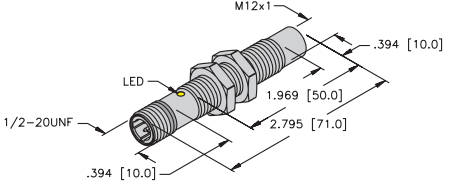
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi4-GT12H-ADZ32X-B3131 4205097	Stoneface	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	B	1	A5
Bi4-GT12-ADZ32X-B3131/S1589 4205087	PTFE, Weldguard	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	WG	N/A	RD	B	1	A5
Bi2U-G12-ADZ32X-B3131 4281005	Uprox	2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤100	-30 to +85	IP67	CPB	PBT	N/A	YE	A	1	A5
Bi2U-GT12-ADZ32X-B3131 4281015	Uprox	2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤100	-30 to +85	IP67	TC	TC	N/A	YE	B	1	A5
Bi2-G12-AZ33X-B3131 1304032		2	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Bi2-G12-ADZ32X-B3131 4205001		2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A5
Bi2-GT12H-ADZ32X-B3131/S34 4205093	PTFE, WFI, Stoneface	2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	B	1	A5
Bi2-GT12-ADZ32X-B3131/S34 4205005	PTFE, WFI	2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	B	1	A5
Bi2-GT12-AZ33X-B3131/S34 1304082	PTFE, WFI	2	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	B	1	A6

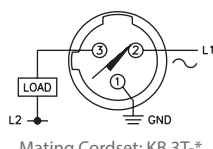
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="950 525 1356 546">12 mm - Nonembeddable, 1/2" Microfast Connection</p>
<p data-bbox="105 562 121 583">B</p>  <p data-bbox="186 777 706 798">12 mm - Nonembeddable, 1/2" Microfast Connection, PTFE Coated</p>	

Wiring Diagrams/Mating Cordsets	
<p data-bbox="105 863 121 884">1</p>  <p data-bbox="706 1008 885 1029">Mating Cordset: KB 3T-*</p>	

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p data-bbox="324 1102 592 1123">Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p data-bbox="211 1129 641 1150">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1157 544 1178">Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p data-bbox="105 1184 706 1239">Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p data-bbox="243 1245 706 1299">Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p data-bbox="227 1306 592 1356">Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p data-bbox="941 1102 1234 1123">Minimum Load Current: <math>\geq 3.0</math> mA</p> <p data-bbox="1006 1129 1364 1150">Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p data-bbox="998 1157 1291 1178">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1184 1307 1205">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1211 1258 1232">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1239 1469 1260">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1023 1266 1429 1287">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p data-bbox="324 1411 592 1432">Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p data-bbox="211 1438 641 1459">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1465 544 1486">Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p data-bbox="243 1493 706 1547">Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p data-bbox="227 1554 560 1575">Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p data-bbox="259 1581 560 1602">Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p data-bbox="1015 1411 1356 1432">Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math> ms max. 5 Hz)</p> <p data-bbox="998 1438 1429 1493"><math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p data-bbox="998 1499 1291 1520">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1526 1307 1547">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1554 1258 1575">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1581 1469 1602">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1023 1608 1429 1629">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Connector and AC/DC Outputs


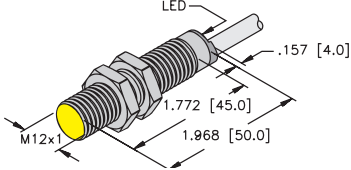
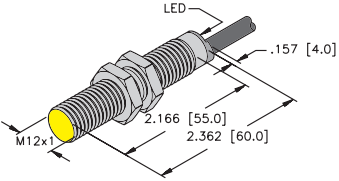
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni8U-G12-ADZ32X-B3131 4281105	Uprox	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤100	-30 to +85	IP67	CPB	PBT	N/A	YE	A	1	A5
Ni8U-GT12-ADZ32X-B3131 4281115	Uprox	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤100	-30 to +85	IP67	TC	PA 12	N/A	YE	B	1	A5
Ni4-G12-ADZ32X-B3131 4205201		4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A5
Ni4-G12-AZ33X-B3131 1304232		4	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Ni4-GT12-ADZ32X-B3131/S34 4205205	PTFE, WFI	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	PA 12	N/A	RD	B	1	A5
Ni4-GT12-AZ33X-B3131/S34 1304292	PTFE, WFI	4	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	PA 12	N/A	RD	B	1	A6
Ni4-GT12-ADZ32X-B3131/S34/S1589 4205293	PTFE, Weldguard	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	WG	N/A	RD	B	1	A5

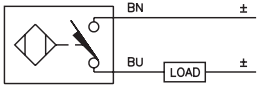
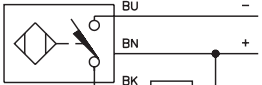
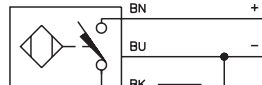
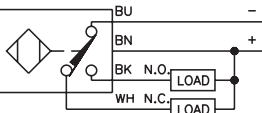
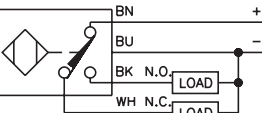
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="1003 520 1295 541">12 mm - Embeddable, Potted-in Cable</p>
<p data-bbox="103 558 120 579">B</p>  <p data-bbox="207 772 688 793">12 mm - Embeddable, Extended Length Barrel, Potted-in Cable</p>	

Wiring Diagrams/Mating Cordsets		
<p data-bbox="103 863 120 884">1</p> 	<p data-bbox="591 863 607 884">2</p> 	<p data-bbox="1045 863 1062 884">3</p> 
<p data-bbox="103 1045 120 1066">4</p> 	<p data-bbox="591 1045 607 1066">5</p> 	

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 1283 537 1304">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1314 643 1335">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="136 1346 699 1388">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="115 1398 565 1419">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="269 1430 565 1451">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="911 1283 1235 1304">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1000 1314 1292 1335">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="967 1346 1308 1367">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1081 1377 1260 1398">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1409 1471 1430">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1440 1438 1461">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1503 537 1524">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1535 643 1556">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="136 1566 537 1587">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="115 1598 764 1671">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="237 1682 565 1703">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="318 1713 683 1755">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="886 1503 1219 1524">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1000 1535 1292 1556">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="919 1566 1276 1587">Reverse Polarity Protection: Incorporated</p> <p data-bbox="951 1598 1276 1619">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1629 1308 1650">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="984 1661 1227 1682">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1692 1260 1713">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1724 1471 1745">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1755 1438 1776">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 12 mm

### Embeddable Threaded Metal Barrels with Cable and DC Outputs


Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi6U-M12-AN6X 1644806	Uprox3	6	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Bi6U-M12-AP6X 1644801	Uprox3	6	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Bi6U-M12-VP6X 1644803	Uprox3, Comp. Outputs	6	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	5	A4
Bi4U-M12-AN6X 1634823	Uprox+	4	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Bi4U-M12-AP6X 1634803	Uprox+	4	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Bi4-M12-AN6X 4607130	Extended Range	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi4-M12-AP6X 4607006	Extended Range	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi4-M12-VN6X 1643300	Ext. Range, Comp. Outputs	4	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Bi4-M12-VP6X 1633300	Ext. Range, Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4
Bi4-M12E-VN6X 1643290	Ext. Range, Comp. Outputs	4	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	4	A4
Bi4-M12E-VP6X 1633391	Ext. Range, Comp. Outputs	4	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	5	A4
Bi3U-M12-AN6X 1634120	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	2	A4
Bi3U-M12-AP6X 1634100	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	3	A4
Bi3U-M12E-AP6X 1634108	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	B	3	A4
Bi3U-EM12-AN6X 1634320	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	2M/PVC	A	2	A4
Bi3U-EM12-AP6X 1634300	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	2M/PVC	A	3	A4
Bi3-M12-AD4X 4405035	Extended Range	3	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Bi2U-M12E-AD4X 4405062	Uprox	2	2-wire DC	10-65 VDC	1000	≤100	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	B	1	A2
Bi2-M12-AD4X 44050		2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Bi2-M12-AP6X 46050		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi2-M12-VN6X 16402	Comp. Outputs	2	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Bi2-M12-VP6X 16302	Comp. Outputs	2	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4

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Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p> <p>12 mm - Nonembeddable, Potted-in Cable</p>
<p><b>B</b></p> <p>12 mm - Nonembeddable, Potted-In Cable, Extended Barrel Length</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>
<p><b>4</b></p>	<p><b>5</b></p>	

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>		<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs


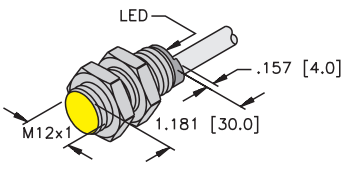
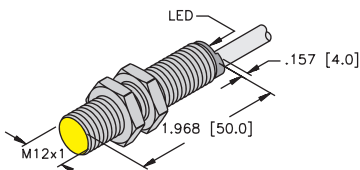
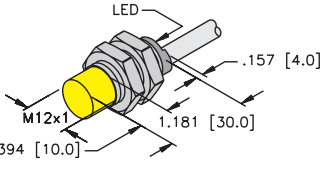
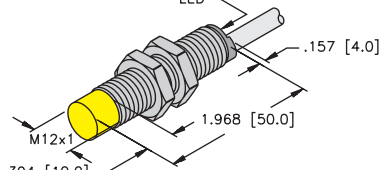
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni10U-M12-AN6X 1634825	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Ni10U-M12-AP6X 1634805	Uprox	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Ni8U-M12-AN6X 1644120	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Ni8U-M12-AP6X 1644100	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Ni8U-M12E-AP6X 1644102	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	2M/PVC	B	3	A4
Ni8U-EM12-AP6X 1644300	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	2M/PVC	A	3	A4
Ni8-M12-AD4X 4411235	Extended Range	8	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Ni8-M12-AN6X 4611318	Extended Range	8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Ni8-M12E-AN6X 4611340		8	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	2	A4
Ni8-M12-AP6X 4611319	Extended Range	8	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Ni8-M12-VN6X 4611321	Ext. Range, Comp. Outputs	8	4-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Ni8-M12-VP6X 4611322	Ext. Range, Comp. Outputs	8	4-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4
Ni4-M12-AD4X 44052		4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Ni4-M12E-AD4X 4405298		4	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	1	A2
Ni4-M12-AP6X 46052		4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4

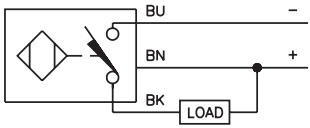
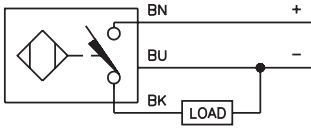
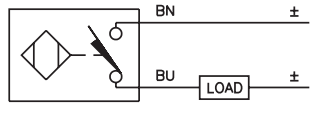
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Fully Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>	<p><b>B</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>
<p><b>C</b></p>  <p>12 mm - Nonembeddable, Potted-In Cable</p>	<p><b>D</b></p>  <p>12 mm - Nonembeddable, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

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### Fully Threaded Metal Barrels with Cable and DC Outputs


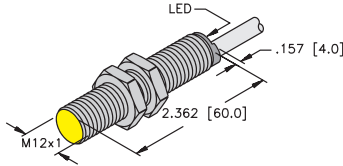
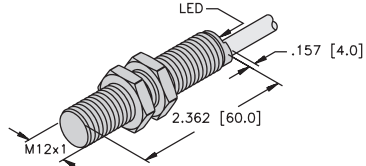
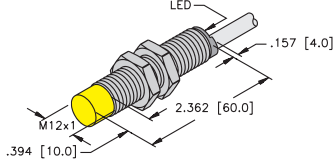
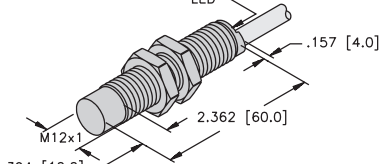
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi4-G12-AN6X 1690706	Extended Range	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	1	A4
Bi4-G12K-AN6X 4670251	Ext. Range, Short Barrel	4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A4
Bi4-G12K-AP6X 4670250	Ext. Range, Short Barrel	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi2-G12-AN6X 4635500		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	1	A4
Bi2-G12-AN7X 4730500	TTL Compatible	2	3-wire DC NPN	10-30 VDC	2000	≤150	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	1	A4
Bi2-EG12-AP6X 4605001		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	B	2	A4
Bi2-G12-AP6X 4635400		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	2	A4
Bi2-G12K-AN6X 46712	Short Barrel	2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A4
Bi2-G12K-AP6X 46702	Short Barrel	2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Ni8-G12-AN6X 4611370	Extended Range	8	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	1	A4
Ni8-G12K-AD4X 4411230	Short Barrel	8	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	3	A2
Ni5-G12K-AN6X 46713	Short Barrel	5	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	2	A4
Ni5-G12K-AP6X 46703	Short Barrel	5	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	2	A4
Ni5-G12-AN6X 4635700		5	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	1	A4
Ni5-G12-AN7X 1714500	TTL Compatible	5	3-wire DC NPN	10-30 VDC	1500	≤150	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	1	A4
Ni5-G12-AP6X 46356		5	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	2	A4

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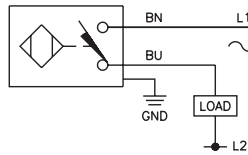
# Inductive Barrel Sensors | 12 mm

## Fully Threaded Metal Barrels with Cable and AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>	<p><b>B</b></p>  <p>12 mm - Embeddable, Potted-In Cable, PTFE Coated</p>
<p><b>C</b></p>  <p>12 mm - Nonembeddable, Potted-In Cable</p>	<p><b>D</b></p>  <p>12 mm - Nonembeddable, Potted-In Cable, PTFE Coated</p>	

### Wiring Diagrams/Mating Cordsets

1



A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC)</p> <p><math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6	2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz)</p> <p><math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm</p> <p><math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

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### Fully Threaded Metal Barrels with Cable and AC/DC Outputs


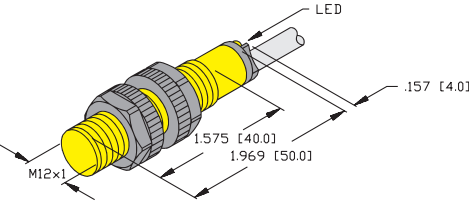
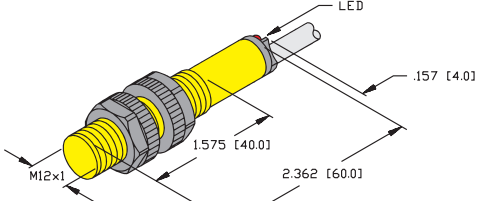
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi4-G12-ADZ32X</b> 4205030	Extended Range	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	A	1	A5
<b>Bi2-G12-ADZ32X</b> 4205000		2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	A	1	A5
<b>Bi2-G12-AZ33X</b> 1304002		2	2-wire AC/DC	35-250 VAC	20	≤200	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	A	1	A6
<b>Bi2-GT12-ADZ32X/S34</b> 4205010	PTFE, WFI	2	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	2M/PVC	B	1	A5
<b>Bi2-GT12-AZ33X/S34</b> 1304052	PTFE, WFI	2	2-wire AC/DC	35-250 VAC	20	≤200	-25 to +70	IP67	TC	TC	N/A	RD	2M/PVC	B	1	A6
<b>Ni8-G12-ADZ32X</b> 4205400	Extended Range	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	C	1	A5
<b>Ni4-G12-AZ33X</b> 1304202		4	2-wire AC/DC	35-250 VAC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	C	1	A6
<b>Ni4-G12-ADZ32X</b> 4205200		4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	C	1	A5
<b>Ni4-GT12-ADZ32X/S34</b> 4205210	PTFE, WFI	4	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	2M/PVC	D	1	A5
<b>Ni4-GT12-AZ33X/S34</b> 1304294	PTFE, WFI	4	2-wire AC/DC	35-250 VAC	20	≤100	-25 to +70	IP67	TC	TC	N/A	RD	2M/PVC	D	1	A6

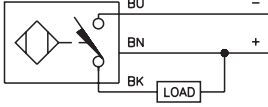
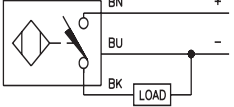
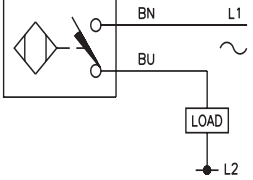
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## Threaded Plastic Barrels with Cable and AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable/Nonembeddable, Plastic, Potted-In Cable</p>	<p><b>B</b></p>  <p>12 mm - Embeddable/Nonembeddable, Plastic, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 12 mm

### Threaded Plastic Barrels with Cable and AC/DC Outputs


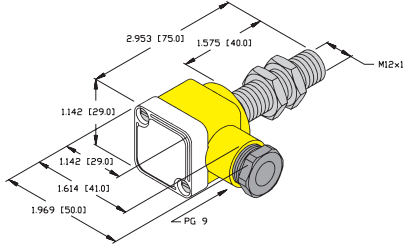
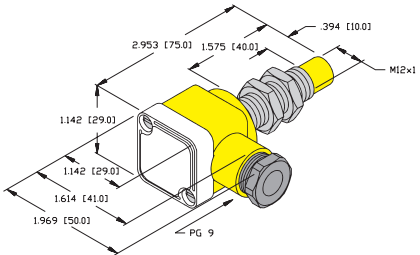
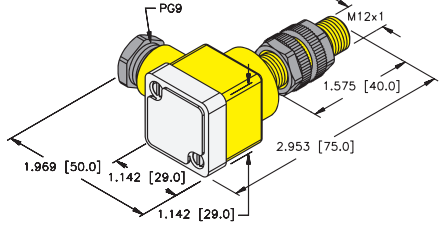
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi3U-S12-AN6X 1634520	Uprox	3	3-wire DC NPN	10-30 VDC	3000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	2M/PVC	A	1	A4
Bi3U-S12-AP6X 1634500	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	2M/PVC	A	2	A4
Bi2-S12-AN6X 46531		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	1	A4
Bi2-S12-AN7X 1713800	TTL Compatible	2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	1	A4
Bi2-S12-AP6X 46530		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	2	A4
Bi2-S12-AP7X/S100 17555	TTL Compatible, High Temp. 100 °C	2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +100	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	2	A4
Bi2-S12-AZ31X 13020		2	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	3	A6
Bi2-S12-AZ31X/S100 1302001	High Temp. 100 °C	2	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤100	-25 to +100	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	3	A6
Ni8U-S12-AN6X 1644520	Uprox	8	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	2M/PVC	A	1	A4
Ni8U-S12-AP6X 1644500	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	2M/PVC	A	2	A4
Ni4-S12-AN6X 46533		4	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	1	A4
Ni4-S12-AN7X 1713900	TTL Compatible	4	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	1	A4
Ni4-S12-AP6X 46532		4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	B	2	A4
Ni4-S12-AZ31X 13022		4	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	3	A6
Ni4-S12-AZ31X/S100 1302201	High Temp. 100 °C	4	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤100	-25 to +100	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	3	A6

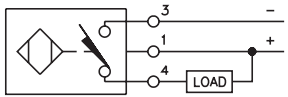
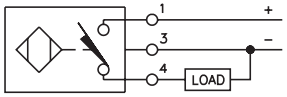
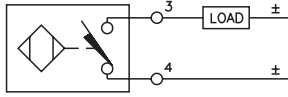
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm

## Threaded Barrels with Terminal Chamber and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, Terminal Chamber</p>
<p><b>B</b></p>  <p>12 mm - Nonembeddable, Terminal Chamber</p>	<p><b>C</b></p>  <p>12 mm - Embeddable/Nonembeddable, Plastic, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

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## Inductive Barrel Sensors | 12 mm

### Threaded Barrels with Terminal Chamber and DC Outputs


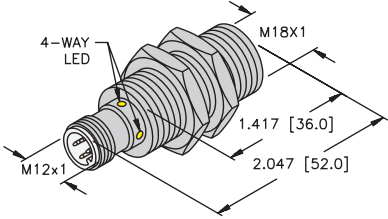
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi3U-EG12SK-AP6X 1634400	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	2	A4
Bi3U-P12SK-AP6X 1634700	Uprox	3	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	C	2	A4
Bi2-G12SK-AN6X2 4636500		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	A	1	A4
Bi2-G12SK-AP6X2 4636400		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	A	2	A4
Bi2-P12SK-AD4X 4453050		2	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	C	3	A2
Bi2-P12SK-AN6X2 4654000		2	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	1	A4
Bi2-P12SK-AP6X2 4653980		2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	2	A4
Ni8U-EG12SK-AP6X 1644400	Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	B	2	A4
Ni5-G12SK-AP6X2 46366		5	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	B	2	A4
Ni5-P12SK-AP6X2 4654100		5	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	2	A4

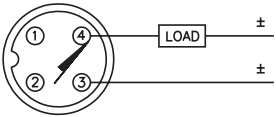
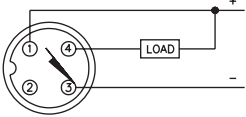
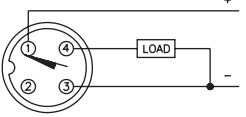
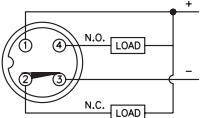
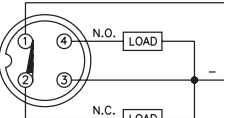
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>18 mm - Embeddable M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*; RKV 4T-*</p>
<p>4</p>  <p>Mating Cordset: RK 4.4T-*; RKV 4.4T-*</p>	<p>5</p>  <p>Mating Cordset: RK 4.4T-*</p>	

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>		<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi10U-M18-AN6X-H1141 1644847	Uprox3	10	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	2	A4
Bi10U-M18-AP6X-H1141 1644830	Uprox3	10	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	3	A4
Bi10U-M18-VP6X-H1141 1644844	Uprox3, Comp. Outputs	10	4-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	5	A4
Bi8U-M18-AN6X-H1141 1644737	Uprox+	8	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	2	A4
Bi8U-EM18-AN6X-H1141 1644738	Uprox+	8	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	2	A4
Bi8U-M18-AP6X-H1141 1644731	Uprox+	8	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	3	A4
Bi8U-EM18-AP6X-H1141 1644734	Uprox+	8	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	3	A4
Bi8-M18-AN6X-H1141 4615100	Extended Range	8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	2	A4
Bi8-M18-AP6X-H1141 46150	Extended Range	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	3	A4
Bi8-EM18H-AP6X-H1141 4615094	Ext. Range, Stoneface	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	3	A4
Bi8-EM18-AP6X-H1141/S1589 4615099	Weldguard	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	3	A4
Bi8-M18-VN4X-H1141 4590702	Ext. Range, Comp. Outputs	8	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	4	A4
Bi8-M18-VP4X-H1141 4590701	Ext. Range, Comp. Outputs	8	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	5	A4
Bi7-M18-AD4X-H1141 4414541	Extended Range	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi5U-M18-AN6X-H1141 1635150	Uprox	5	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	2	A4
Bi5U-EM18-AN6X-H1141 1635350	Uprox	5	3-wire DC NPN	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	2	A4
Bi5U-M18-AP6X-H1141 1635140	Uprox	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	3	A4
Bi5U-EM18-AP6X-H1141 1635340	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	3	A4
Bi5-M18-AD4X-H1141 44145		5	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi5-M18-AN6X-H1141 46146		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi5-M18-AP6X-H1141 46145		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi5-EM18-AP6X-H1141 4614501		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	3	A4
Bi5-M18-VN4X-H1141 15718	Comp. Outputs	5	4-wire DC NPN	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi5-EM18-VN4X-H1141 4614699	Comp. Outputs	5	4-wire DC NPN	10-65 VDC	1000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	4	A4
Bi5-M18-VP4X-H1141 15618	Comp. Outputs	5	4-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4

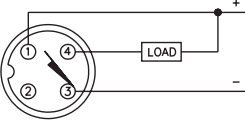
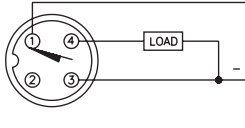
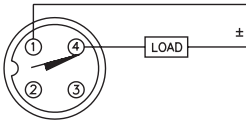
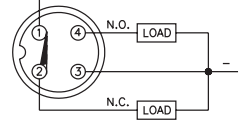
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="966 571 1339 592">18 mm - Embeddable, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets			
<p data-bbox="105 661 121 682">1</p>  <p data-bbox="113 850 430 871">Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>	<p data-bbox="457 661 474 682">2</p>  <p data-bbox="462 850 779 871">Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>	<p data-bbox="808 661 824 682">3</p>  <p data-bbox="868 850 1079 871">Mating Cordset: RK 4.23T-*</p>	<p data-bbox="1161 661 1177 682">4</p>  <p data-bbox="1226 850 1437 871">Mating Cordset: RK 4.4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 940 544 961">Ripple: <math>\leq 10\%</math></p> <p data-bbox="219 972 641 993">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1003 706 1056">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="113 1066 560 1087">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="267 1098 560 1119">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="917 940 1242 961">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="998 972 1291 993">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1003 1307 1024">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1035 1258 1056">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1066 1469 1087">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1098 1437 1119">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1161 544 1182">Ripple: <math>\leq 10\%</math></p> <p data-bbox="219 1192 641 1213">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1224 544 1245">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="113 1255 771 1339">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="235 1350 560 1371">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="316 1381 690 1423">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="885 1161 1226 1182">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="998 1192 1291 1213">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="917 1224 1274 1245">Reverse Polarity Protection: Incorporated</p> <p data-bbox="950 1255 1274 1276">Wire-Break Protection: Incorporated</p> <p data-bbox="966 1287 1307 1308">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="982 1318 1226 1339">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1079 1350 1258 1371">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1381 1469 1402">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1413 1437 1434">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs


Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi8U-EM18M-AP6X2-H1141/S1589 1644771	Uprox+, Weldguard	8	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	2	A4
Bi8U-M18M-VP6X-H1141 1634945	Uprox+, Comp. Outputs	8	4-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	4	A4
Bi8-M18M-AP6X-H1141 4615083	Extended Range	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +75	IP67	CPB	PBT	N/A	YE	A	2	A4
Bi5U-M18M-AD4X-H1144 4405066	Uprox+	5	2-wire DC	10-65 VDC	10	≤100	-30 to +85	IP68	TC	LCP	N/A	YE	A	3	A2
Bi5U-M18-AN6X-H1141/S395 1635154	Uprox	5	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi5U-M18-AP6X-H1141/S395 1635141	Uprox	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	2	A4
Bi5U-EM18-AP6X-H1141/S395 1635342	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	PA 12	N/A	YE	A	2	A4
Bi5U-EM18H-AN6X2-H1141/S395 1635146	Uprox, Stoneface	5	3-wire DC NPN	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	SF	GN	YE	A	1	A4
Bi5U-EM18H-AN6X2-H1141/S395/S1589 1635196	Uprox, Weldguard	5	3-wire DC NPN	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	1	A4
Bi5U-EM18H-AP6X2-H1141/S395 1635158	Uprox, Stoneface	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	SF	GN	YE	A	2	A4
Bi5U-EM18-AP6X2-H1141/S395/S1589 1635197	Uprox, Weldguard	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	2	A4
Bi5U-EM18M-AP6X2-H1141 1635349	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	PBT	GN	YE	A	2	A4

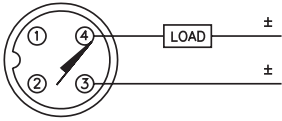
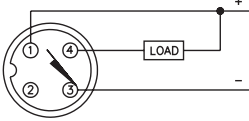
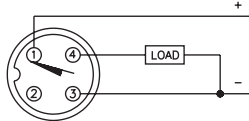
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p> <p data-bbox="894 573 1406 594">18 mm - Embeddable, Ext. Barrel Length, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 661 121 682">1</p>  <p data-bbox="237 852 435 873">Mating Cordset: RK 4.2T-*</p>	<p data-bbox="586 661 602 682">2</p>  <p data-bbox="659 852 964 873">Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p data-bbox="1057 661 1073 682">3</p>  <p data-bbox="1081 852 1468 873">Mating Cordset: RK 4T-*, RKV 4T-*, RKC 4T-*/S1587</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 940 537 961">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 972 643 993">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="134 1003 699 1052">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="112 1062 565 1083">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="269 1094 558 1115">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p data-bbox="911 940 1235 961">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1000 972 1289 993">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="967 1003 1305 1024">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1081 1035 1256 1056">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1066 1471 1087">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1098 1435 1119">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1163 537 1184">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1194 643 1215">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="134 1226 542 1247">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="112 1257 764 1335">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="237 1346 558 1367">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="318 1377 678 1398">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>		<p data-bbox="889 1163 1219 1184">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1000 1194 1289 1215">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="911 1226 1273 1247">Reverse Polarity Protection: Incorporated</p> <p data-bbox="951 1257 1273 1278">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1289 1305 1310">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="984 1320 1224 1341">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1352 1256 1373">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1383 1471 1404">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1415 1435 1436">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs


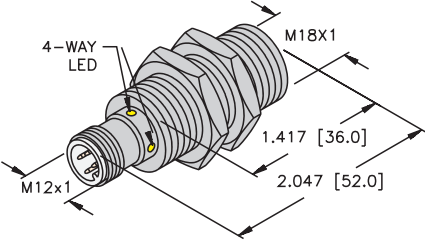
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Bi8U-EM18E-AP6X-H1141 1634865	Uprox+	8	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	3	A4
Bi8-M18E-AN6X-H1141 4615190	Extended Range	8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	2	A4
Bi8-EM18HE-AN6X-H1141 4615194	Ext. Range, Stoneface	8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	2	A4
Bi8-EM18E-AN6X-H1141/S1589 4615193	Ext. Range, Weldguard	8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	2	A4
Bi8-EM18E-AP6X-H1141 46150952	Extended Range	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	A	3	A4
Bi8-EM18HE-AP6X-H1141 4614100	Ext. Range, Stoneface	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	3	A4
Bi8-EM18E-AP6X-H1141/S1589 4615096	Ext. Range, Weldguard	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	3	A4
Bi7-M18E-AD4X-H1141 4414580	Extended Range	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi5U-M18E-AN6X-H1141 1635122	Uprox	5	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	2	A4
Bi5U-M18E-AP6X-H1141 1635103	Uprox	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	3	A4
Bi5-M18E-AD4X-H1141 4414591		5	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi5-M18E-AN6X-H1141 4614697		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4

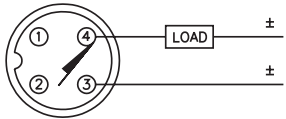
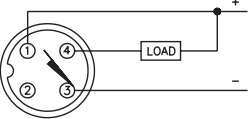
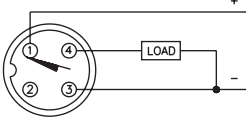
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Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>18 mm - Embeddable, M12 Eurofast Connection, PTFE Coated</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*</p>

A2 2-wire DC - (AD, RD, AG)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

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# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


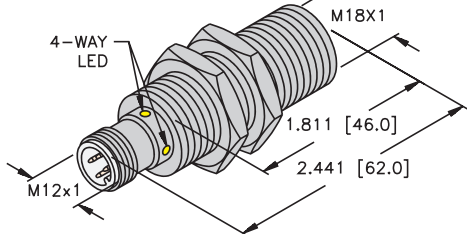
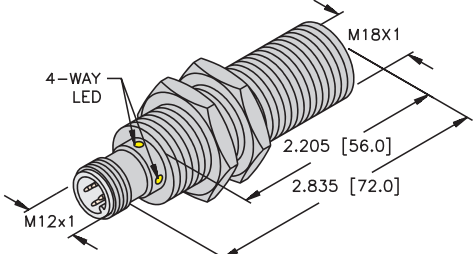
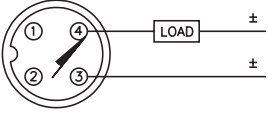
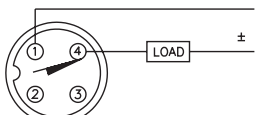
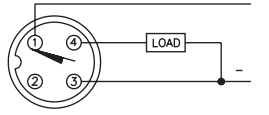
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi10U-MT18-AN6X-H1141 1644858	Uprox3, PTFE	10	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP68	TC	TC	N/A	YE	A	2	A4
Bi10U-MT18-AP6X-H1141 1644831	Uprox3, PTFE	10	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP68	TC	TC	N/A	YE	A	3	A4
Bi10U-MT18-AP6X2-H1141 1644905	Uprox3, PTFE	10	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP68	TC	TC	GN	YE	A	3	A4
Bi8U-MT18-AN6X-H1141 1644739	Uprox+, PTFE	8	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	2	A4
Bi8U-MT18-AP6X-H1141 1644730	Uprox+, PTFE	8	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	3	A4
Bi8U-MT18-AN6X-H1141/S1589 1644791	Uprox+, PTFE, Weldguard	8	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	WG	N/A	YE	A	2	A4
Bi7-MT18H-AD4X-H1141 44145808	Ext. Range, PTFE	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	A	1	A2
Bi5U-MT18-AN6X-H1141 1635250	Uprox, PTFE	5	3-wire DC NPN	10-30 VDC	2500	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	2	A4
Bi5U-MT18-AP6X-H1141 1635240	Uprox, PTFE	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	3	A4
Bi5U-MT18-AP6X2-H1141 1635245	Uprox, PTFE	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	3	A4

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Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p>A</p>  <p>18 mm - Embeddable, M12 Eurofast Connection, PTFE Coated</p>	
<p>B</p>  <p>18 mm - Embeddable, Ext. Barrel Length, M12 Eurofast Connection, PTFE Coated</p>		
Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4.23T-*</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>
A2 2-wire DC - (AD, RD, AG)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi8U-MT18M-AP6X2-H1141 1644740	Uprox+, PTFE	8	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	LCP	GN	YE	A	3	A4
Bi8U-MT18M-AP6X2-H1141/S1589 16447411	Uprox+, PTFE, Weldguard	8	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	WG	GN	YE	A	3	A4
Bi7-MT18HE-AD4X-H1141 4414597	PTFE, Stoneface	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	B	1	A2
Bi7-MT18HE-AD4X-H1144 4414598	PTFE, Stoneface	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	SF	N/A	YE	B	2	A2
Bi7-MT18HE-AD4X-H1141/S1589 4414588	PTFE, Weldguard	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	B	1	A2
Bi7-MT18HE-AD4X-H1144/S1589 4414599	PTFE, Weldguard	7	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	TC	WG	N/A	YE	B	2	A2
Bi5U-MT18E-AP6X2-H1141 1635247	Uprox, PTFE	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	TC	TC	GN	YE	B	3	A4
Bi5U-MT18M-AP6X2-H1141 1635252	Uprox, PTFE	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	3	A4
Bi5U-MT18-AP6X-H1141/S395 1635231	Uprox, PTFE	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	3	A4
Bi5U-MT18H-AP6X2-H1141/S395 1635220	Uprox, PTFE, Stoneface	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	SF	GN	YE	A	3	A4
Bi5U-MT18-AP6X2-H1141/S395/S1589 1635291	Uprox, PTFE, Weldguard	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	3	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p> <p data-bbox="950 573 1356 594">18 mm - Nonembeddable, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 661 121 682">1</p> <p data-bbox="227 850 430 871">Mating Cordset: RK 4.2T-*</p>	<p data-bbox="571 661 587 682">2</p> <p data-bbox="693 850 896 871">Mating Cordset: RK 4.23T-*</p>	<p data-bbox="1047 661 1063 682">3</p> <p data-bbox="1136 850 1339 871">Mating Cordset: RK 4T-*; RKV 4T-*</p>
<p data-bbox="105 888 121 909">4</p> <p data-bbox="194 1081 454 1102">Mating Cordset: RK 4T-*; RKV 4T-*</p>	<p data-bbox="571 888 587 909">5</p> <p data-bbox="698 1081 893 1102">Mating Cordset: RK 4.4T-*</p>	<p data-bbox="1047 888 1063 909">6</p> <p data-bbox="1169 1081 1364 1102">Mating Cordset: RK 4.4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="397 1176 535 1197">Ripple: <math>\leq 10\%</math></p> <p data-bbox="211 1207 641 1228">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1234 698 1285">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="105 1291 560 1312">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="259 1318 560 1339">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="909 1176 1234 1197">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="998 1207 1291 1228">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1234 1307 1255">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1262 1258 1283">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1289 1469 1310">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1316 1437 1337">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="397 1396 535 1417">Ripple: <math>\leq 10\%</math></p> <p data-bbox="211 1428 641 1449">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="129 1455 535 1476">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="105 1482 763 1564">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="227 1570 560 1591">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="316 1598 690 1648">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="893 1396 1218 1417">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="998 1428 1291 1449">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="917 1455 1274 1476">Reverse Polarity Protection: Incorporated</p> <p data-bbox="950 1482 1274 1503">Wire-Break Protection: Incorporated</p> <p data-bbox="966 1509 1307 1530">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="982 1537 1226 1558">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1079 1564 1258 1585">Shock: 30 g, 11 ms</p> <p data-bbox="1055 1591 1469 1612">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1619 1437 1640">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


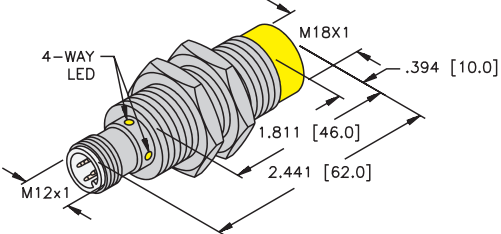
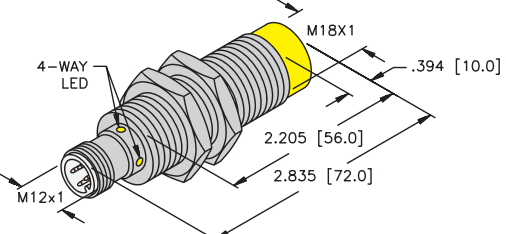
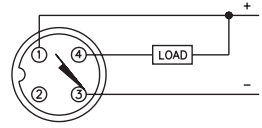
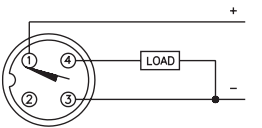
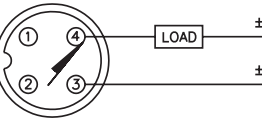
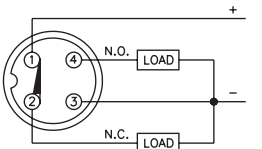
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni15U-M18-AN6X-H1141 1635335	Uprox+	15	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	3	A4
Ni15U-EM18-AN6X-H1141 1635336	Uprox+	15	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	3	A4
Ni15U-M18-AP6X-H1141 1635331	Uprox+	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	4	A4
Ni15U-EM18-AP6X-H1141 1635332	Uprox+	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	4	A4
Ni14-M18-AD4X-H1141 4417241	Extended Range	14	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni14-M18-AD4X-H1144 4417290	Extended Range	14	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A2
Ni14-M18-AN6X-H1141 4611410	Extended Range	14	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni14-M18-AP6X-H1141 4611400	Extended Range	14	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni14-M18-VN4X-H1141 4590603	Ext. Range, Comp. Outputs	14	4-wire DC NPN	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni14-M18-VP4X-H1141 4590602	Ext. Range, Comp. Outputs	14	4-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Ni12U-M18-AN6X-H1141 1645150	Uprox	12	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	A	3	A4
Ni12U-EM18-AN6X-H1141 1645350	Uprox	12	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	3	A4
Ni12U-M18-AP6X-H1141 1645140	Uprox	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	A	4	A4
Ni12U-M18-AP6X2-H1141 1645145	Uprox	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	LCP	GN	YE	A	4	A4
Ni12U-EM18-AP6X-H1141 1645340	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	4	A4
Ni12U-EM18-AP6X2-H1141 1645345	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	GN	YE	A	4	A4
Ni10-M18-AN6X-H1141 4614892		10	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni10-M18-AP6X-H1141 4641291		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni8-M18-AD4X-H1141 44147		8	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni8-M18-AD4X-H1144 4411288		8	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A2
Ni8-M18-AN6X-H1141 46148		8	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni8-M18-AP6X-H1141 46147		8	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni8-M18-VN4X-H1141 15719	Comp. Outputs	8	4-wire DC NPN	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni8-M18-VP4X-H1141 15619	Comp. Outputs	8	4-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>18 mm - Nonembeddable, M12 Eurofast Connection</p>
<p>B</p>  <p>18 mm - Nonembeddable, Ext. Barrel Length M12 Eurofast Connection</p>	
Wiring Diagrams/Mating Cordsets	
<p>1</p>  <p>Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>
<p>3</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>4</p>  <p>Mating Cordset: RK 4.4T-*</p>
A2 2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


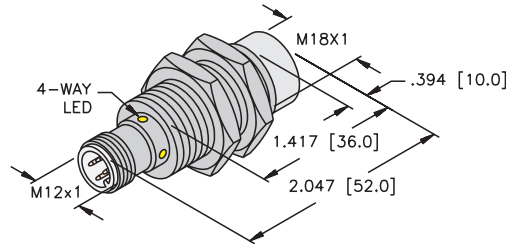
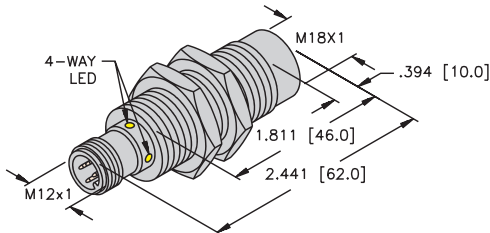
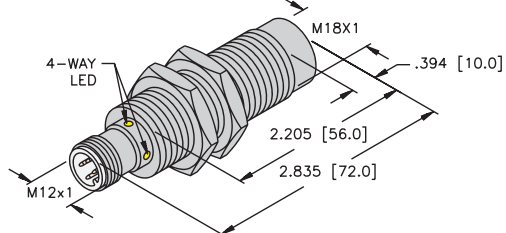
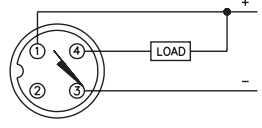
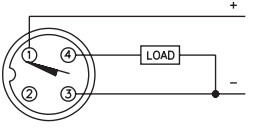
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni14-M18E-AD4X-H1141 4417292	Extended Range	14	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	3	A2
Ni14-M18E-AN6X-H1141 4611483	Extended Range	14	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	1	A4
Ni14-EM18E-AN6X-H1141/S1589 4611494	Ext. Range, Weldguard	14	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	SS	WG	N/A	YE	B	1	A4
Ni14-M18E-AP6X-H1141 4611489	Extended Range	14	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	2	A4
Ni14-EM18E-AP6X-H1141/S1589 4611495	Ext. Range, Weldguard	14	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	SS	WG	N/A	YE	B	2	A4
Ni12U-M18-AN6X-H1141/S395 1645151	Uprox	12	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	1	A4
Ni12U-EM18-AP6X2-H1141/S395 1645304	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	GN	YE	A	2	A4
Ni12U-EM18-AN6X2-H1141/S395/S1589 1645490	Uprox, Weldguard	12	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	1	A4
Ni12U-EM18-AP6X2-H1141/S395/S1589 1645491	Uprox, Weldguard	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	2	A4
Ni12U-M18E-AP6X-H1141 1645143	Uprox	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	LCP	N/A	YE	B	2	A4
Ni12U-M18-AP6X-H1141/S395 1645142	Uprox	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	2	A4
Ni12U-M18M-VP4X-H1141 1581458	Uprox, Comp. Outputs	12	4-wire DC PNP	10-65 VDC	1500	≤200	-30 to +85	IP68	CPB	PBT	N/A	YE	A	4	A4
Ni10-M18E-AN6X-H1141 4614894		10	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	1	A4
Ni10-M18E-AP6X-H1141 4641294		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	2	A4
Ni8-M18E-AD4X-H1141 4411210		8	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	3	A2
Ni8-M18E-VP4X-H1141 1561990	Comp. Outputs	8	4-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	4	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Nonembeddable, M12 Eurofast Connection, PTFE Coated</p>
<p><b>B</b></p>  <p>18 mm - Nonembeddable, M12 Eurofast Connection, PTFE Coated</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, Ext. Barrel Length M12 Eurofast Connection, PTFE Coated</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


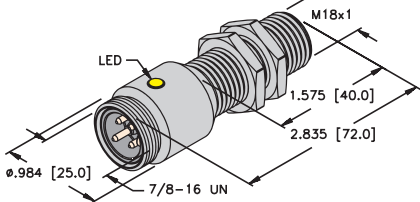
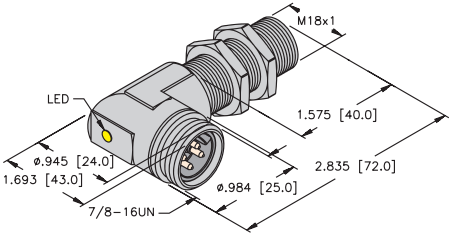
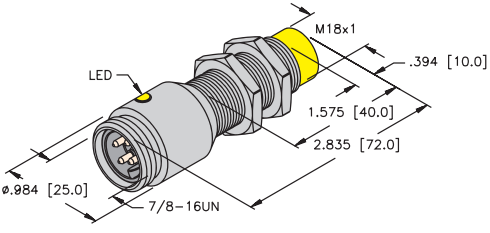
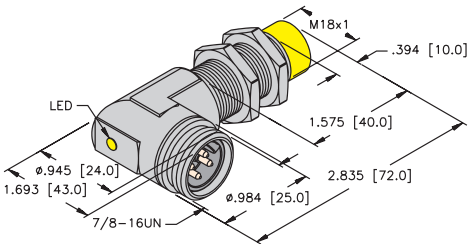
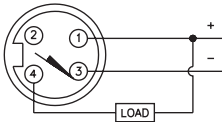
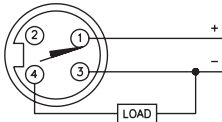
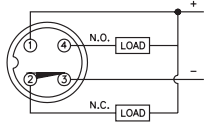
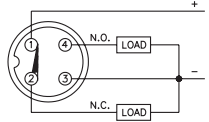
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni15U-MT18-AN6X-H1141 1635337	Uprox+, PTFE	15	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	1	A4
Ni15U-MT18-AN6X-H1141/S1589 16353370	Uprox+, PTFE, Weldguard	15	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	WG	N/A	YE	A	1	A4
Ni15U-MT18-AP6X-H1141 1635333	Uprox+, PTFE	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	2	A4
Ni15U-MT18-AP6X-H1141/S1589 16353331	Uprox+, PTFE, Weldguard	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	WG	N/A	YE	A	2	A4
Ni15U-MT18M-AP6X2-H1141 1635338	Uprox+, PTFE	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	TC	GN	YE	B	2	A4
Ni15U-MT18M-AP6X2-H1141/S1589 16352920	Uprox+, PTFE, Weldguard	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	TC	WG	GN	YE	B	2	A4
Ni14-MT18E-AP6X-H1141/S1589 4611497	Ext. Range, PTFE, Weldguard	14	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	TC	WG	N/A	YE	C	2	A4
Ni12U-MT18-AN6X-H1141 1645250	Uprox, PTFE	12	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	1	A4
Ni12U-MT18-AP6X-H1141 1645240	Uprox, PTFE	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	2	A4
Ni12U-MT18-AP6X-H1141/S1589 1645292	Uprox, Weldguard	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	WG	N/A	YE	A	2	A4
Ni12U-MT18-AP6X2-H1141 1645245	Uprox, PTFE	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	2	A4
Ni12U-MT18-AP6X2-H1141/S1589 1645293	Uprox, Weldguard	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	2	A4
Ni12U-MT18-AP6X-H1141/S395 1645242	Uprox, PTFE	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	N/A	YE	B	2	A4
Ni12U-MT18-AP6X2-H1141/S395 1645246	Uprox, PTFE	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	TC	GN	YE	B	2	A4
Ni12U-MT18-AP6X2-H1141/S395/ S1589 1645291	Uprox, PTFE, Weldguard	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	TC	WG	GN	YE	B	2	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Fully Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, 7/8" Minifast Connection</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, Right Angle, 7/8" Minifast Connection</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, 7/8" Minifast Connection</p>
<p><b>D</b></p>  <p>18 mm - Nonembeddable, 7/8" Minifast Right Angle Connection</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RKM 40-*M</p>	<p><b>2</b></p>  <p>Mating Cordset: RKM 40-*M</p>
<p><b>3</b></p>  <p>Mating Cordset: RKM 40-*M</p>	<p><b>4</b></p>  <p>Mating Cordset: RKM 40-*M</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current          ≥170 mA on 150 mA Load Current          ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)          ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 18 mm

### Fully Threaded Metal Barrels with Connector and AC/DC Outputs


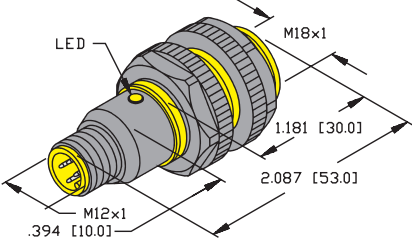
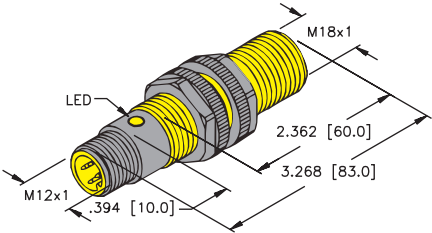
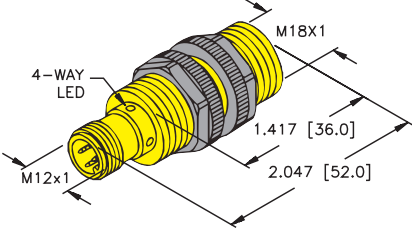
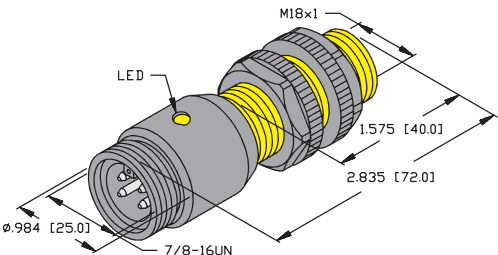
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi5-G18-AN6X-B1341</b> 46952		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
<b>Bi5-G18-AP6X-B1341</b> 46963		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
<b>Bi5-G18-AN6X-B1441</b> 46956		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	1	A4
<b>Bi5-G18-AP6X-B1441</b> 46967		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	2	A4
<b>Ni10-G18-AN6X-B1341/UL</b> 4695300		10	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	C	1	A4
<b>Ni10-G18-AP6X-B1341</b> 46964		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	C	2	A4
<b>Ni10-G18-AN6X-B1441</b> 46957		10	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	D	1	A4
<b>Ni10-G18-AP6X-B1441</b> 4696800		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	D	2	A4
<b>Ni10-G18-VN6X-B1441</b> 46991	Comp. Outputs	10	4-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	D	3	A4
<b>Ni10-G18-VP6X-B1441</b> 4699190	Comp. Outputs	10	4-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	D	4	A4

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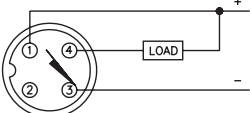
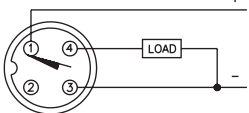
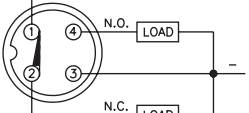
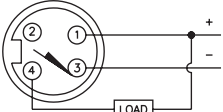
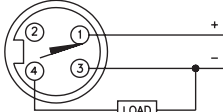
Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Threaded Plastic Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable and Nonembeddable, Partial Threading, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>18 mm - Embeddable and Nonembeddable, Partial Threading, M12 Eurofast Connection</p>	<p><b>C</b></p>  <p>18 mm - Embeddable and Nonembeddable, Partial Threading, M12 Eurofast Connection</p>
<p><b>D</b></p>  <p>18 mm - Embeddable and Nonembeddable, Full Threading, 7/8" Minifast Connection</p>	

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RKK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RKK 4.4T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 40-*M</p>	<p><b>5</b></p>  <p>Mating Cordset: RK 40-*M</p>	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	



## Inductive Barrel Sensors | 18 mm

### Threaded Plastic Barrels with Connector and DC Outputs


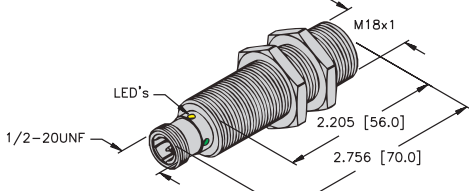
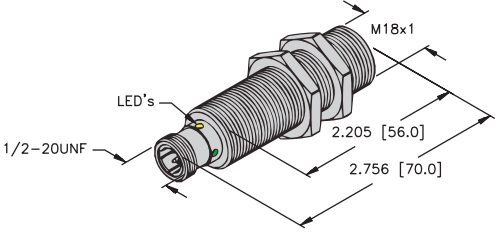
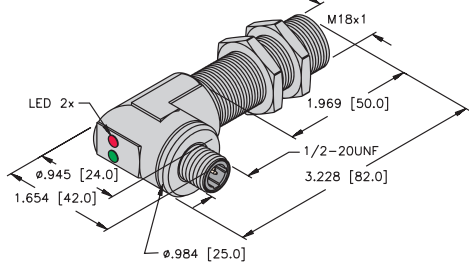
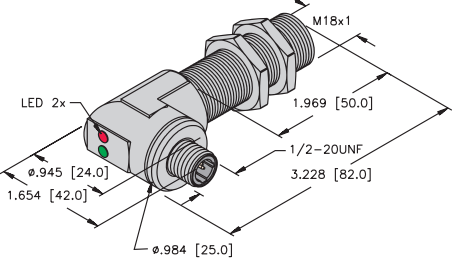
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi5U-S18-AN6X-H1141</b> 1635620	Uprox	5	3-wire DC NPN	10-30 VDC	2500	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	C	1	A4
<b>Bi5U-S18-AP6X-H1141</b> 1635600	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	C	2	A4
<b>Bi5-S18-AN6X-H1141</b> 46525		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A4
<b>Bi5-S18-AP6X-H1141</b> 46524		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	2	A4
<b>Bi5-S18-VP4X-H1141</b> 1513401	Comp. Outputs	5	4-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	B	3	A4
<b>Bi5-P18-AN6X-B2341</b> 46972		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	D	4	A4
<b>Bi5-P18-AP6X-B2341</b> 46973		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	D	5	A4
<b>Ni12U-S18-AN6X-H1141</b> 1645620	Uprox	12	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	C	1	A4
<b>Ni12U-S18-AP6X-H1141</b> 1645600	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	C	2	A4
<b>Ni10-P18-AN6X-B2341</b> 4697800		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	D	4	A4
<b>Ni10-P18-AP6X-B2341</b> 4697900		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	D	5	A4
<b>Ni8-S18-AN6X-H1141</b> 46527		8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A4
<b>Ni8-S18-AP6X-H1141</b> 46526		8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	2	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

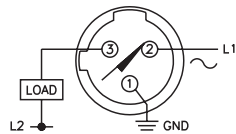
## Embeddable Fully Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, 1/2" Microfast Connection</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, 1/2" Microfast Connection, PTFE Coated</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, 1/2" Microfast Connection</p>
<p><b>D</b></p>  <p>18 mm - Embeddable, 1/2" Microfast Right Angle Connection, PTFE Coated</p>	

We reserve the right to make technical alterations without prior notice.

### Wiring Diagrams/Mating Cordsets

1



Mating Cordset: KB 3T-\*, KBE 3T-\*/S600

A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6	2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math> ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

# Inductive Barrel Sensors | 18 mm

## Embeddable Fully Threaded Metal Barrels with Connector and AC/DC Outputs


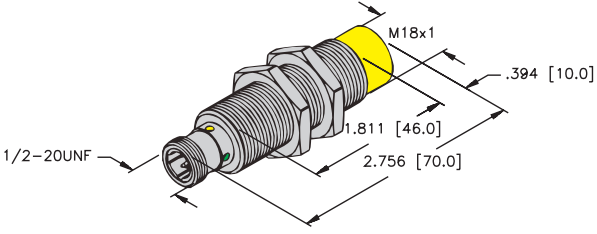
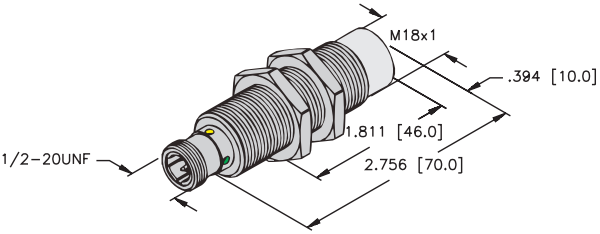
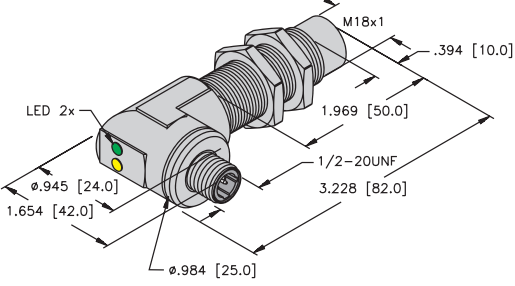
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi8-G18-ADZ30X2-B3331</b> 4209301	Extended Range	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	SS	PA 12	GN	RD	A	1	A5
<b>Bi5U-G18-ADZ30X2-B3331</b> 4281213	Uprox	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	A	1	A5
<b>Bi5U-GT18-ADZ30X2-B3331</b> 4281223	Uprox, PTFE	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	B	1	A5
<b>Bi5-G18-ADZ30X2-B3331</b> 4208092		5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
<b>Bi5-GT18-ADZ30X2-B3331</b> 4255491	PTFE	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
<b>Bi5-GT18-ADZ30X2-B3331/S34</b> 4255400	PTFE, WFI	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
<b>Bi5-GT18H-ADZ30X2-B3331/S34</b> 4255289	PTFE, WFI, Stoneface	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	SF	GN	RD	B	1	A5
<b>Bi5-GT18H-ADZ30X2-B3331/S34/S1589</b> 4255283	PTFE, WFI, Weldguard	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	B	1	A5
<b>Bi5-GT18-ADZ30X2-B3431/S34</b> 4255605	PTFE, WFI	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	D	1	A5
<b>Bi5-G18-AZ3X-B3331</b> 4372098		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
<b>Bi5-G18-AZ3X-B3431</b> 4372090		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	C	1	A6

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

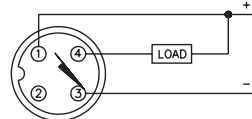
# Inductive Barrel Sensors | 18 mm

## Nonembeddable Fully Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Nonembeddable, 1/2" Microfast connection</p>
<p><b>B</b></p>  <p>18 mm - Nonembeddable, 1/2" Microfast connection, PTFE Coated</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, PTFE Coated, 1/2" Microfast Right Angle Connection</p>

### Wiring Diagrams/Mating Cordsets

1



Mating Cordset: KB 3T.\*

A5

### 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)

Line Frequency:	≥50... ≤60 Hz
Differential Travel (Hysteresis):	3-15% (5% typical)
Voltage Drop Across Conducting Sensor:	≤6.0 V
Trigger Current for Short Circuit Protection:	AC: ≥440 mA; DC: ≥330 mA AC: ≥120 mA; DC: ≥120 mA
Continuous Load Current:	AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA
Off-State (Leakage) Current:	≤1.7 mA (AC) ≤1.5 mA (DC)

Minimum Load Current:	≥3.0 mA
Inrush Current:	≤3 A (≤20 ms, max 5 Hz)
Power-On Effect:	Per IEC 947-5-2
Transient Protection:	Per EN 60947-5-2
Shock:	30 g, 11 ms
Vibration:	55 Hz, 1 mm Amplitude, in all 3 Planes
Repeatability:	≤2% of Rated Operating Distance

A6

### 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)

Line Frequency:	≥50... ≤60 Hz
Differential Travel (Hysteresis):	3-15% (5% typical)
Voltage Drop Across Conducting Sensor:	≤6.0 V
Continuous Load Current:	AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA
Off-State (Leakage) Current:	≤1.7 mA
Minimum Load Current:	≥3.0 mA

Inrush Current:	≤8 A (≤10ms max. 5 Hz) ≤1 A (≤10 ms max. 5 Hz) 12 mm ≤0.2 A (≤10 ms max. 0.2 Hz) 8 mm
Power-On Effect:	Per IEC 947-5-2
Transient Protection:	Per EN 60947-5-2
Shock:	30 g, 11 ms
Vibration:	55 Hz, 1 mm Amplitude, in all 3 Planes
Repeatability:	≤2% of Rated Operating Distance

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Fully Threaded Metal Barrels with Connector and AC/DC Outputs


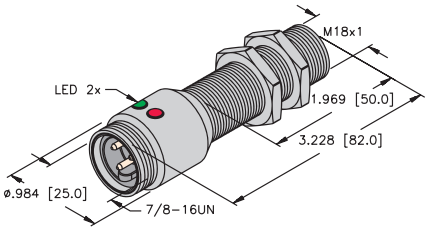
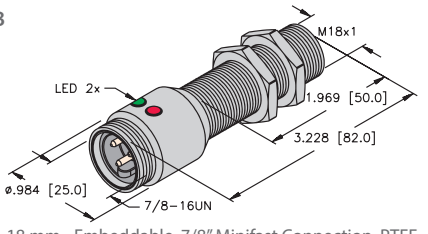
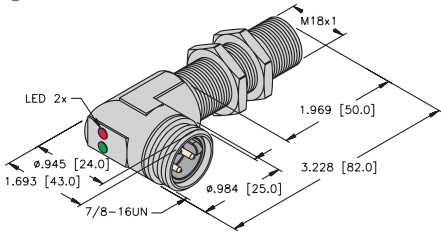
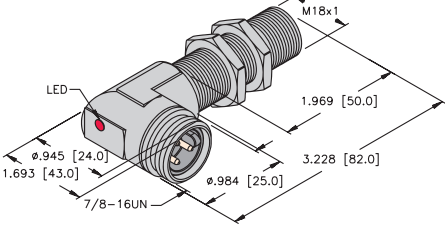
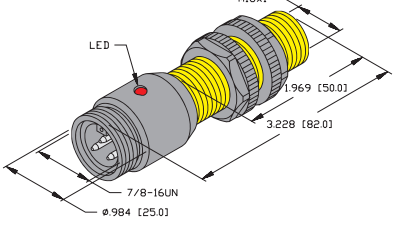
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni14-G18-ADZ30X2-B3331 4205403	Extended Range	14	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Ni12U-G18-ADZ30X2-B3331 4281413	Uprox	12	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	A	1	A5
Ni12U-GT18-ADZ30X2-B3331 4281423	Uprox, PTFE	12	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	B	1	A5
Ni10-G18-AZ3X-B3331 4372192		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Ni8-G18-ADZ30X2-B3331/S34 42091	WFI	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Ni8-GT18-ADZ30X2-B3331/S34 4209101	PTFE, WFI	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
Ni8-GT18-ADZ30X2-B3431/S34 4209201	PTFE, WFI	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	C	1	A5
Ni8-G18-AZ3X-B3331 4350588		8	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Fully Threaded Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>18 mm - Embeddable, 7/8" Minifast Connection</p>	<p><b>B</b></p>  <p>18 mm - Embeddable, 7/8" Minifast Connection, PTFE Coated</p>
<p><b>C</b></p>  <p>18 mm - Embeddable, 7/8" Minifast Right Angle Connection</p>	<p><b>D</b></p>  <p>18 mm - Embeddable, 7/8" Minifast Right Angle Connection, PTFE Coated</p>	<p><b>E</b></p>  <p>18 mm - Embeddable and Nonembeddable, Full Threading, 7/8" Minifast Connection</p>

### Wiring Diagrams/Mating Cordsets

<p><b>1</b></p>  <p>Mating Cordset: RKM 30-*M; RKM 311-*M/S600</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 30-*M</p>
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A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6	2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Embeddable Fully Threaded Barrels with Connector and AC/DC Outputs


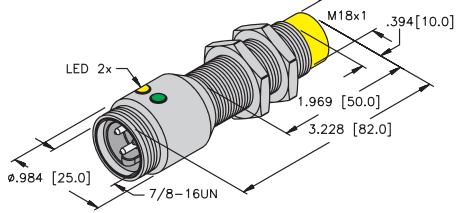
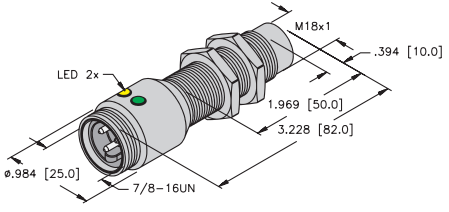
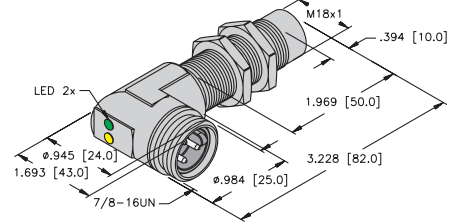
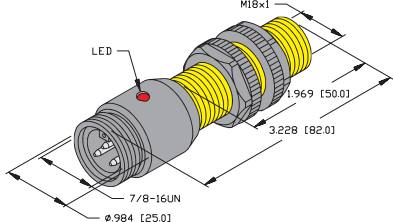
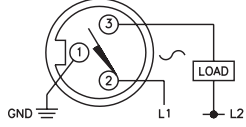
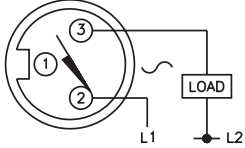
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi5U-G18-ADZ30X2-B1331 4281212	Uprox	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	A	1	A5
Bi5U-GT18-ADZ30X2-B1331 4281222	Uprox, PTFE	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	B	1	A5
Bi5-G18-ADZ30X2-B1331 42080		5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Bi5-GT18-ADZ30X2-B1331 4255290	PTFE	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
Bi5-GT18-ADZ30X2-B1331/S34 4255200	PTFE, WFI	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
Bi5-GT18H-ADZ30X2-B1331/S34/S1589 4255284	PTFE, WFI, Weldguard	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	B	1	A5
Bi5-GT18-ADZ30X2-B1431 4255690	PTFE	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	D	1	A5
Bi5-GT18-ADZ30X2-B1431/S34 4255600	PTFE, WFI	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	D	1	A5
Bi5-GT18H-ADZ30X2-B1431/S34/S1589 4255285	PTFE, Weldguard	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	D	1	A5
Bi5-G18-AZ3X-B1331 43720		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Bi5-G18-AZ3X-B1431 43724		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	C	1	A6
Bi5-P18-AZ3X-B2331 43748		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	E	2	A6

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Fully Threaded Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Nonembeddable 7/8" Minifast Connection</p>
<p><b>B</b></p>  <p>18 mm - Nonembeddable 7/8" Minifast Connection, PTFE Coated</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, PTFE Coated 7/8" Minifast Right Angle Connection</p>
<p><b>D</b></p>  <p>18 mm - Embeddable and Nonembeddable, Full Threading, 7/8" Minifast Connection</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RKM 30-*M; RKM 311-*M/S600</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 30-*M</p>
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 18 mm

## Nonembeddable Fully Threaded Barrels with Connector and AC/DC Outputs


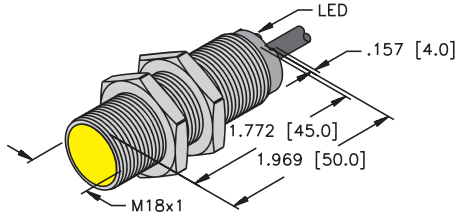
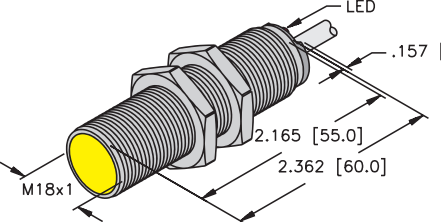
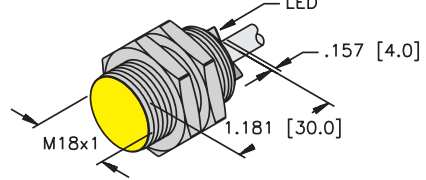
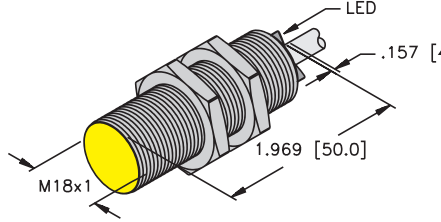
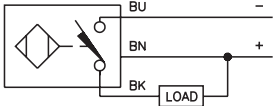
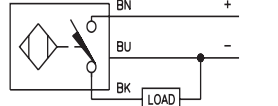
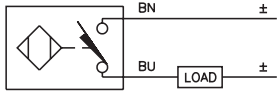
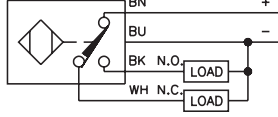
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni14-G18-ADZ30X2-B1331 4205407	Extended Range	14	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Ni14-GT18H-ADZ30X2-B1331/S1589 4205484	PTFE, Weldguard	14	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	B	1	A5
Ni12U-G18-ADZ30X2-B1331 4281412	Uprox	12	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	A	1	A5
Ni12U-GT18-ADZ30X2-B1331 4281422	Uprox	12	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	B	1	A5
Ni10-G18-AZ3X-B1331 43721		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Ni10-P18-AZ3X-B2331 43752		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	D	2	A6
Ni8-GT18-ADZ30X2-B1331/S34 4208801	PTFE, WFI	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
Ni8-GT18H-ADZ30X2-B1331/S34/S1589 4208890	PTFE, Weldguard	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	B	1	A5
Ni8-GT18-ADZ30X2-B1431/S34 4208901	PTFE, WFI	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	C	1	A5
Ni8-GT18H-ADZ30X2-B1431/S34/S1589 4208990	Weldguard	8	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	C	1	A5

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>18 mm - Embeddable, Potted-in Cable</p>
<p>B</p>  <p>18 mm - Embeddable, Potted-In Cable, Extended Length Barrel, Partial Threading</p>	<p>C</p>  <p>18 mm - Embeddable, Full Threading, Potted-In Cable</p>
<p>D</p>  <p>18 mm - Embeddable, Full Threading, Potted-In Cable</p>	
Wiring Diagrams/Mating Cordsets	
<p>1</p> 	<p>2</p> 
<p>3</p> 	<p>4</p> 
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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# Inductive Barrel Sensors | 18 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs


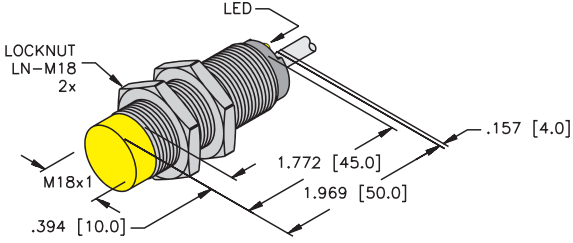
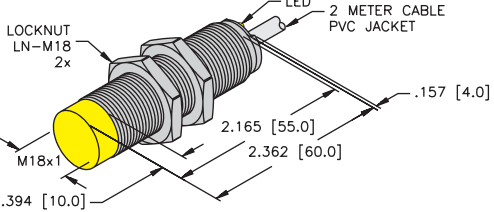
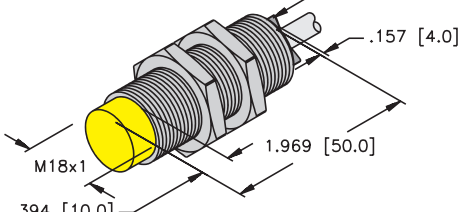
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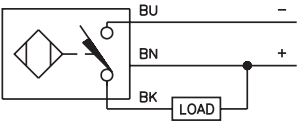
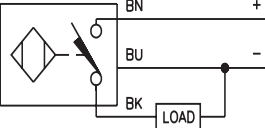
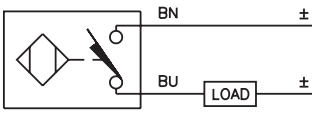
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi10U-M18-AN6X 1644845	Uprox3	10	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	1	A4
Bi10U-M18-AP6X 1644840	Uprox3	10	3-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Bi10U-M18-VP6X 1644842	Uprox3, Comp. Outputs	10	4-wire DC PNP	10-30 VDC	1500	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	4	A4
Bi8U-M18-AN6X 1644736	Uprox+	8	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	1	A4
Bi8U-M18-AP6X 1644733	Uprox+	8	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Bi8-M18-AN6X 4615130	Extended Range	8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	A	1	A4
Bi8-M18-AP6X 4615030	Extended Range	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi8-M18-VN4X 4590703	Comp. Outputs	8	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi8-M18-VP4X 4590704	Comp. Outputs	8	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	A	4	A4
Bi8-G18-AN6X 4616101	Extended Range	8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	D	1	A4
Bi8-G18-AP6X 4615088		8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	D	2	A4
Bi5U-M18-AN6X 1635120	Uprox	5	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	1	A4
Bi5U-EM18-AP6X 1635300	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	2M/PVC	A	2	A4
Bi5U-M18-AP6X 1635100	Uprox	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	2	A4
Bi5U-M18E-AP6X 1635101	Uprox	5	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	B	1	A4
Bi5-G18-AN6X 4641500		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	1	A4
Bi5-G18-AN7X 4740500	TTL Compatible	5	3-wire DC NPN	10-30 VDC	1000	≤150	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	1	A4
Bi5-G18-AP6X 4641400		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	2	A4
Bi5-EG18-AN6X 4611101		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	D	1	A4
Bi5-EG18-AP6X 4611001		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/PVC	D	2	A4
Bi5-M18E-VP4X 1561190	Comp. Outputs	5	4-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	4	A4
Bi5-G18K-AN6X 46714	Short Barrel	5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	1	A4
Bi5-G18K-AP6X 46704	Short Barrel	5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	2	A4

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Nonembeddable, Potted-in Cable</p>
<p><b>B</b></p>  <p>18 mm - Nonembeddable, Extended Barrel Length, Partial Threading, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, Full Threading, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>		<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs


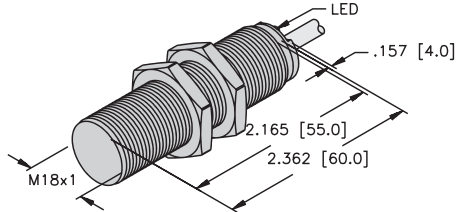
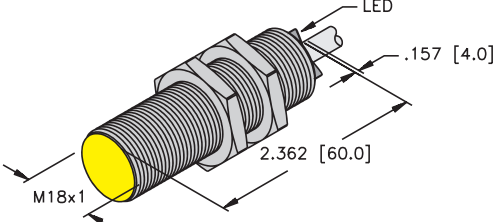
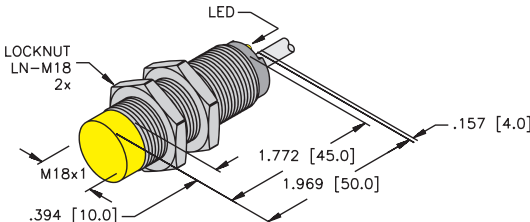
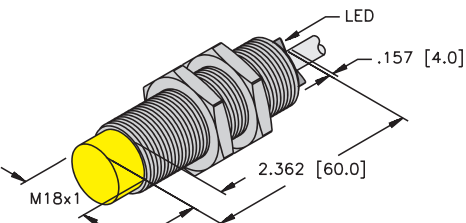
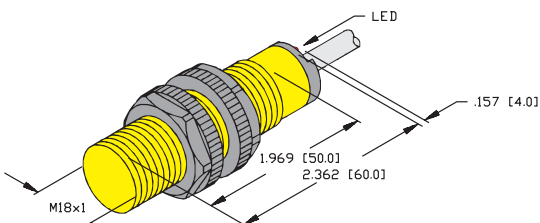
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni15U-M18-AN6X 1635334	Uprox+	15	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	1	A4
Ni15U-M18-AP6X 1635330	Uprox+	15	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Ni14-M18-AD4X 4417235	Extended Range	14	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A2
Ni14-M18-AN6X 4611411	Extended Range	14	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A4
Ni14-M18-AP6X 4611401	Extended Range	14	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Ni12U-M18-AN6X 1645120	Uprox	12	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	1	A4
Ni12U-M18-AP6X 1645100	Uprox	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	2	A4
Ni12U-M18E-AN6X 1645110	Uprox	12	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	B	1	A4
Ni12U-M18E-AP6X 1645106	Uprox	12	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	B	2	A4
Ni12U-EM18-AN6X 1645320	Uprox	12	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP67	SS	PBT	N/A	YE	2M/PVC	A	1	A4
Ni12U-EM18-AP6X 1645300	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP67	SS	PBT	N/A	YE	2M/PVC	A	2	A4
Ni10-G18-AN6X 4641700		10	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	1	A4
Ni10-G18-AN7X 4740700	TTL Compatible	10	3-wire DC NPN	10-30 VDC	1000	≤150	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	1	A4
Ni10-G18-AP6X 4641600		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	2	A4
Ni8-M18-AD4X 44112		8	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A2

We reserve the right to make technical alterations without prior notice.

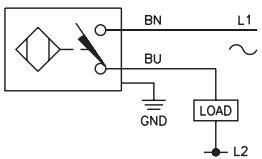
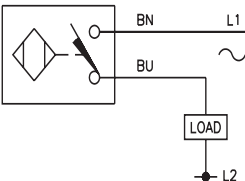
Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Threaded Barrels with Cable and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, Potted-In Cable, Partial Threading, PTFE Coated</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, Full Threading, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, Partial Threading, Potted-In Cable</p>
<p><b>D</b></p>  <p>18 mm - Nonembeddable, Full Threading, Potted-In Cable</p>	<p><b>E</b></p>  <p>18 mm - Embeddable and Nonembeddable, Partial Threading, Potted-In Cable</p>

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math> ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

## Inductive Barrel Sensors | 18 mm

### Threaded Barrels with Cable and AC/DC Outputs


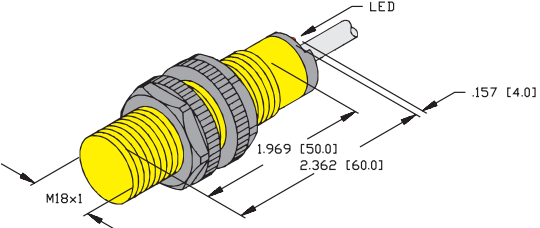
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi5U-MT18-ADZ30X2 4209410	Uprox	5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	2M/PVC	A	1	A5
Bi5-G18-ADZ30X2 42120		5	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	2M/PVC	B	1	A5
Bi5-G18-AZ3X 4330400		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	B	1	A6
Bi5-G18-AZ3X2 1374195		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	YE	2M/PVC	B	1	A6
Bi5-EG18-AZ3X 4611190		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	SS	PA 12	N/A	RD	2M/PVC	B	1	A6
Bi5-S18-AZ3X 43504		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	2M/PVC	E	2	A6
Ni14-G18-ADZ30X2 4205402	Extended Range	14	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	2M/PVC	D	1	A5
Ni12U-M18-ADZ30X2 4282410	Uprox	12	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	2M/PVC	C	1	A5
Ni8-S18-AZ3X 43505		8	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	2M/PVC	E	2	A6

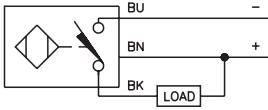
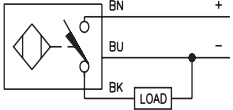
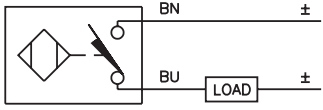
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Threaded Plastic Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="852 546 1453 567">18 mm - Embeddable and Nonembeddable, Partial Threading, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 636 121 657">1</p> 	<p data-bbox="544 636 560 657">2</p> 	<p data-bbox="1031 636 1047 657">3</p> 

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 863 535 884">Ripple: <math>\leq 10\%</math></p> <p data-bbox="215 890 638 911">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 919 698 940">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p data-bbox="483 949 657 970">Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="110 978 560 999">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="266 1008 555 1029">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="911 863 1235 884">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1000 890 1289 911">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="967 919 1305 940">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1081 949 1256 970">Shock: 30 g, 11 ms</p> <p data-bbox="1057 978 1471 999">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1008 1438 1029">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1083 535 1104">Ripple: <math>\leq 10\%</math></p> <p data-bbox="215 1110 638 1131">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 1140 540 1161">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="110 1169 763 1190">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p data-bbox="232 1199 763 1220"><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p data-bbox="232 1228 763 1249"><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="232 1257 555 1278">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="318 1287 677 1308">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p data-bbox="483 1316 695 1337"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="889 1083 1218 1104">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1000 1110 1284 1131">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="914 1140 1271 1161">Reverse Polarity Protection: Incorporated</p> <p data-bbox="954 1169 1271 1190">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1199 1300 1220">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="984 1228 1224 1249">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1257 1256 1278">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1287 1459 1308">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1316 1425 1337">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

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# Inductive Barrel Sensors | 18 mm

## Threaded Plastic Barrels with Cable and DC Outputs


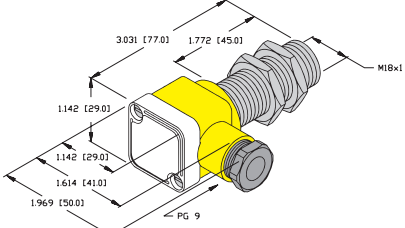
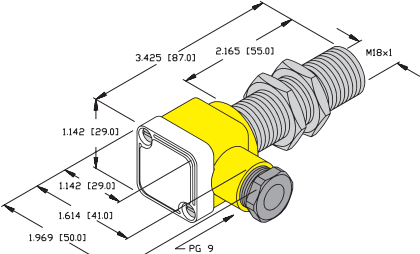
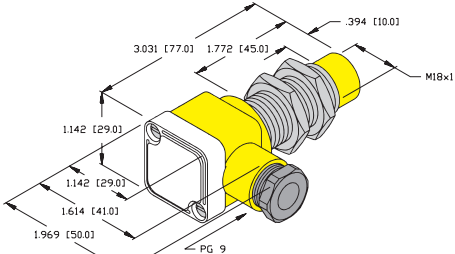
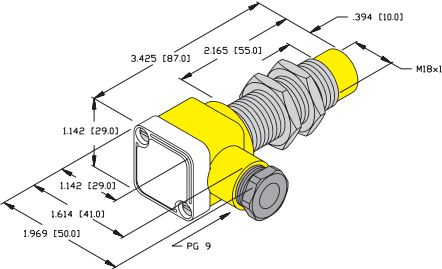
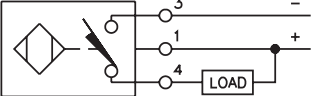
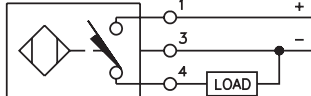
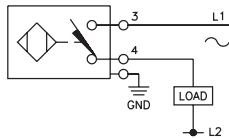
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi5U-S18-AP6X 1635500	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	A	2	A4
Bi5-S18-AD4X 44560		5	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	3	A2
Bi5-S18-AN6X 46561		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A4
Bi5-S18-AN7X 1714000	TTL Compatible	5	3-wire DC NPN	10-30 VDC	1000	≤150	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A4
Bi5-S18-AN7X/S100 17734	High Temp. 100 °C	5	3-wire DC NPN	10-30 VDC	1000	≤150	-25 to +100	IP67	PA 12	IRPA	N/A	YE	A	1	A4
Bi5-S18-AP6X 46560		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	2	A4
Bi5-S18-AP7X/S100 17542	TTL Compatible, High Temp. 100 °C	5	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +100	IP67	PA 12	IRPA	N/A	YE	A	2	A4
Ni12U-S18-AN6X 1645520	Uprox	12	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	A	1	A4
Ni12U-S18-AP6X 1645500	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PBT	PBT	N/A	YE	A	2	A4
Ni8-S18-AD4X 44562		8	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	3	A2
Ni8-S18-AN6X 46563		8	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A4
Ni8-S18-AP6X 46562		8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	2	A4
Ni8-S18-AP7X/S100 1749850	TTL Compatible, High Temp. 100 °C	8	3-wire DC PNP	10-30 VDC	500	≤150	-25 to +100	IP67	PA 12	IRPA	N/A	YE	A	2	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Threaded Metal Barrels with Terminal Chamber and AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>18 mm - Embeddable, Terminal Chamber</p>	
<p><b>B</b></p>  <p>18 mm - Embeddable, Terminal Chamber</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable, Terminal Chamber</p>	
<p><b>D</b></p>  <p>18 mm - Nonembeddable, Terminal Chamber</p>		
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection:                      ≥220 mA on 200 mA Load Current                      ≥170 mA on 150 mA Load Current                      ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)                      ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)		
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA                      AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Inrush Current: ≤8 A (≤10ms max. 5 Hz)                      ≤1 A (≤10 ms max. 5 Hz) 12 mm                      ≤0.2 A (≤10 ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

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# Inductive Barrel Sensors | 18 mm

## Threaded Metal Barrels with Terminal Chamber and AC/DC Outputs


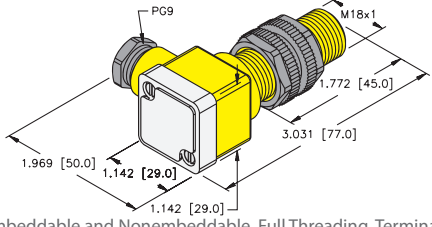
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi5U-EG18SK-AP6X 1635400	Uprox	5	3-wire DC PNP	10-30 VDC	2500	≤200	-30 to +85	IP68	SS	PA 12	N/A	YE	A	2	A4
Bi5-G18SK-AN6X2 4642500		5	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	A	1	A4
Bi5-G18SK-AP6X2 4642028		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	A	2	A4
Bi5-G18SK-AZ3X2 4331400		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤500	-25 to +70	IP67	CPB	PA 12	GN	RD	B	3	A6
Ni10-G18SK-AN6X2 4642700		10	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	C	1	A4
Ni10-G18SK-AP6X2 4642600		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	C	2	A4
Ni10-G18SK-AZ3X2 4331500		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	D	3	A6

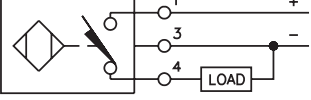
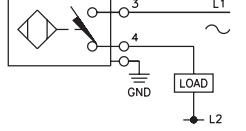
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 18 mm

## Threaded Metal Barrels with Terminal Chamber and AC/DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>18 mm - Embeddable and Nonembeddable, Full Threading, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets	
<p>1</p> 	<p>2</p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current:            No-Load Current: <math>\leq 0.1\text{ mA}</math>  <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>            AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 18 mm

## Threaded Metal Barrels with Terminal Chamber and AC/DC Outputs


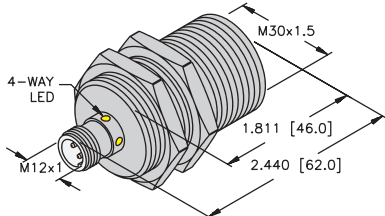
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi5U-P18SK-AP6X 1635700	Uprox	5	3-wire DC PNP	10-30 VDC	3000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	A	1	A4
Bi5-P18SK-AP6X2 4656900		5	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	A	1	A4
Bi5-P18SK-AZ3X2 4351400		5	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	GN	RD	A	2	A6
Ni12U-P18SK-AP6X 1645700	Uprox	12	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	A	1	A4
Ni10-P18SK-AZ3X2 4351500		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	GN	RD	A	2	A6
Ni10-P18SK-AP6X2 4657100		10	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	A	1	A4

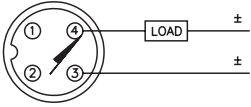
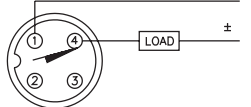
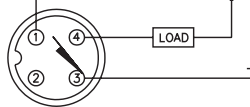
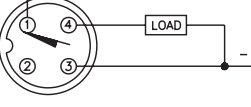
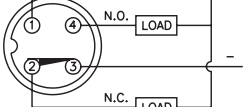
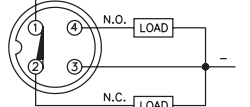
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>30 mm - Embeddable, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4.23T-*</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>
<p>4</p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p>5</p>  <p>Mating Cordset: RK 4.4T-*</p>	<p>6</p>  <p>Mating Cordset: RK 4.4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 30 mm

## Embeddable Threaded Metal Barrels with Connector and DC Outputs


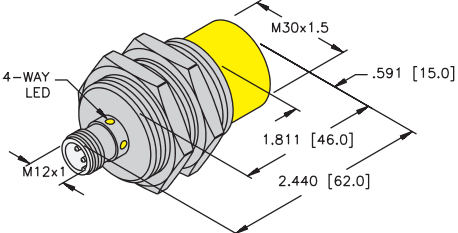
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi20U-M30-AN6X-H1141 1644888	Uprox3	20	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	3	A4
Bi20U-M30-AP6X-H1141 1644880	Uprox3	20	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	A	4	A4
Bi15U-M30-AN6X-H1141 1636736	Uprox+	15	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	3	A4
Bi15U-M30-AP6X-H1141 1636732	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	4	A4
Bi15U-EM30-AP6X-H1141 1636733	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	4	A4
Bi15-M30-AN6X-H1141 4618600	Extended Range	15	3-wire DC NPN	10-30 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi15-EM30H-AN6X-H1141 4618692	Ext. Range, Stoneface	15	3-wire DC NPN	10-30 VDC	300	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	3	A4
Bi15-M30-AP6X-H1141 46185	Extended Range	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi15-EM30H-AP6X-H1141 4618592	Ext. Range, Stoneface	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	SS	SF	N/A	YE	A	4	A4
Bi15-EM30-AP6X-H1141/S1589 4618593	Weldguard	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	SS	WG	N/A	YE	A	4	A4
Bi15-M30-VN4X-H1141 4570711	Ext. Range, Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi15-M30-VP4X-H1141 4570710	Ext. Range, Comp. Outputs	15	4-wire DC PNP	10-65 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Bi12-M30-AD4X-H1141 4417041	Extended Range	12	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi10U-M30-AD4X-H1144 4405072	Uprox	10	2-wire DC	10-65 VDC	10	≤100	-25 to +70	IP68	CPB	LCP	N/A	YE	A	2	A2
Bi10U-M30-AN6X-H1141 1636150	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	3	A4
Bi10U-EM30-AN6X-H1141 1636350	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	3	A4
Bi10U-M30-AP6X-H1141 1636140	Uprox	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	4	A4
Bi10U-M30-AP6X2-H1141 1636145	Uprox	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	GN	YE	A	4	A4
Bi10U-EM30-AP6X-H1141 1636340	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	4	A4
Bi10U-M30-VP4X-H1141 1582253	Uprox, Comp. Outputs	10	4-wire DC PNP	10-65 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	6	A4
Bi10-M30-AD4X-H1141 44175		10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Bi10-M30-AN6X-H1141 46176		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Bi10-M30-AP6X-H1141 46175		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Bi10-M30-VN4X-H1141 15716	Comp. Outputs	10	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Bi10-M30-VP4X-H1141 15616	Comp. Outputs	10	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4

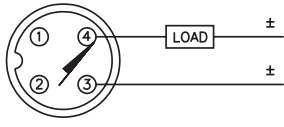
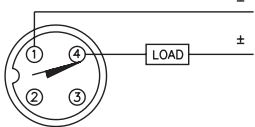
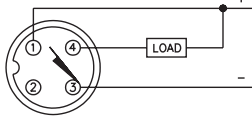
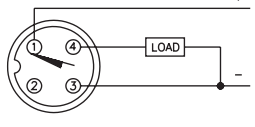
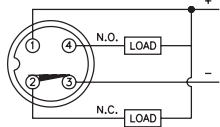
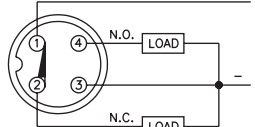
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="948 548 1354 569">30 mm - Nonembeddable, M12 Eurofast Connection</p>

Wiring Diagrams/Mating Cordsets	
<p data-bbox="103 638 120 659">1</p>  <p data-bbox="347 783 545 804">Mating Cordset: RK 4.2T-*</p>	<p data-bbox="808 638 824 659">2</p>  <p data-bbox="1045 783 1260 804">Mating Cordset: RK 4.23T-*</p>
<p data-bbox="103 825 120 846">3</p>  <p data-bbox="289 972 604 993">Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>	<p data-bbox="808 825 824 846">4</p>  <p data-bbox="993 972 1308 993">Mating Cordset: RK 4T-*; RKC 4T-*/S1587</p>
<p data-bbox="103 1012 120 1033">5</p>  <p data-bbox="347 1171 545 1192">Mating Cordset: RK 4.4T-*</p>	<p data-bbox="808 1012 824 1033">6</p>  <p data-bbox="1045 1171 1260 1192">Mating Cordset: RK 4.4T-*</p>

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 1270 539 1291">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1297 643 1318">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="136 1325 701 1346">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p data-bbox="331 1352 659 1373">Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="113 1379 565 1400">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="269 1407 565 1428">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="912 1270 1237 1291">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1000 1297 1292 1318">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="967 1325 1308 1346">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1081 1352 1260 1373">Shock: 30 g, 11 ms</p> <p data-bbox="1058 1379 1471 1400">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1026 1407 1438 1428">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1488 539 1509">Ripple: <math>\leq 10\%</math></p> <p data-bbox="217 1516 643 1537">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="136 1543 545 1564">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="113 1570 766 1591">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p data-bbox="185 1598 766 1619"><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p data-bbox="185 1625 766 1646"><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="237 1652 565 1673">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="321 1680 685 1701">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p data-bbox="331 1707 701 1728"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="889 1488 1221 1509">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1000 1516 1292 1537">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="912 1543 1276 1564">Reverse Polarity Protection: Incorporated</p> <p data-bbox="951 1570 1276 1591">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1598 1308 1619">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="984 1625 1227 1646">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1652 1260 1673">Shock: 30 g, 11 ms</p> <p data-bbox="1058 1680 1471 1701">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1026 1707 1438 1728">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 30 mm

## Nonembeddable Threaded Metal Barrels with Connector and DC Outputs


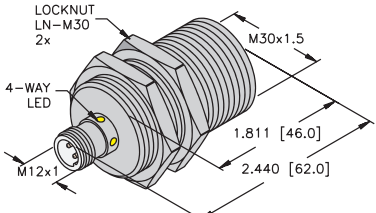
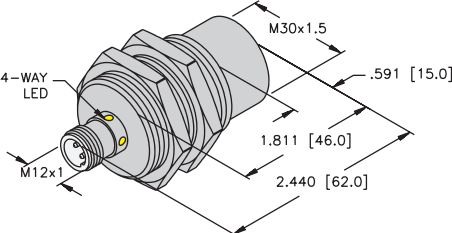
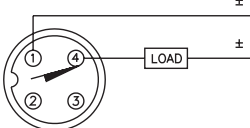
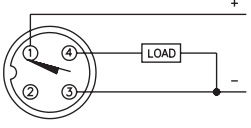
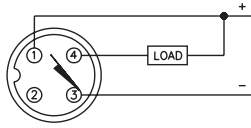
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni30U-M30-AN6X-H1141 1644635	Uprox+	30	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	3	A4
Ni30U-EM30-AN6X-H1141 1644636	Uprox+	30	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	3	A4
Ni30U-M30-AP6X-H1141 1644631	Uprox+	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	A	4	A4
Ni30U-EM30-AP6X-H1141 1644632	Uprox+	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	4	A4
Ni20U-M30-AN6X-H1141 1646150	Uprox	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	3	A4
Ni20U-M30-AN6X2-H1141 1646155	Uprox	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	GN	YE	A	3	A4
Ni20U-EM30-AN6X-H1141 1646350	Uprox	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	3	A4
Ni20U-EM30-AN6X2-H1141/S1589 1646191	Uprox, Weldguard	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	3	A4
Ni20U-M30-AP6X-H1141 1646140	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	4	A4
Ni20U-EM30-AP6X-H1141 1646340	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	4	A4
Ni20U-EM30-AP6X2-H1141 1646345	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	PBT	GN	YE	A	4	A4
Ni20U-EM30-AP6X2-H1141/S1589 1646490	Uprox, Weldguard	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	WG	GN	YE	A	4	A4
Ni20U-M30-VP4X-H1141 1582457	Uprox	20	4-wire DC PNP	10-65 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	A	6	A4
Ni20-M30-AD4X-H1141 4466141	Extended Range	20	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni20-M30-AD4X-H1144 4466192	Extended Range	20	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A2
Ni20-M30-AN6X-H1141 4670515	Extended Range	20	3-wire DC NPN	10-30 VDC	1500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni20-M30-AP6X-H1141 4670510	Extended Range	20	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni20-M30-VN4X-H1141 4590606	Ext. Range, Comp. Outputs	20	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni20-M30-VP4X-H1141 4590607	Ext. Range, Comp. Outputs	20	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4
Ni15-M30-AD4X-H1141 44177		15	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A2
Ni15-M30-AN6X-H1141 46178		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A4
Ni15-M30-AP6X-H1141 46177		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	4	A4
Ni15-M30-VN4X-H1141 1571510	Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	5	A4
Ni15-M30-VP4X-H1141 15617	Comp. Outputs	15	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	6	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded PTFE Coated Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection, PTFE Coated</p>	
<p><b>B</b></p>  <p>30 mm - Nonembeddable, M12 Eurofast Connection, PTFE Coated</p>		
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.23T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*, RKC 4T-*/S1587</p>
A2 2-wire DC - (AD, RD, AG)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 30 mm

## Threaded PTFE Coated Metal Barrels with Connector and DC Outputs


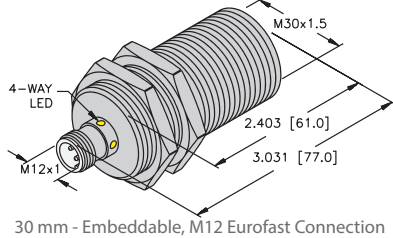
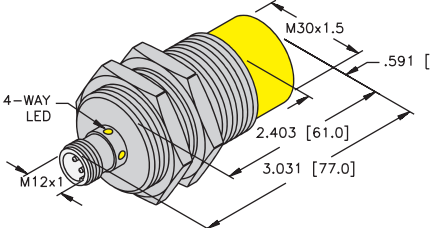
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi20U-MT30-AN6X-H1141 1644889	Uprox3, PTFE	20	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	TC	TC	N/A	YE	A	3	A4
Bi20U-MT30-AP6X-H1141 1644881	Uprox3, PTFE	20	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	TC	TC	N/A	YE	A	2	A4
Bi15U-MT30-AP6X-H1141 1636734	Uprox+, PTFE	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	TC	N/A	YE	A	2	A4
Bi15U-MT30-AP6X2-H1141 1644741	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	TC	GN	YE	A	2	A4
Bi12-MT30H-AD4X-H1144 4417095	PTFE, Stoneface	12	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	TC	SF	N/A	YE	A	1	A2
Bi10U-MT30-AN6X-H1141 1636250	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	3	A4
Bi10U-MT30-AP6X-H1141 1636240	Uprox, PTFE	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	A	2	A4
Bi10U-MT30-AP6X2-H1141 1636245	Uprox, PTFE	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	TC	GN	YE	A	2	A4
Bi10U-MT30H-AP6X2-H1141 1636220	Uprox, PTFE, Stoneface	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	SF	GN	YE	A	2	A4
Bi10U-MT30-AP6X2-H1141/S1589 1636291	Uprox, PTFE, Weldguard	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	WG	GN	YE	A	2	A4
Ni30U-MT30-AN6X-H1141 1644637	Uprox+, PTFE	30	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	TC	N/A	YE	B	3	A4
Ni30U-MT30-AP6X-H1141 1646633	Uprox+, PTFE	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	TC	N/A	YE	B	2	A4
Ni30U-MT30-AP6X2-H1141 1646635	Uprox+, PTFE	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	TC	GN	YE	B	2	A4
Ni30U-MT30-AP6X-H1141/S1589 16466331	Uprox+, PTFE, Weldguard	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	WG	N/A	YE	B	2	A4
Ni30U-MT30-AP6X2-H1141/S1589 16466351	Uprox+, PTFE, Weldguard	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	TC	WG	GN	YE	B	2	A4
Ni20U-MT30-AP6X-H1141 1646240	Uprox, PTFE	20	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	TC	N/A	YE	B	2	A4
Ni20U-MT30-AP6X2-H1141 1646245	Uprox, PTFE	20	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	TC	GN	YE	B	2	A4
Ni20U-MT30-AP6X2-H1141/S1589 1646291	Uprox, Weldguard	20	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	TC	WG	GN	YE	B	2	A4

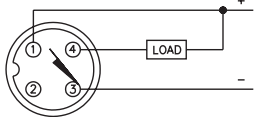
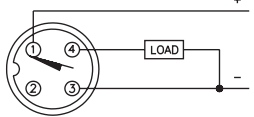
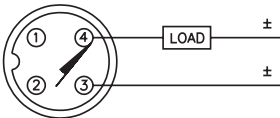
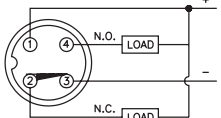
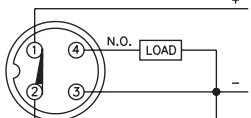
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p> 
<p>B</p> 	

Wiring Diagrams/Mating Cordsets	
<p>1</p>  <p>Mating Cordset: RK 4T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4.23T-*</p>
<p>3</p>  <p>Mating Cordset: RK 4.2T-*</p>	<p>4</p>  <p>Mating Cordset: RK 4.4T-*</p>
<p>5</p>  <p>Mating Cordset: RK 4.4T-*</p>	

A2 2-wire DC - (AD, RD, AG)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) &lt;5.0 V Polarized (AG) ≤4.2 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

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## Inductive Barrel Sensors | 30 mm

### Threaded Metal Barrels with Connector and DC Outputs


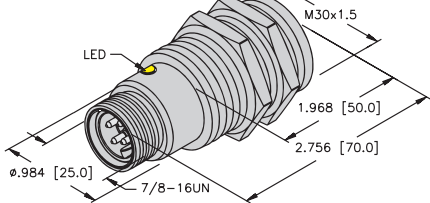
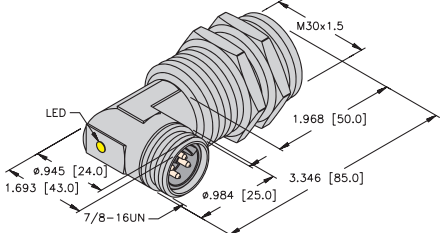
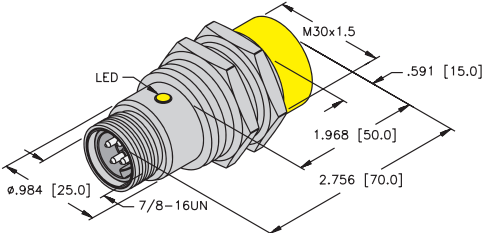
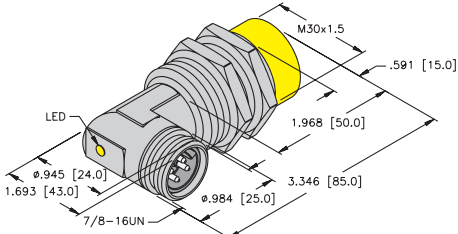
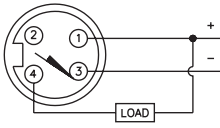
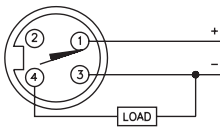
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15-M30E-AN6X-H1141 4618516	Extended Range	15	3-wire DC NPN	10-30 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi15-M30E-AP6X-H1141 4618590	Extended Range	15	3-wire DC PNP	10-30 VDC	300	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi10U-EM30E-AP6X-H1141 1636322	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	A	2	A4
Bi10U-EM30HE-AP6X2-H1141 1636415	Uprox, Stoneface	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	SF	GN	YE	A	2	A4
Bi10-M30E-AD4X-H1141 4417501		10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	3	A2
Ni15-M30E-AD4X-H1141 4417790		15	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	3	A2
Ni15-M30E-VN4X-H1141 1571590	Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	4	A4
Ni15-M30E-VP4X-H1141 1561790	Comp. Outputs	15	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	5	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Metal Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Embeddable, 7/8" Minifast Connection</p>
<p><b>B</b></p>  <p>30 mm - Embeddable, 7/8" Minifast Right Angle Connection</p>	<p><b>C</b></p>  <p>30 mm - Nonembeddable, 7/8" Minifast Connection</p>
<p><b>D</b></p>  <p>30 mm - Nonembeddable, Right Angle 7/8" Minifast Connection</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RKM 40-*M</p>	<p><b>2</b></p>  <p>Mating Cordset: RKM 40-*M</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current          ≥170 mA on 150 mA Load Current          ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)          ≤20 mA (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

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## Inductive Barrel Sensors | 30 mm

### Threaded Metal Barrels with Connector and DC Outputs


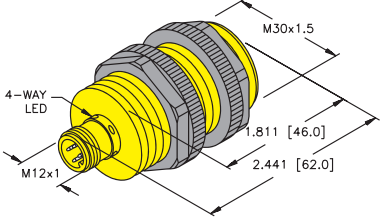
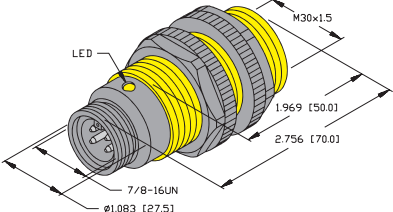
Part Number/ ID Number	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi10-G30-AN6X-B1141 46954	10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	1	A4
Bi10-G30-AP6X-B1141 46965	10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	A	2	A4
Bi10-G30-AN6X-B1441 46958	10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	1	A4
Bi10-G30-AP6X-B1441 46969	10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	B	2	A4
Ni15-G30-AN6X-B1141 46955	15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	C	1	A4
Ni15-G30-AP6X-B1141 46966	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	C	2	A4
Ni15-G30-AN6X-B1441 4695590	15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	D	1	A4
Ni15-G30-AP6X-B1441 46970	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	D	2	A4

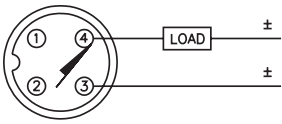
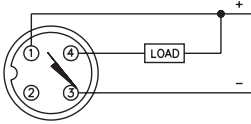
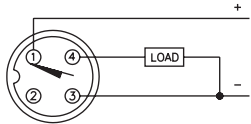
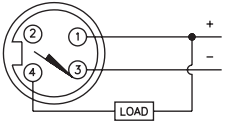
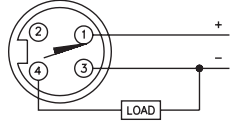
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Plastic Barrels with Connector and DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Embeddable/Nonembeddable, Partial Threading, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>30 mm - Embeddable/Nonembeddable, Full Threading, 7/8" Minifast Connection</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RKK 4.2T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RKK 4T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 40-*M</p>	<p><b>5</b></p>  <p>Mating Cordset: RK 40-*M</p>	

A2 2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 30 mm

## Threaded Plastic Barrels with Connector and DC Outputs


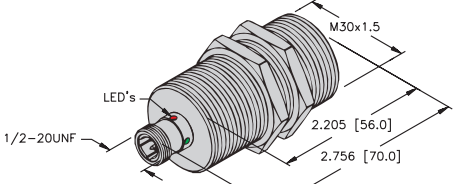
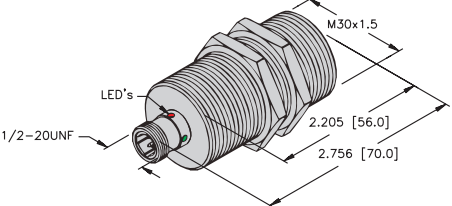
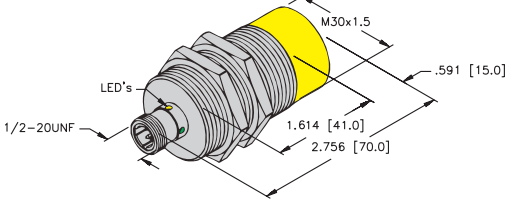
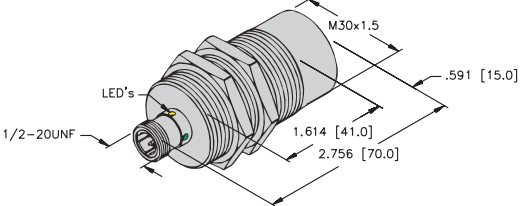
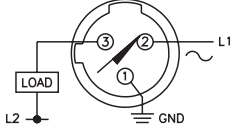
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi10U-S30-AN6X-H1141 1636620	Uprox	10	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	A	2	A4
Bi10U-S30-AP6X-H1141 1636600	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	A	3	A4
Bi10-S30-AD4X-H1141 4458000		10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A2
Bi10-S30-AN6X-H1141 46581		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	2	A4
Bi10-S30-AP6X-H1141 46580		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	3	A4
Bi10-P30-AN6X-B2141 46974		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	B	4	A4
Bi10-P30-AP6X-B2141 46975		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	B	5	A4
Ni20U-S30-AN6X-H1141 1646620	Uprox	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	A	2	A4
Ni20U-S30-AP6X-H1141 1646600	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	A	3	A4
Ni15-S30-AD4X-H1141 44582		15	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	1	A2
Ni15-S30-AN6X-H1141 46583		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	2	A4
Ni15-P30-AN6X-B2141 46976		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	B	4	A4
Ni15-S30-AP6X-H1141 46582		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	A	3	A4
Ni15-P30-AP6X-B2141 46977		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	B	5	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Embeddable, 1/2" Microfast Connection</p>
<p><b>B</b></p>  <p>30 mm - Embeddable, 1/2" Microfast Connection, PTFE Coated</p>	<p><b>C</b></p>  <p>30 mm - Nonembeddable, 1/2" Microfast Connection</p>
<p><b>D</b></p>  <p>30 mm - Nonembeddable, 1/2" Microfast Connection, PTFE Coated</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: KB 3T-*, KBE 3T-*/S600</p>	
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 30 mm

### Threaded Metal Barrels with Connector and AC/DC Outputs


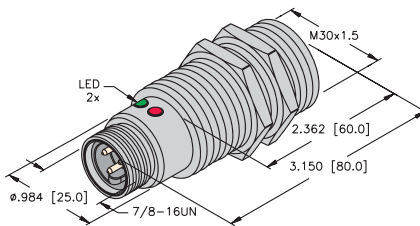
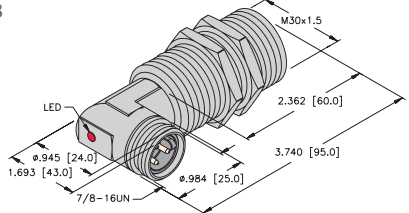
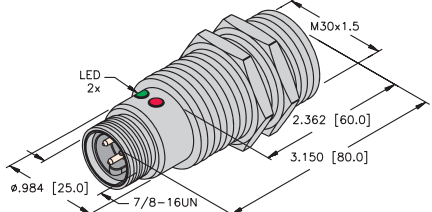
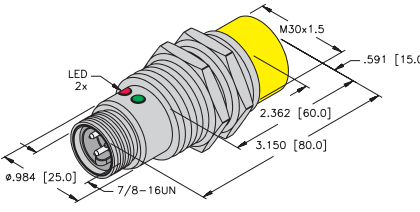
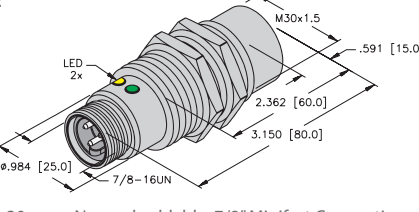
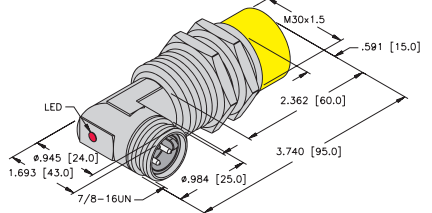
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15-G30-ADZ30X2-B3131 4207201	Extended Range	15	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Bi15-EG30H-ADZ30X2-B3131 4207284	Ext. Range, Stoneface	15	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	SS	SF	GN	RD	A	1	A5
Bi10U-G30-ADZ30X2-B3131 4281613	Uprox	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	A	1	A5
Bi10U-GT30-ADZ30X2-B3131 4281623	Uprox, PTFE	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	B	1	A5
Bi10-G30-ADZ30X2-B3131 4207591		10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Bi10-GT30-ADZ30X2-B3131/S34 4256203	PTFE, WFI	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	B	1	A5
Bi10-GT30H-ADZ30X2-B3131/S34 4256094	WFI, Stoneface	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	SF	GN	RD	B	1	A5
Bi10-G30-AZ3X-B3131 4372298		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Ni20U-G30-ADZ30X2-B3131 4281813	Uprox	20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	C	1	A5
Ni20U-GT30-ADZ30X2-B3131 4281823	Uprox, PTFE	20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	D	1	A5
Ni20-G30-ADZ30X2-B3131 4205406	Extended Range	20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	C	1	A5
Ni15-G30-AZ3X-B3131 1306090		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	C	1	A6

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

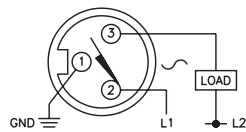
## Threaded Metal Barrels with Connector and AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>30 mm - Embeddable, 7/8" Minifast Connection</p>	<p><b>B</b></p>  <p>30 mm - Embeddable, 7/8" Minifast Right Angle Connection</p>
<p><b>C</b></p>  <p>30 mm - Embeddable, 7/8" Minifast Connection, PTFE Coated</p>	<p><b>D</b></p>  <p>30 mm - Nonembeddable, 7/8" Minifast Connection</p>	<p><b>E</b></p>  <p>30 mm - Nonembeddable, 7/8" Minifast Connection, PTFE Coated</p>
<p><b>F</b></p>  <p>30 mm - Nonembeddable, 7/8" Minifast Right Angle Connection</p>		

We reserve the right to make technical alterations without prior notice.

### Wiring Diagrams/Mating Cordsets

1



Mating Cordset: RKM 30-\*M; RKM 311-\*M/S600

A5	2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC) <math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6	2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz) <math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm <math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

## Inductive Barrel Sensors | 30 mm

### Threaded Metal Barrels with Connector and AC/DC Outputs


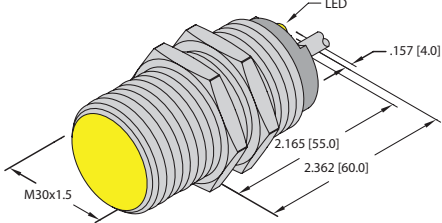
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi15-G30-ADZ30X2-B1131 4207202	Extended Range	15	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Bi15-EG30H-ADZ30X2-B1131 4207292	Ext. Range, Stoneface	15	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	SS	SF	GN	RD	A	1	A5
Bi10U-G30-ADZ30X2-B1131 4281612	Uprox	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	A	1	A5
Bi10-GT30-ADZ30X2-B1131/S34/S1589 4255280	PTFE, WFI, Weldguard	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	WG	GN	RD	C	1	A5
Bi10-G30-ADZ30X2-B1131 42075		10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	1	A5
Bi10-GT30-ADZ30X2-B1131/S34 4256200	PTFE, WFI	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	C	1	A5
Bi10-GT30-ADZ30X2-B1131 4256290	PTFE	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	C	1	A5
Bi10-G30-AZ3X-B1131 43722		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	A	1	A6
Bi10-G30-AZ3X-B1431 43726		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	B	1	A6
Bi10U-GT30-ADZ30X2-B1131 4281622	Uprox, PTFE	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	C	1	A5
Ni20U-G30-ADZ30X2-B1131 4281812	Uprox	20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	CPB	PBT	GN	YE	D	1	A5
Ni20U-GT30-ADZ30X2-B1131 4281822	Uprox	20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	10	≤400/300	-30 to +85	IP67	TC	TC	GN	YE	E	1	A5
Ni20-G30-ADZ30X2-B1131 4205405	Extended Range	20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	D	1	A5
Ni15-G30-AZ3X-B1131 43723		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	D	1	A6
Ni15-G30-AZ3X-B1431 4372700		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	F	1	A6

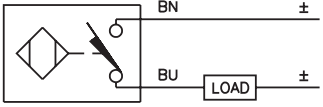
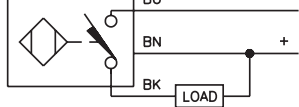
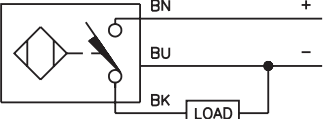
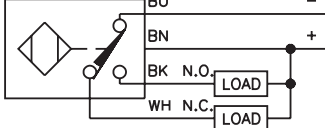
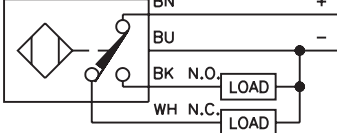
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="1003 546 1299 567">30 mm - Embeddable, Potted-in Cable</p>

Wiring Diagrams/Mating Cordsets	
<p data-bbox="105 634 121 655">1</p> 	<p data-bbox="808 634 824 655">2</p> 
<p data-bbox="105 793 121 814">3</p> 	<p data-bbox="808 793 824 814">4</p> 
<p data-bbox="105 953 121 974">5</p> 	

A2	2-wire DC - (AD, RD, AG)	
<p data-bbox="402 1165 535 1186">Ripple: <math>\leq 10\%</math></p> <p data-bbox="214 1197 636 1218">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="133 1228 698 1249">Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p data-bbox="263 1260 657 1281">Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p data-bbox="110 1291 560 1312">Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p data-bbox="263 1323 560 1344">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p data-bbox="912 1165 1234 1186">Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p data-bbox="1003 1197 1291 1218">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="971 1228 1307 1249">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1084 1260 1258 1281">Shock: 30 g, 11 ms</p> <p data-bbox="1058 1291 1469 1312">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1026 1323 1437 1344">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	We reserve the right to make technical alterations without prior notice.
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1386 535 1407">Ripple: <math>\leq 10\%</math></p> <p data-bbox="214 1417 636 1438">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="133 1449 544 1470">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="110 1480 763 1501">Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p data-bbox="240 1512 763 1533"><math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p data-bbox="240 1543 763 1564"><math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="230 1575 560 1596">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="321 1606 673 1627">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p data-bbox="483 1638 690 1659"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p data-bbox="896 1386 1218 1407">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1003 1417 1291 1438">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="922 1449 1144 1470">Reverse Polarity Protection: Incorporated</p> <p data-bbox="961 1480 1274 1501">Wire-Break Protection: Incorporated</p> <p data-bbox="971 1512 1307 1533">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="993 1543 1226 1564">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1084 1575 1258 1596">Shock: 30 g, 11 ms</p> <p data-bbox="1058 1606 1469 1627">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1026 1638 1437 1659">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 30 mm

## Embeddable Threaded Metal Barrels with Cable and DC Outputs


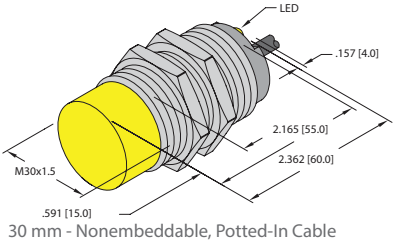
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi20U-M30-AN6X 1644890	Uprox3	20	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Bi20U-M30-AP6X 1644886	Uprox3	20	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP68	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Bi15U-M30-AN6X 1636735	Uprox+	15	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Bi15U-M30-AP6X 1636731	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Bi15U-EM30-AP6X 1636741	Uprox+	15	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	2M/PVC	A	3	A4
Bi15-M30-AN6X 4618620	Extended Range	15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi15-M30-AP6X 4618530	Extended Range	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi15-M30-VN4X 4570712	Ext. Range, Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Bi15-M30-VP4X 4570713	Ext. Range, Comp. Outputs	15	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4
Bi12-M30-AD4X 4417035	Extended Range	12	2-wire DC	10-65 VDC	400	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Bi10U-M30-AD4X 4405073	Uprox	10	2-wire DC	10-65 VDC	10	≤100	-30 to +85	IP68	TC	LCP	N/A	YE	2M/PVC	A	1	A2
Bi10U-M30-AN6X 1636120	Uprox	10	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	2	A4
Bi10U-EM30-AN6X 1636320	Uprox	10	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	2M/PVC	A	2	A4
Bi10U-M30-AP6X 1636100	Uprox	10	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	3	A4
Bi10U-EM30-AP6X 1636300	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	2M/PVC	A	3	A4
Bi10-M30-AD4X 44170		10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Bi10-M30-VN4X 15714	Comp. Outputs	10	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Bi10-M30-VP4X 15614	Comp. Outputs	10	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4

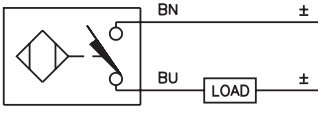
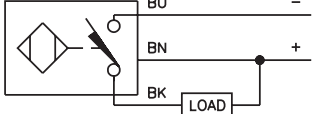
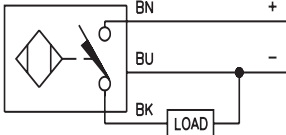
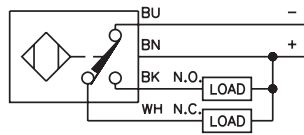
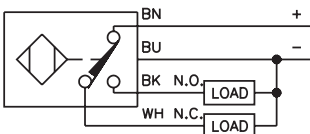
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p> 

Wiring Diagrams/Mating Cordsets	
<p>1</p> 	<p>2</p> 
<p>3</p> 	<p>4</p> 
<p>5</p> 	

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 30 mm

## Nonembeddable Threaded Metal Barrels with Cable and DC Outputs


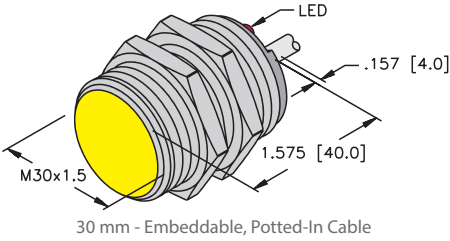
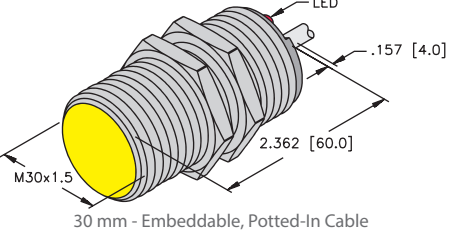
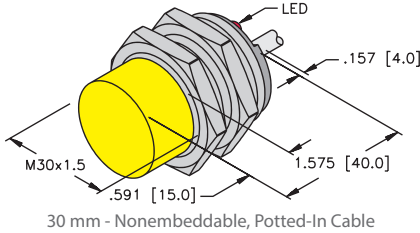
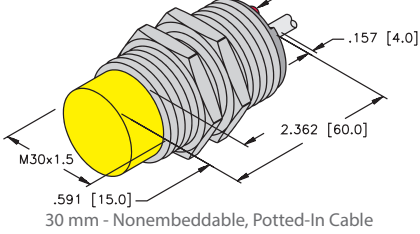
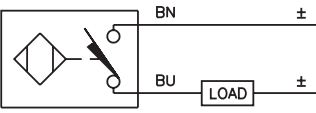
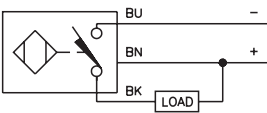
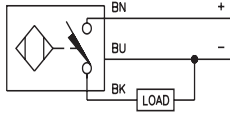
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni30U-M30-AN6X 1644634	Uprox+	30	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	2	A4
Ni30U-M30-AP6X 1646630	Uprox+	30	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP68	CPB	LCP	N/A	YE	2M/PVC	A	3	A4
Ni20U-M30-AN6X 1646120	Uprox	20	3-wire DC NPN	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	2	A4
Ni20U-EM30-AN6X 1646320	Uprox	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	2M/PVC	A	2	A4
Ni20U-M30-AP6X 1646100	Uprox	20	3-wire DC PNP	10-30 VDC	1000	≤200	-30 to +85	IP67	CPB	PBT	N/A	YE	2M/PVC	A	3	A4
Ni20U-EM30-AP6X 1646300	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	SS	PBT	N/A	YE	2M/PVC	A	3	A4
Ni20-M30-AD4X 4466135	Extended Range	20	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Ni20-M30-AN6X 4670516	Extended Range	20	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Ni20-M30-AP6X 4670511	Extended Range	20	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Ni20-M30-VN4X 4590604	Extended Range	20	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Ni20-M30-VP4X 4590605	Extended Range	20	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4
Ni15-M30-AD4X 44172		15	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Ni15-M30-VN4X 15715	Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	4	A4
Ni15-M30-VP4X 15615	Comp. Outputs	15	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	5	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Metal Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings	
	<p>A</p> 	
<p>B</p> 	<p>C</p> 	
<p>D</p> 		
Wiring Diagrams/Mating Cordsets		
<p>1</p> 	<p>2</p> 	<p>3</p> 
A2 2-wire DC - (AD, RD, AG)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math> Polarized (AG) <math>\leq 4.2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox) <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 30 mm

### Threaded Metal Barrels with Cable and DC Outputs


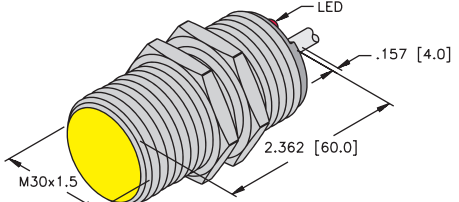
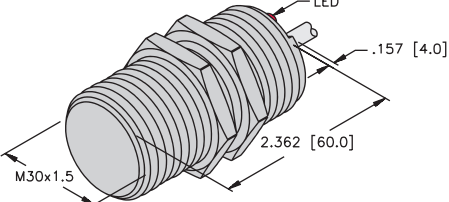
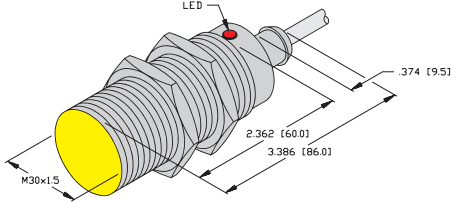
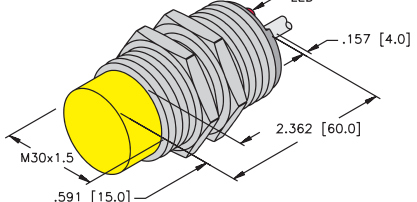
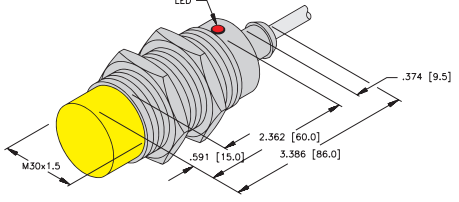
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi10-G30K-AD4X 4670695	Short Barrel	10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	1	A2
Bi10-G30K-AN6X 46716	Short Barrel	10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi10-G30K-AP6X 46706	Short Barrel	10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi15-G30K-AP6X 4207300	Short Barrel	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi10-G30-AN6X 4647500		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	2	A4
Bi10-G30-AN7X 1714800	TTL Compatible	10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	2	A4
Bi10-G30-AP6X 4647400		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	B	3	A4
Ni30-G30K-AP6X 4670711	Short Barrel	30	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	3	A4
Ni15-G30-AN6X 4647700		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	2	A4
Ni15-G30-AN7X 1714900	TTL Compatible	15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	2	A4
Ni15-G30-AP6X 4647600		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	3	A4
Ni15-G30K-AN6X 46717	Short Barrel	15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	2	A4
Ni15-G30K-AP6X 46707	Short Barrel	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	3	A4

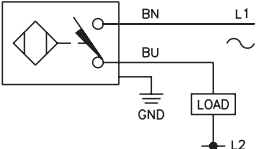
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Metal Barrels with Cable and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Embeddable, Potted-In Cable</p>
<p><b>B</b></p>  <p>30 mm - Embeddable, Potted-In Cable, PTFE Coated</p>	<p><b>C</b></p>  <p>30 mm - Embeddable, Potted-In Cable</p>
<p><b>D</b></p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC)</p> <p><math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz)</p> <p><math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm</p> <p><math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 30 mm

### Threaded Metal Barrels with Cable and AC/DC Outputs


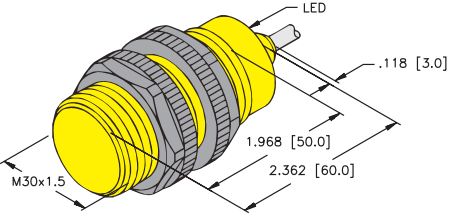
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi10-EG30-ADZ30X2</b> 4256095		10	2-wire AC/DC Short-circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	SS	PA 12	GN	RD	2M/PVC	A	1	A5
<b>Bi10-G30-ADZ30X2</b> 42070		10	2-wire AC/DC Short-circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	2M/PVC	A	1	A5
<b>Bi15-G30-ADZ30X2</b> 4207200		15	2-wire AC/DC Short-circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	2M/PVC	A	1	A5
<b>Bi10-EG30-AZ3X</b> 4345699		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	SS	PA 12	N/A	RD	2M/PVC	A	1	A6
<b>Bi10-G30-AZ3X</b> 4345400		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	A	1	A6
<b>Bi10-GT30-ADZ30X2/S34</b> 4256000	PTFE, WFI	10	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TC	TC	GN	RD	2M/PVC	B	1	A5
<b>Bi10-M30T-AZ3X</b> 43170		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	C	1	A6
<b>Ni20-G30-ADZ30X2</b> 4205404		20	2-wire AC/DC Short-Circuit Protected	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	2M/PVC	D	1	A5
<b>Ni15-M30T-AZ3X</b> 43171		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	E	1	A6

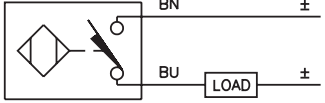
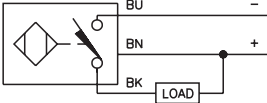
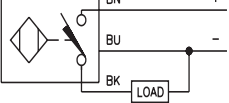
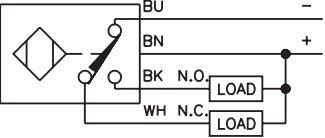
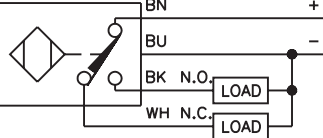
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Plastic Barrels with Cable and DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>30 mm - Embeddable/Nonembeddable, Partial Threading, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p> 	<p>2</p> 	<p>3</p> 
<p>4</p> 	<p>5</p> 	

A2	2-wire DC - (AD, RD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: Non-polarized (AD) <math>&lt; 5.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>		<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 30 mm

## Threaded Plastic Barrels with Cable and DC Outputs


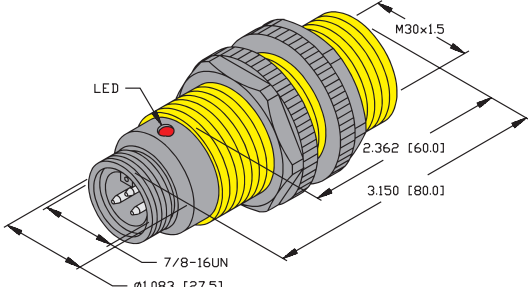
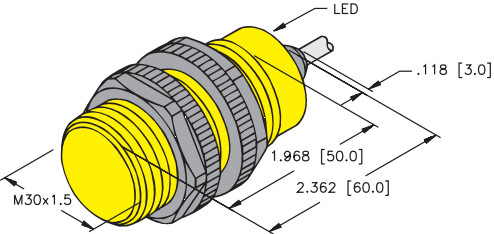
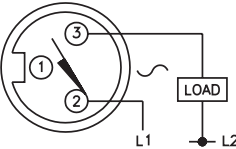
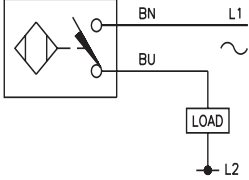
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi10U-S30-AN6X 1636520	Uprox	10	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi10U-S30-AP6X 1636500	Uprox	10	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi10-S30-AD4X 44590		10	2-wire DC	10-65 VDC	500	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	1	A2
Bi10-S30-AN6X 46591		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	2	A4
Bi10-S30-AN7X/S100 17777	TTL Compatible, High Temp. 100 °C	10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +100	IP67	PA 12	IRPA	N/A	YE	2M/PVC	A	2	A4
Bi10-S30-AP6X 46590		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	3	A4
Bi10-S30-VP4X 15122	Comp. Outputs	10	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	5	A4
Ni20U-S30-AN6X 1646520	Uprox	20	3-wire DC NPN	10-30 VDC	1500	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	2M/PVC	A	2	A4
Ni20U-S30-AP6X 1646500	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	2M/PVC	A	3	A4
Ni15-S30-AD4X 44592		15	2-wire DC	10-65 VDC	200	≤100	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	1	A2
Ni15-S30-AN6X 46593		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	2	A4
Ni15-S30-AP6X 46592		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	3	A4
Ni15-S30-VN4X 15224	Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	4	A4
Ni15-S30-VP4X 15630	Comp. Outputs	15	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	N/A	YE	2M/PVC	A	5	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Plastic Barrels with AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Embeddable/Nonembeddable, Full Threading, 7/8" Minifast Connection</p>
<p><b>B</b></p>  <p>30 mm - Embeddable/Nonembeddable, Partial Threading, Potted-In Cable</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RK 30-*M</p>	<p><b>2</b></p> 
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Inrush Current: <math>\leq 8</math> A (<math>\leq 10</math>ms max. 5 Hz)</p> <p><math>\leq 1</math> A (<math>\leq 10</math> ms max. 5 Hz) 12 mm</p> <p><math>\leq 0.2</math> A (<math>\leq 10</math> ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 30 mm

## Threaded Plastic Barrels with AC Outputs


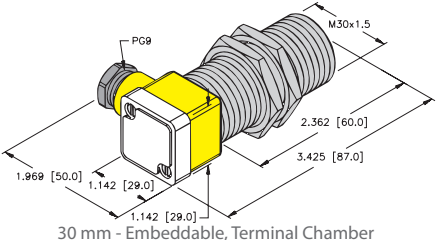
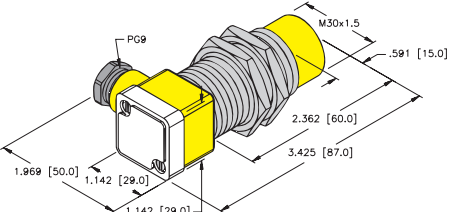
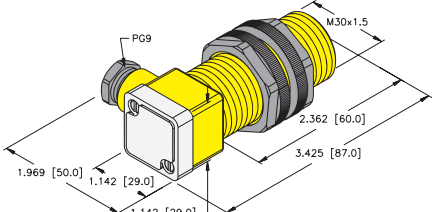
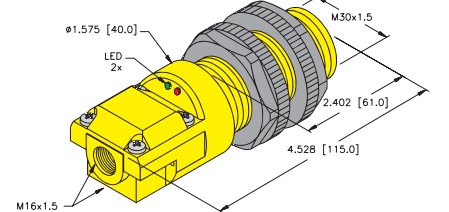
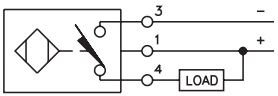
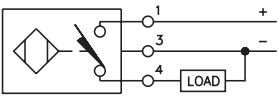
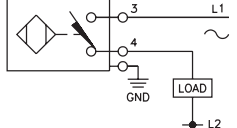
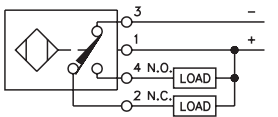
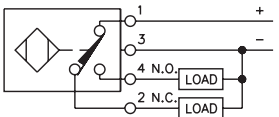
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi10-S30-AZ3X</b> 43554		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	2	A6
<b>Ni15-S30-AZ3X</b> 43555		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	2	A6
<b>Bi10-P30-AZ3X-B2131</b> 43749		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	--	A	1	A6
<b>Ni15-S30-AZ3X/S100</b> 13758	High Temp. 100 °C	15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +100	IP67	PA 12	PA 12	N/A	RD	2M/PVC	B	2	A6
<b>Ni15-P30-AZ3X-B2131</b> 43754		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	N/A	RD	--	A	1	A6

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 30 mm

## Threaded Barrels with Terminal Chamber and AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>30 mm - Embeddable, Terminal Chamber</p>	
<p><b>B</b></p>  <p>30 mm - Nonembeddable, Terminal Chamber</p>	<p><b>C</b></p>  <p>30 mm - Embeddable/Nonembeddable, Plastic, Terminal Chamber</p>	
<p><b>D</b></p>  <p>30 mm - Embeddable/Nonembeddable, Plastic, Terminal Chamber</p>		
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 
<p><b>4</b></p> 	<p><b>5</b></p> 	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current:  <math>\leq 0.1\text{ mA}</math>          No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>          AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 30 mm

## Threaded Barrels with Terminal Chamber and AC/DC Outputs


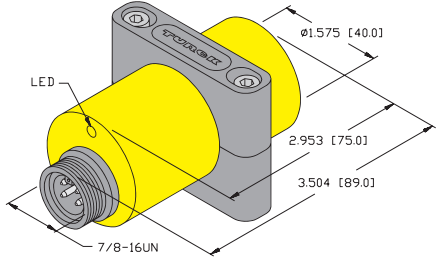
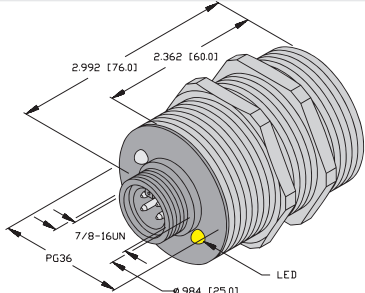
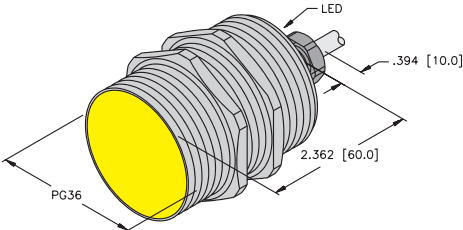
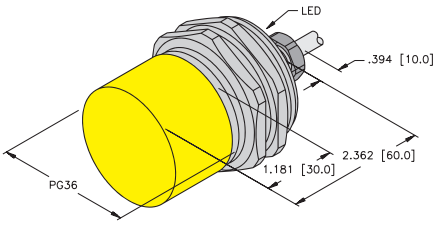
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi10U-EG30SK-AN6X 1636420	Uprox	10	3-wire DC NPN	10-30 VDC	2000	≤200	-30 to +85	IP68	SS	LCP	N/A	YE	A	1	A4
Bi10-G30SK-AN6X2 4648500		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	A	1	A4
Bi10-P30SK-AN6X2 4660000		10	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	1	A4
Bi10-G30SK-AP6X2 4648410		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	A	2	A4
Bi10-P30SK-AP6X2 4659900		10	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	2	A4
Bi10-P30SR-VN4X2 15752	Comp. Outputs	10	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	D	4	A4
Bi10-P30SR-VP4X2 15652	Comp. Outputs	10	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	D	5	A4
Bi10-G30SK-AZ3X2 4346400		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	A	3	A6
Bi10-P30SK-AZ3X2 4356400		10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	GN	RD	C	3	A6
Bi10-P30SR-FZ3X2 13420	Programmable Outputs	10	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤500	-25 to +70	IP67	PA 12	PA 12	GN	RD	D	3	A6
Ni20U-P30SK-AP6X 1646700	Uprox	20	3-wire DC PNP	10-30 VDC	1500	≤200	-30 to +85	IP68	PA 12	PA 12	N/A	YE	C	2	A4
Ni15-P30SK-AN6X2 4660200		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	1	A4
Ni15-G30SK-AP6X2 4648600		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	B	2	A4
Ni15-P30SK-AP6X2 4660100		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	C	2	A4
Ni15-P30SR-VN4X2 15753	Comp. Outputs	15	4-wire DC NPN	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	D	4	A4
Ni15-P30SR-VP4X2 15653	Comp. Outputs	15	4-wire DC PNP	10-65 VDC	500	≤200	-25 to +70	IP67	PA 12	PA 12	GN	YE	D	5	A4
Ni15-G30SK-AZ3X2 4346500		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	B	3	A6
Ni15-P30SK-AZ3X2 4356500		15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	PA 12	PA 12	GN	RD	C	3	A6
Ni15-P30SR-FZ3X2 13421	Programmable Outputs	15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤500	-25 to +70	IP67	PA 12	PA 12	GN	RD	D	3	A6

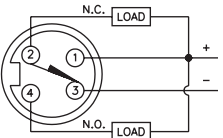
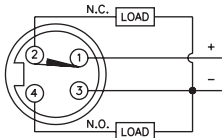
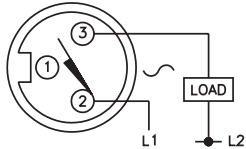
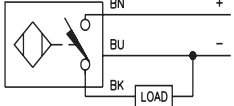
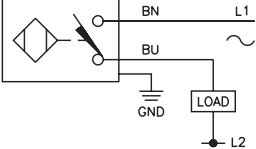
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 40 mm, 47 mm

## Large Diameter Barrels with AC/DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>40 mm - Nonembeddable, Smooth Plastic Barrel, 7/8" Minifast Connection</p>	<p><b>B</b></p>  <p>47 mm - Embeddable, 7/8" Minifast Connection</p>
<p><b>C</b></p>  <p>47 mm - Embeddable, Potted-In Cable</p>	<p><b>D</b></p>  <p>47 mm - Nonembeddable, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RKM 40-*M</p>	<p><b>2</b></p>  <p>Mating Cordset: RKM 40-*M</p>	<p><b>3</b></p>  <p>Mating Cordset: RKM 30-*M</p>
<p><b>4</b></p> 	<p><b>5</b></p> 	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 40 mm, 47 mm

## Large Diameter Barrels with AC/DC Outputs


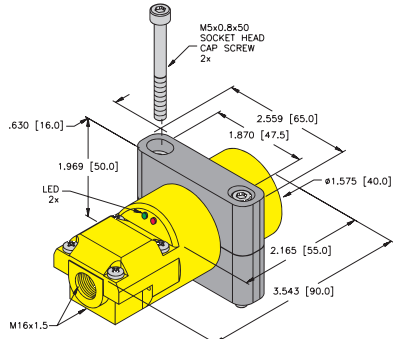
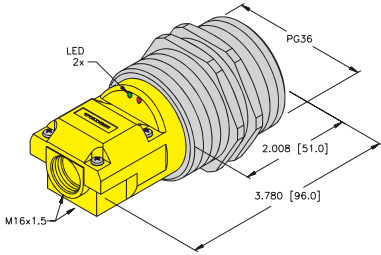
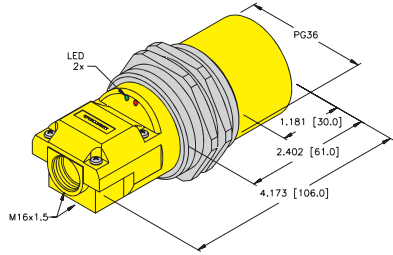
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi20-G47-AP4X 15645		20	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	C	4	A4
Bi20-G47-AZ3X 13088		20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	C	5	A6
Ni25-G47-AP4X 15646		25	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/PVC	D	4	A4
Ni25-G47-AZ3X 13089		25	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	2M/PVC	D	5	A6
Bi25-G47-VN4X-B2141 45903	Comp. Outputs	25	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	--	B	1	A4
Bi25-G47-VP4X-B2141 45902	Comp. Outputs	25	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	--	B	2	A4
Bi20-G47-AZ3X-B2131 43759		20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	N/A	RD	--	B	3	A6
Ni30-K40-VN4X-B2141 45904	Comp. Outputs	30	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	N/A	YE	--	A	1	A4
Ni30-K40-VP4X-B2141 4590500	Comp. Outputs	30	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	N/A	YE	--	A	2	A4
Ni30-K40-AZ3X-B2131 43758		30	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	ABS	ABS	N/A	RD	--	A	3	A6

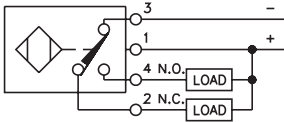
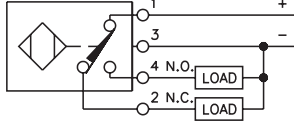
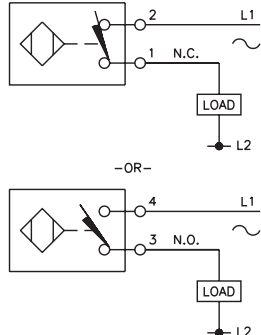
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 40 mm, 47 mm

## Large Diameter Barrels with Terminal Chambers and AC/DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>40 mm - Smooth Plastic, Terminal Chamber</p>
<p><b>B</b></p>  <p>47 mm - Embeddable, Terminal Chamber</p>	<p><b>C</b></p>  <p>47 mm - Nonembeddable, Terminal Chamber</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50\text{ Hz}</math>... <math>\leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Inductive Barrel Sensors | 40 mm, 47 mm

### Large Diameter Barrels with Terminal Chambers and AC/DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi25-G47SR-FZ3X2 13427	Programmable Outputs	25	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	B	3	A6
Bi25-G47SR-VN4X2 15748	Comp. Outputs	25	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	B	1	A4
Bi25-G47SR-VP4X2 15648	Comp. Outputs	25	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	B	2	A4
Bi15-K40SR-FZ3X2 13423	Programmable Outputs	15	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	ABS	ABS	GN	RD	A	3	A6
Bi15-K40SR-VP4X2 15655	Comp. Outputs	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	2	A4
Ni40-G47SR-FZ3X2 13428	Programmable Outputs	40	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	CPB	PA 12	GN	RD	C	3	A6
Ni40-G47SR-VP4X2 15650	Comp. Outputs	40	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12	GN	YE	C	2	A4
Ni30-K40SR-FZ3X2 13425	Programmable Outputs	30	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	ABS	ABS	GN	RD	A	3	A6
Ni30-K40SR-VN4X2 15758	Comp. Outputs	30	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	1	A4
Ni30-K40SR-VP4X2 15658	Comp. Outputs	30	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	2	A4
Ni20-K40SR-FZ3X2 13424	Programmable Outputs	20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	ABS	ABS	GN	RD	A	3	A6
Ni20-K40SR-VN4X2 15756	Comp. Outputs	20	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	1	A4
Ni20-K40SR-VP4X2 15656	Comp. Outputs	20	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	2	A4

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 4 mm, 5 mm, & 6.5 mm Namur



## Dimension Drawings

<p><b>A</b></p> <p>4 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>	<p><b>B</b></p> <p>5 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>C</b></p> <p>6.5 mm - Embeddable, Miniature Smooth, M8 Picofast Quick Disconnect</p>
<p><b>D</b></p> <p>4 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>E</b></p> <p>5 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>F</b></p> <p>6.5 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>
<p><b>G</b></p> <p>6.5 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>H</b></p> <p>6.5 mm - Nonembeddable, Miniature Smooth Barrel, Potted-In Cable</p>	

## Wiring Diagrams/Mating Cordsets

<p><b>1</b></p> <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p>
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## A1 2-wire DC NAMUR - (Y0 and Y1)

<p>Differential Travel (Hysteresis): 1-10% (5% typical)</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-Activated Current Consumption: ≥2.1 mA</p> <p>Activated Current Consumption: ≤1.2 mA</p> <p>Recommended Switching Point for Remote Amplifier: &gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>	<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
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### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 4 mm, 5 mm, & 6.5 mm Namur

Intrinsically Safe

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Cable Length/Jacket	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi1-EH04-Y1-V1330 1003044		1	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	--	N/A	A	1	A1
Bi1-EG05-Y1-V1331 1003241		1	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	--	N/A	B	1	A1
Bi1.5-EH6.5-Y1-V1130 1004621		1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	--	N/A	C	1	A1
Bi1-EH04-Y1 1003040		1	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	2M/PVC	N/A	D	2	A1
Bi1-EG05-Y1 1003240		1	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	2M/PVC	N/A	E	2	A1
Bi1.5-EH6.5K-Y1 1004600	Short Barrel	1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	2M/PVC	N/A	F	2	A1
Bi1.5-H6.5-Y1X 4004810		1.5	2-wire DC NAMUR	5-30 VDC	3000	Remote	-25 to +70	IP67	SS	PA 12	2M/PVC	YE	G	2	A1
Ni3-EH6.5K-Y1 1004700	Short Barrel	3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	2M/PVC	N/A	H	2	A1

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm Namur



## Dimension Drawings

<p><b>A</b></p> <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>B</b></p> <p>8 mm - Embeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>C</b></p> <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>
<p><b>D</b></p> <p>8 mm - Nonembeddable, Miniature Threaded, M8 Picofast Quick Disconnect</p>	<p><b>E</b></p> <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>F</b></p> <p>8 mm - Embeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>
<p><b>G</b></p> <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	<p><b>H</b></p> <p>8 mm - Nonembeddable, Miniature Threaded, M12 Eurofast Quick Disconnect</p>	

We reserve the right to make technical alterations without prior notice.

## Wiring Diagrams/Mating Cordsets

<p><b>1</b></p> <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p> <p>Mating Cordset: RK 4.21T-*</p>
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A1 2-wire DC NAMUR - (Y0 and Y1)	
<p>Differential Travel (Hysteresis): 1-10% (5% typical)</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-Activated Current Consumption: ≥2.1 mA</p> <p>Activated Current Consumption: ≤1.2 mA</p> <p>Recommended Switching Point for Remote Amplifier:</p> <p style="padding-left: 20px;">&gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>	<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

# Inductive Barrel Sensors | 8 mm Namur

Intrinsically Safe

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi1.5-EG08K-Y1-V1131</b> 1003630	Short Barrel	1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	A	1	A1
<b>Bi1.5-EG08-Y1-V1131</b> 1003530		1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	B	1	A1
<b>Ni3-EG08K-Y1-V1130</b> 1003721	Short Barrel	3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	C	1	A1
<b>Ni3-EG08-Y1-V1130</b> 1003732		3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	D	1	A1
<b>Bi1.5-EG08K-Y1-H1341</b> 1003620	Short Barrel	1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	E	2	A1
<b>Bi1.5-EG08K-Y1X-H1341</b> 1003640	Short Barrel	1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	YE	E	2	A1
<b>Bi1.5-EG08-Y1-H1341</b> 1003502		1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	F	2	A1
<b>Ni3-EG08K-Y1-H1341</b> 1003720	Short Barrel	3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	G	2	A1
<b>Ni3-EG08K-Y1X-H1341</b> 1003704	Short Barrel	3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	G	2	A1
<b>Ni3-EG08-Y1-H1341</b> 1003730		3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	H	2	A1

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 8 mm Namur

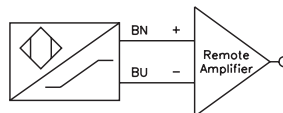


## Dimension Drawings

<p><b>A</b></p> <p>8 mm - Embeddable, Miniature Smooth Barrel, Potted-In Cable</p>	<p><b>B</b></p> <p>8 mm - Embeddable, Miniature Threaded Barrel, Side Sensing, Potted-In Cable</p>	<p><b>C</b></p> <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>D</b></p> <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>E</b></p> <p>8 mm - Embeddable, Miniature Threaded Barrel, Potted-In Cable</p>	<p><b>F</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>
<p><b>G</b></p> <p>8 mm - Nonembeddable, Miniature Threaded Barrel, Potted-In Cable</p>		

## Wiring Diagrams/Mating Cordsets

1



## A1 2-wire DC NAMUR - (Y0 and Y1)

<p>Differential Travel (Hysteresis): 1-10% (5% typical)</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-Activated Current Consumption: ≥2.1 mA</p> <p>Activated Current Consumption: ≤1.2 mA</p> <p>Recommended Switching Point for Remote Amplifier: &gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>	<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
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### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 8 mm Namur

Intrinsically Safe

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1.5-H08-Y1 1021800		1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	A	1	A1
Bi1.5-GS880-Y1 1004401	Side Sensing	1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	B	1	A1
Bi1.5-EG08K-Y1 1003600	Short Barrel	1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	C	1	A1
Bi1.5-EG08-Y1 1003500		1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	D	1	A1
Bi1.5-G08-Y1 1005224		1.5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	E	1	A1
Ni3-EG08K-Y1 1003700	Short Barrel	3	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	F	1	A1
Ni2-G08-Y1 10053		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	G	1	A1

We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

# Inductive Barrel Sensors | 12 mm Namur



## Dimension Drawings

<p><b>A</b></p> <p>12 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>B</b></p> <p>12 mm - Embeddable, M12 Eurofast Connection, PTFE Coated Sensors</p>	<p><b>C</b></p> <p>12 mm - Embeddable, M12 Eurofast Connection, Extended Barrel Length</p>
<p><b>D</b></p> <p>12 mm - Nonembeddable, M12 Eurofast Connection</p>	<p><b>E</b></p> <p>12 mm - Nonembeddable, M12 Eurofast Connection</p>	<p><b>F</b></p> <p>12 mm - Embeddable, Potted-In Cable</p>
<p><b>G</b></p> <p>12 mm - Nonembeddable, Potted-In Cable</p>	<p><b>H</b></p> <p>12 mm - Embeddable/Nonembeddable, Plastic, M12 Eurofast Quick Disconnect</p>	<p><b>I</b></p> <p>12 mm - Embeddable/Nonembeddable, Plastic Potted-In Cable</p>

We reserve the right to make technical alterations without prior notice.

## Wiring Diagrams/Mating Cordsets

<p><b>1</b></p> <p>Mating Cordset: RK 4.21T-*, RKK 4.21T-*</p>	<p><b>2</b></p>
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A1 2-wire DC NAMUR - (Y0 and Y1)	
<p>Differential Travel (Hysteresis): 1-10% (5% typical)</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-Activated Current Consumption: ≥2.1 mA</p> <p>Activated Current Consumption: ≤1.2 mA</p> <p>Recommended Switching Point for Remote Amplifier:</p> <p>Amplifier: &gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>	<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

# Inductive Barrel Sensors | 12 mm Namur

Intrinsically Safe

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-M12-Y1X-H1141 40102		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	CPB	PA 12	YE	--	A	1	A1
Bi2-MT12-Y0X-H1141 4010093	PTFE	2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	TC	TC	YE	--	B	1	A1
Bi2-M12E-Y0X-H1141 4606490		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	CPB	PA 12	YE	--	C	1	A1
Bi2-S12-Y0X-H1141 4030090		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	PA	PA	RD	--	H	1	A1
Ni5-M12-Y1X-H1141 40103		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	CPB	PA 12	YE	--	D	1	A1
Ni5-G12-Y0-H1141 1005594		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	CPB	PA 12	N/A	--	E	1	A1
Ni5-S12-Y0X-H1141 40303		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	PA	PA	RD	--	H	1	A1
Bi2-EG12-Y0X 401230		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	SS	PA 12	YE	2M/PVC	F	2	A1
Bi2-G12-Y0 1005450		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	CPB	PA 12	N/A	2M/PVC	F	2	A1
Bi2-G12-Y0X 4010000		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	CPB	PA 12	YE	2M/PVC	F	2	A1
Bi2-P12-Y0 1005456		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	PA 12	PA 12	N/A	2M/PVC	I	2	A1
Bi2-P12-Y0X 4030070		2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	PA 12	PA 12	YE	2M/PVC	I	2	A1
Bi2-P12-Y1X/S97 4030021	Low Temp. -40 °C	2	2-wire DC NAMUR	5-30 VDC	5000	Remote	-40 to +70	IP67	PA 12	PA 12	YE	2M/Silicon	I	2	A1
Ni5-G12-Y0 1005451		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	CPB	PA 12	N/A	2M/PVC	G	2	A1
Ni5-G12-Y0X 1005458		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	CPB	PA 12	YE	2M/PVC	G	2	A1
Ni5-P12-Y0X 1005460		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	PA 12	PA 12	YE	2M/PVC	I	2	A1
Ni5-P12-Y1 10094		5	2-wire DC NAMUR	5-30 VDC	2000	Remote	-25 to +70	IP67	PA 12	PA 12	N/A	2M/PVC	I	2	A1

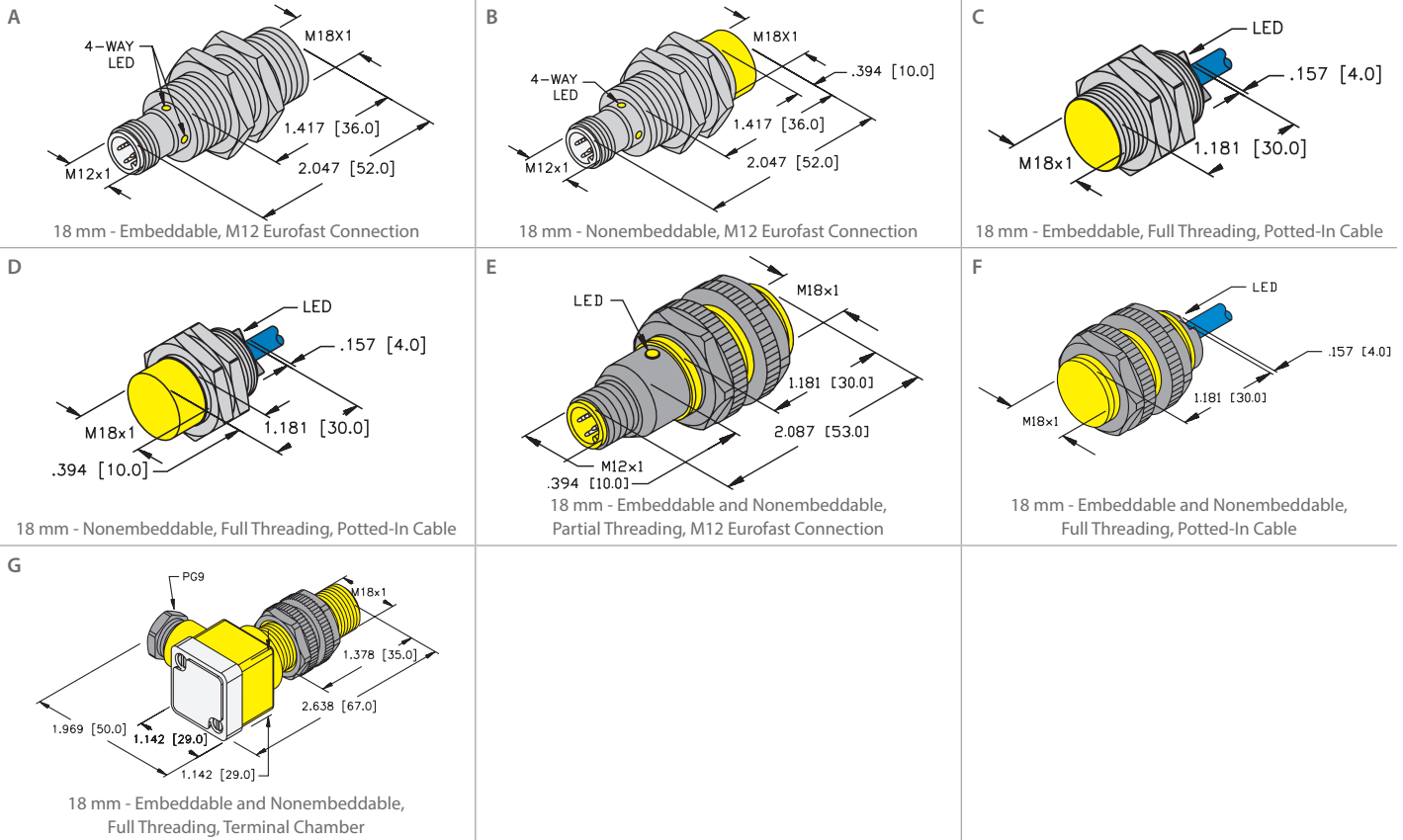
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Inductive Barrel Sensors

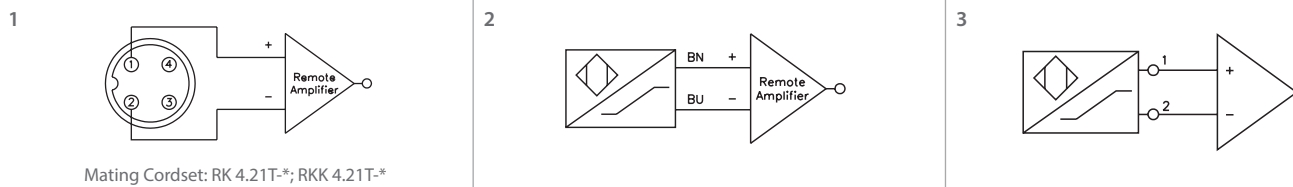
# Inductive Barrel Sensors | 18 mm Namur



## Dimension Drawings



## Wiring Diagrams/Mating Cordsets



## A1 2-wire DC NAMUR - (Y0 and Y1)

Differential Travel (Hysteresis):	1-10% (5% typical)	Power-On Effect:	Realized in Amplifier
Nominal Voltage:	8.2 VDC (EN60947-5-6)	Reverse Polarity Protection:	Incorporated
Load Resistance:	1000 Ω	Wire-Break Protection:	Realized in Amplifier
Non-Activated Current Consumption:	≥2.1 mA	Transient Protection:	Realized in Amplifier
Activated Current Consumption:	≤1.2 mA	Shock:	30 g, 11 ms
Recommended Switching Point for Remote Amplifier:	>1.2 to <2.1 mA, typ. 1.55 mA ON/1.75 mA OFF	Vibration:	55 Hz, 1 mm Amplitude in all 3 Planes
		Repeatability:	≤2% of Rated Operating Distance

### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

We reserve the right to make technical alterations without prior notice.



# Inductive Barrel Sensors | 18 mm Namur

Intrinsically Safe

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi5-M18-Y1X-H1141 40152		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	CPB	PA 12	YE	-	A	1	A1
Ni10-M18-Y1X-H1141 40153		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	CPB	PA 12	YE	--	B	1	A1
Bi5-EG18-Y0 1006060		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	SS	PA 12	N/A	2M/PVC	C	2	A1
Bi5-G18-Y0 1005452		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	CPB	PA 12	N/A	2M/PVC	C	2	A1
Bi5-G18-Y0X 4015000		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	CPB	PA 12	YE	2M/PVC	C	2	A1
Ni10-G18-Y0 1006170		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	CPB	PA 12	N/A	2M/PVC	D	2	A1
Ni10-G18-Y0X 4015100		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	CPB	PA 12	YE	2M/PVC	D	2	A1
Bi5-S18-Y0X-H1141 4036095		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	PA 12	PA 12	YE	--	E	1	A1
Bi5-P18-Y0 1005457		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	PA 12	PA 12	N/A	2M/PVC	F	2	A1
Bi5-P18-Y0X 1005462		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	PA 12	PA 12	YE	2M/PVC	F	2	A1
Bi5-P18-Y0/S100 1024500	High Temp. 100 °C	5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +100	IP67	PA 12	IRPA	N/A	2M/PVC	F	2	A1
Ni10-P18-Y0X 1005463		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	PA 12	PA 12	YE	2M/PVC	F	2	A1
Ni10-P18-Y1 10096		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	PA 12	PA 12	N/A	2M/PVC	F	2	A1
Ni10-P18-Y0/S100 1031770	High Temp. 100 °C	10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +100	IP67	PA 12	IRPA	N/A	2M/PVC	F	2	A1
Bi5-P18SK-Y1X 40360		5	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	PA 12	PA 12	YE	--	G	3	A1
Ni10-P18SK-Y1X 40361		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	PA 12	PA 12	YE	--	G	3	A1

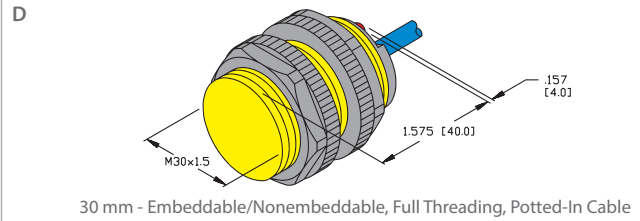
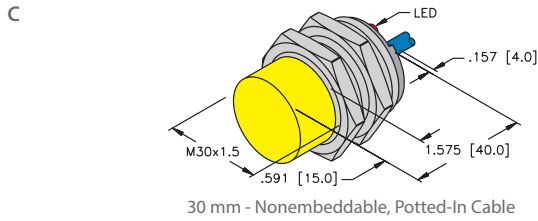
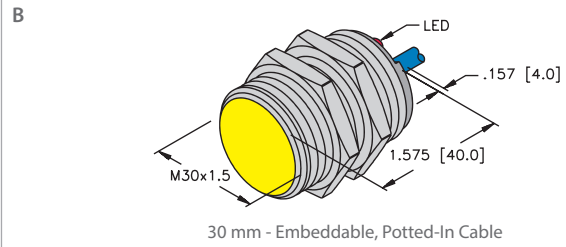
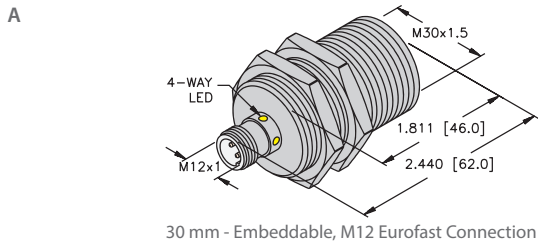
We reserve the right to make technical alterations without prior notice.

Inductive Barrel Sensors

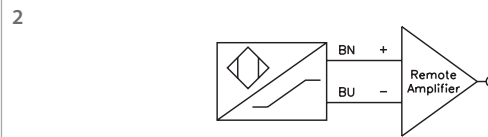
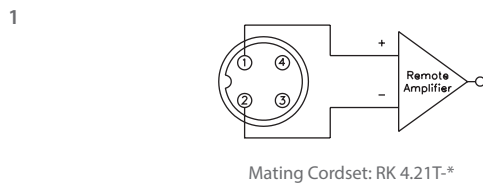
# Inductive Barrel Sensors | 30 mm Namur



## Dimension Drawings



## Wiring Diagrams/Mating Cordsets



## A1 2-wire DC NAMUR - (Y0 and Y1)

Differential Travel (Hysteresis):	1-10% (5% typical)	Power-On Effect:	Realized in Amplifier
Nominal Voltage:	8.2 VDC (EN60947-5-6)	Reverse Polarity Protection:	Incorporated
Load Resistance:	1000 Ω	Wire-Break Protection:	Realized in Amplifier
Non-Activated Current Consumption:	≥2.1 mA	Transient Protection:	Realized in Amplifier
Activated Current Consumption:	≤1.2 mA	Shock:	30 g, 11 ms
Recommended Switching Point for Remote		Vibration:	55 Hz, 1 mm Amplitude in all 3 Planes
Amplifier:	>1.2 to <2.1 mA, typ. 1.55 mA ON/1.75 mA OFF	Repeatability:	≤2% of Rated Operating Distance

### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

We reserve the right to make technical alterations without prior notice.

# Inductive Barrel Sensors | 30 mm Namur

Intrinsically Safe

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi10-M30-Y1X-H1141 40202		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	CPB	PA 12	YE	-	A	1	A1
Bi10-G30-Y0 1005453	Short Barrel	10	2-wire DC NAMUR	5-30 VDC	200	Remote	-25 to +70	IP67	CPB	PA 12	N/A	2M/PVC	B	2	A1
Bi10-G30-Y0X 1005459	Short Barrel	10	2-wire DC NAMUR	5-30 VDC	200	Remote	-25 to +70	IP67	CPB	PA 12	YE	2M/PVC	B	2	A1
Ni15-G30-Y0 1005454		15	2-wire DC NAMUR	5-30 VDC	200	Remote	-25 to +70	IP67	CPB	PA 12	N/A	2M/PVC	C	2	A1
Ni15-G30-Y0X 4020170		15	2-wire DC NAMUR	5-30 VDC	200	Remote	-25 to +70	IP67	CPB	PA 12	YE	2M/PVC	C	2	A1
Bi10-P30-Y0X 4040010		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	PA 12	PA 12	YE	2M/PVC	D	2	A1
Bi10-P30-Y1 10097		10	2-wire DC NAMUR	5-30 VDC	500	Remote	-25 to +70	IP67	PA 12	PA 12	N/A	2M/PVC	D	2	A1
Ni15-P30-Y0X 1005465		15	2-wire DC NAMUR	5-30 VDC	200	Remote	-25 to +70	IP67	PA 12	PA 12	YE	2M/PVC	D	2	A1
Ni15-P30-Y1 10098		15	2-wire DC NAMUR	5-30 VDC	200	Remote	-25 to +70	IP67	PA 12	PA 12	N/A	2M/PVC	D	2	A1

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Inductive Barrel Sensors




# Notes







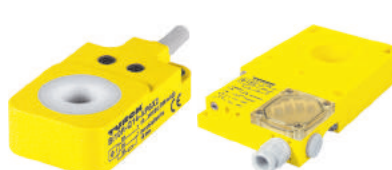
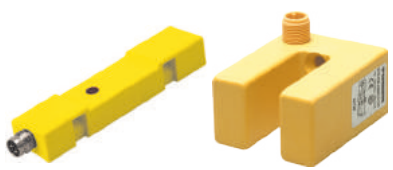
Notes



# Specialty Sensor Section

Specialty Sensors			
			
Housing	Barrel and Rectangular	12, 18, and 30 mm	40, 80, and 160 mm
Features	Washdown Uprox+	High Temperature Sensors	High Temperature Sensors
Pages	C9 - 14	C15 - 20	C21

Specialty Sensors			
			
Housing	8, 12, 18, and 30 mm	Barrel and Rectangular	30 mm
Features	Stainless Steel Face Sensors	Mobile Equipment Sensors	High Current Solid State Sensors
Pages	C23 - 32	C33 - 36	C37



Specialty Sensors			
			
Housing	12, 18, and 30 mm	Variable	Variable
Features	FM, Class I Div 2 Approved Sensors	Ring Sensing	Tube and Slot Sensing
Pages	C39	C41 - 44	C45 - 48

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# Specialty Sensor Selection Guide

Specialty Sensors			
			
Housing	12 mm	80 and 130 mm	130 mm
Features	Weld Nut Detection Sensor	Edge Detection Sensing	Can Line Sensing
Pages	C49	C51 - 54	C55

Specialty Sensors			
			
Housing	8, 12, and 18 mm	18 mm	Barrel and Rectangular
Features	Magnetic Inductive Sensing	Submersible	Selective Metal Sensing
Pages	C57 - 60	C61	C63 - 66

Specialty Sensors		
		
Housing	12 and 18 mm	18 and 30 mm
Features	In Cylinder Sensor	Rotational Speed Monitoring
Pages	C67	C69

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Specialty Sensors

# Specialty Sensor Part Number Key

B	I	10	U	-	G	T	30	-	A	DZ	30	X2	Wiring Option*	Special Option Code**
<p><b>Mounting</b></p> <p>B = embeddable            BID = high pressure sensor            N = nonembeddable            S = slot</p> <p><b>Principle of Operation</b></p> <p>I = inductive            IM = inductive magnet operated</p> <p><b>Rated Operating Distance (mm)</b></p>													<p><b>Number of LEDs</b></p> <p>(blank) = no LEDs            X = 1 LED            X2 = 2 LEDs</p>	
<p><b>Sensing Characteristics</b></p> <p>FE = ferrous only            R = ring sensor            U = Uprox® Sensor</p> <p><b>Housing Material Modifier</b></p> <p>E = stainless steel</p> <p><b>Housing Style</b></p> <p><b>Barrel - Metal</b></p> <p>G = full threading, generally chrome plated brass            H = smooth, chrome plated brass or stainless steel            M = partial threading, chrome plated brass</p> <p><b>Barrel - Plastic</b></p> <p>K = smooth            P = full threading            S = partial threading</p> <p><b>Rectangular</b></p> <p>Q = metal or plastic, various rectangular styles</p> <p><b>Limit Switch</b></p> <p>CA = stubby®, short aluminum housing, connector            CK = stubby®, short plastic housing, connector</p> <p><b>Slot</b></p> <p>K = slot sensor, plastic housing</p> <p><b>Ring</b></p> <p>32SR = large plastic housing, static or dynamic output            Q = small rectangular plastic housing, static output            W = small plastic housing, dynamic output</p> <p><b>Primary Barrel Modifier</b></p> <p>T = PTFE® coated</p> <p><b>Housing Diameter or Height (mm)</b></p>													<p><b>Voltage Range</b></p> <p><b>AC/DC: (No SCP**)</b></p> <p>3 = 20-250 VAC, 10-300 VDC</p> <p><b>AC/DC: (Latched SCP)</b></p> <p>30 = 20-250 VAC, 10-300 VDC 400 mA</p> <p><b>DC:</b></p> <p>4 = 10-65 VDC, polarity protected, pulsed SCP**            6 = 10-30 VDC, polarity protected, pulsed SCP            44 = 10-55 VDC            45 = 8.4-65 Volts</p>	
<p><b>Output</b></p> <p>D = 2-wire DC (transistor output)            DZ = 2-wire AC/DC, (power MOSFET output)            N = NPN transistor (current sinking)            P = PNP transistor (current sourcing)            Z = 2-wire AC or 2-wire AC/DC            M = high current solid state relay</p> <p><b>Output Function</b></p> <p>A = normally open (N.O.)            DA = dynamic output (ring sensor), normally open            R = normally closed (N.C.)            U = jumper programmable (N.O. or N.C.)            V = complementary outputs: one N.O., one N.C.            Y0 = NAMUR output, requires switching amplifier            Y1 = NAMUR output, requires switching amplifier, ATEX approved</p> <p><b>Secondary Barrel Modifier</b></p> <p>E = extended barrel length            EE = extra long barrel length            FE = stainless steel face, extended barrel length            FM = stainless steel face, medium barrel length            M = medium barrel length            TC = terminal chamber            WD = washdown IP67/IP68/IP69K            F = stainless steel face, standard length</p>														

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**NOTE:**

Part number keys are to assist in identification only.  
 Verify new part numbers with factory; some configurations are not possible.  
 \* See next page Wiring Options and Special Option Codes.



# Specialty Sensor Part Number Key

## Wiring Options\*

### A. Connectorized Sensor

Bi2 - M12 - AN6X2 - H1 1 4 1

#### Connector Family

- B1 = Minifast®, 7/8"-16UN, metal, male
- B2 = Minifast, 7/8"-16UN, plastic, male
- B3 = Microfast®, 1/2"-20UNF, metal, male
- H1 = Eurofast®, M12x1, metal or plastic, male
- V1 = Picofast®, snap and M8x1, metal, male (Q08 snap only)
- V2 = Picofast, snap and M8x1, male (Q08 only)

#### Connector/Sensor Transition

- 1 = straight
- 3 = straight with adapter
- 4 = right-angle with adapter

#### Wiring Configuration

##### Example:

- 0 = non-standard wiring
- 1 = standard wiring
- 3 = N.C. DC output on pin 4 (for US)
- 4 = N.O. 2-wire DC output on pin 4

#### Number of Pins

- 3 = 3
- 4 = 4
- 5 = 5

### B. Potted Cable

Bi2 - G12 - AN6X 7M

#### Cable Length

- (blank) = 2 meter cable
- 7M = 7 meter cable
- \*M = custom cable lengths available

## Special Option Codes\*\*

Bi 2-S12-AN7X /S100 or Bi10R-W30-DAN6X-H1141 /F2

#### Example:

- /S90 = TPU cable
- /S97 = -40 °C (-40 °F) operating temperature
- /S100 = +100 °C (+212 °F) operating temperature
- /S120 = +120 °C (+248 °F) operating temperature
- /S139 = submersible
- /S907 = +160 °C (+320 °F) operating temperature
- /S1009 = 250 ms internal off delay
- /S1102 = +250 °C (+482 °F) operating temperature
- /S1751 = approved for FM Class I, Div 2, groups A, B, C, and D

#### Example:

- /F2 = alternate oscillator frequency

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Specialty Sensors

# Specialty Sensors

## Uprox+ Washdown Sensors

The Uprox+ Washdown product family is with a full line of inductive sensors that senses all metals at the same range (no correction factor), extended temperature rating from -40 to +100 °C, robust construction with IP68 and IP69k sealing ratings, and housing materials compatible with common acidic and alkaline chemicals used in Food and Beverage applications.



## Sensors with Extended Temperature Range

Turck offers sensors for applications that withstand extreme temperatures of -40 to +250 °C. Typically, these sensors are used in applications like cold storage facilities, metal foundries, glass making, outdoor applications, and in painting shops in the automotive industry.



## Stainless Steel Face Sensors

Inductive sensors with one piece stainless steel faced barrels are ideal for applications where physical impact is common or where ingress through the sensing face is a concern. The sensors are available in barrel diameters from 8 mm to 30 mm, standard and extended sensing ranges, rated IP68/IP69K, with optional coatings for welding environments, and 2 and 3-wire designs.



## Mobile Equipment Sensors

Position sensing applications in mobile equipment have different electrical requirements than what is common for industrial sensors. Turck designs and manufactures a diverse line of inductive sensors that meet or exceed the industry requirements for sealing (IP68/IP69K), load dump protection, resistance to shock, vibration, EMC immunity, extended temperature range, wide operating voltage, and extended sensing range.



## Inductive Sensor with 6 A Rated Output

This 30 mm mobile equipment sensor uses a MOSFET component to switch up to 6 amps of current with either a normally open output or a complementary normally open and closed output in a stainless steel housing. The sensor can be configured as an embeddable or nonembeddable sensor.



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## Specialty Sensors

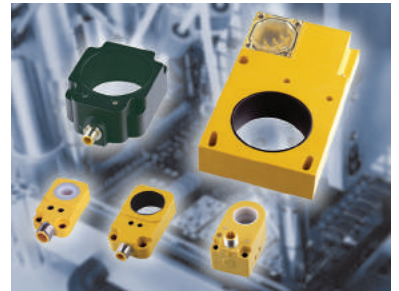
### FM Class I Div 2

The new FM approval standard permits the use of quick disconnect with a lock fast accessory equipped sensor being used in Class I Div 2, Groups A, B, C, D. The ability to use quick disconnect will enable users to install sensors faster and at a lower cost than traditional conduit methods. We also offer approved cordsets with Eurofast or Minifast connectors (when used with a Lokfast guard). All cables have the ITC rating. For applications where conduit is preferred, we offer sensors with potted-in ITC rated cables.



### Inductive Ring Sensor

Turck offers a variety of ring sensor designs that detect a wide variety of target sizes, with sensor outputs to solve either static or dynamic part feeding applications. In addition to our six different ring sensor housings, Turck offers the TS12 Uprox®+ sensor, which senses all metals at the same range while functioning like a ring sensor but can be strapped onto a tube to simplify installation.



### Inductive Slot Sensors

Turck's slot sensors incorporate a U-shaped design with the active sensing face between the two arms. If the object being detected moves into the U-shaped area, the sensor is actuated. Slot sensors are capable of securely detecting targets whose distance from the active face is not clearly defined upon side approach.



### Weld Nut Sensors

Turck's magnetic weld nut sensors provide efficient and economical detection of weld nuts in automotive applications. The sensors detect ferromagnetic components, such as nuts, bushings and spacer sleeves, to ensure these components are present before robotic welding occurs. These sensors are less complex than existing devices that require additional software or electronics to detect the target.



### Can and Edge Detection Sensor

Turck's Q130 sensor is designed for easy mounting on metal can conveying systems to help detect jam ups or lack of metal cans in the conveyor, while the CK4080 and CK40130 sensors are optimized to detect the edges of metal sheets commonly used in transfer presses found in automotive or white goods stamping applications.



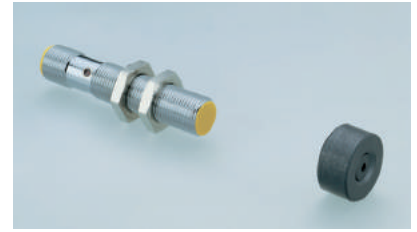
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Specialty Sensors

# Specialty Sensors

## Inductive-Magnetic Proximity Sensors

Turck's line of BIM barrel sensors are designed to work with external magnets and can be used to solve a wide variety of sensing applications, especially where the user would like long sensing ranges (up to 90 mm with DMR31-15-5 magnet) in small housings, such as 8 or 12 mm.



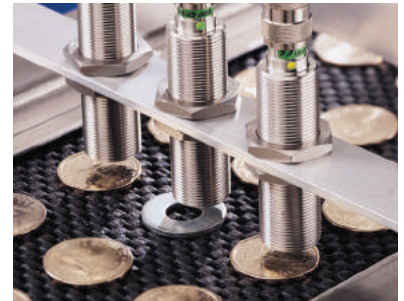
## Submersible Inductive Sensors

These sensors are rated for submersion in water depths up to 500 meters. The materials used to construct this 18 mm diameter sensor are seawater resistant. Available in a variety of sensing ranges and outputs.



## Selective Metal Sensors

Standard inductive sensors sense all metals. Turck's family of selective metal inductive sensors offer a reliable solution for applications where the user wants to detect ferrous metals or non-ferrous metals only.



## In-Cylinder Inductive Sensors

These inductive sensors are designed for use in a hydraulic cylinder to detect extended or retracted positions. Available in M12 or M18 barrels, these sensors can withstand static pressures up to 7,250 psi.



## Rotational Speed Sensors

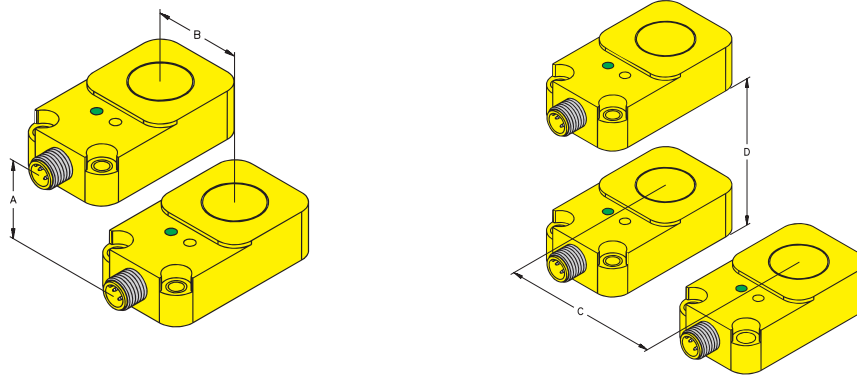
Rotational speed sensors are designed to work with a rotating metal target like a keyway or sprocket. These sensors feature a simple potentiometer for adjusting the set point and are ideal for monitoring applications where the user wants to monitor under speed or over speed conditions. If the speed is below the set point the output is off, and if the speed is above the set point the output turns on.



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## Specialty Sensors

### Ring and Tube Sensor Mounting Characteristics



Sensor Type	A	B	C	D
Bi6R-Q14	0	14	45	45
Bi6R-W30	120	6	120	120
Bi10R-Q14	30	14	45	45
Bi10R-W30	120	10	120	120
Bi15R-Q14	30	14	45	45
Bi15R-W30	120	15	120	120
Bi20R-Q14	30	14	45	45
Bi20R-W30	120	20	120	120
Ni20R-S32SR	150	150	150	150
Bi30R-Q20	40	20	55	55
Bi30R-W30	120	30	120	120
Ni40R-S32SR	150	150	150	150
Bi50R-Q80*	90	50	140	120
Ni65R-Q80*	90	65	140	150
Ni65R-S32SR	150	150	150	150
Ni100R-S32XL**	Consult data sheet	Consult data sheet	290	240
Ni20U-TS12*** (tube)	Consult data sheet	Consult data sheet	42	50

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Specialty Sensors

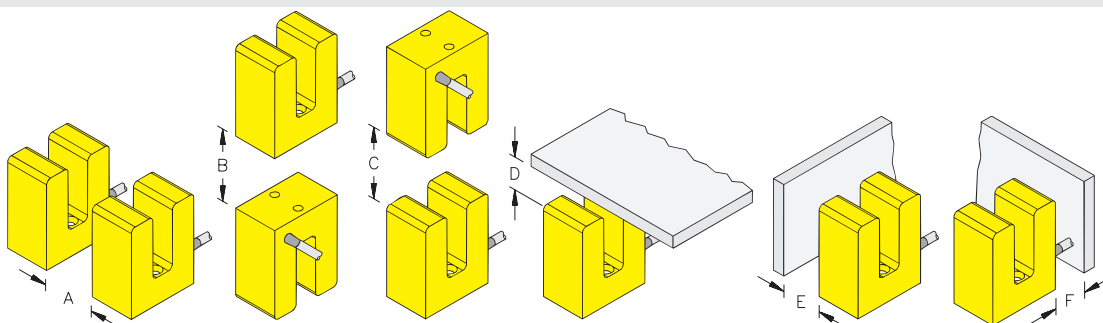
Dimensions are in mm.

\* Do not use a metal mounting bracket.

\*\* Sensitivity adjustment does affect the recommended mounting spacing. Please consult factory for assistance when using multiple sensors.

\*\*\* Spacing of multiple sensors depends on the actual number and orientation. Please contact factory for assistance.

### Slot Sensor Mounting Characteristics


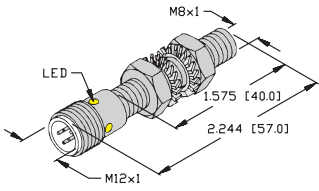
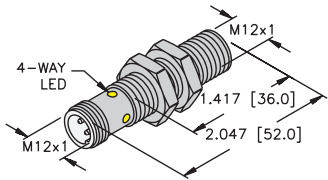
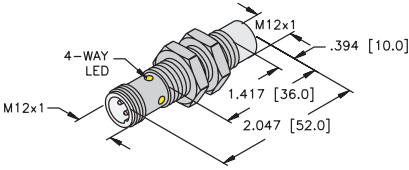
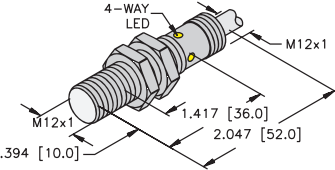
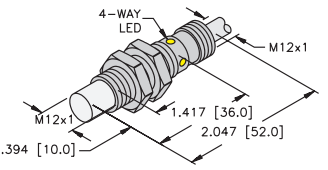
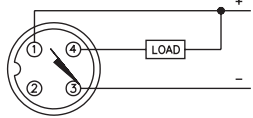
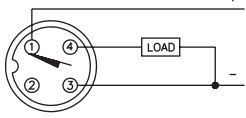
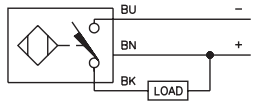
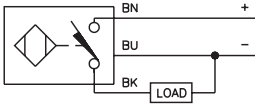


Sensor Type	A	B	C	D	E	F
Si3.5	15.00	5.00	15.00	0	0	0
Si5	10.00	0	5.00	0	0	0
Si15	30.00	10.00	30.00	5.00	5.00	5.00

Dimensions are in mm.

# Specialty Sensors | Washdown

## Threaded Metal Barrels with Cable or Connector and 3-Wire DC Outputs

Housing Style	Dimension Drawings		
	<p><b>A</b></p>  <p>8 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>B</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection</p>	
<p><b>C</b></p>  <p>12 mm - Nonembeddable, M12 Eurofast Connection</p>	<p><b>D</b></p>  <p>12 mm - Embeddable, Potted-in Cable</p>	<p><b>E</b></p>  <p>12 mm - Nonembeddable, Potted-in Cable</p>	
Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RKV 4T-*; RKV 4T-*/S90</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4T-*; RKV 4T-*/S90</p>	<p><b>3</b></p> 	<p><b>4</b></p> 
A4		3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>		<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Washdown

### Threaded Metal Barrels with Cable or Connector and 3-Wire DC Outputs


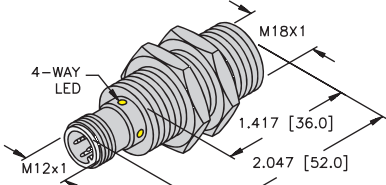
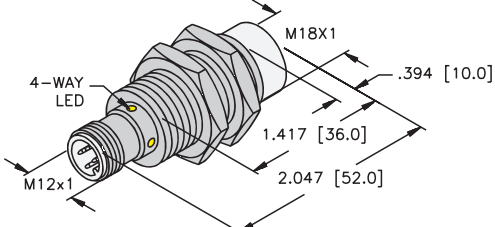
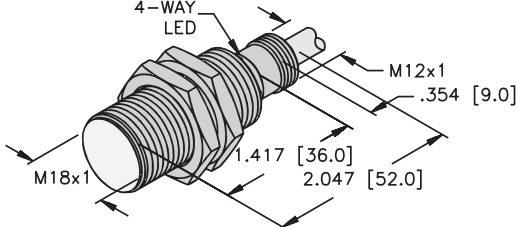
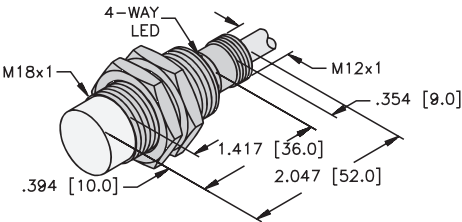
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1.5-EG08WD-AN6X-H1341 4602211	Washdown	1.5	3-wire DC NPN	10-30 VDC	3000	≤150	-25 to +85	IP68/69K	SS	PVDF	N/A	YE	--	A	1	A4
Bi1.5-EG08WD-AP6X-H1341 4602210	Washdown	1.5	3-wire DC PNP	10-30 VDC	3000	≤150	-25 to +85	IP68/69K	SS	PVDF	N/A	YE	--	A	2	A4
Bi4U-EM12WD-AN6X-H1141 1634841	Uprox+, Washdown	4	3-wire DC NPN	10-30 VDC	2000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	--	B	1	A4
Bi4U-EM12WD-AP6X-H1141 1634812	Uprox+, Washdown	4	3-wire DC PNP	10-30 VDC	2000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	--	B	2	A4
Ni10U-EM12WD-AN6X-H1141 1634837	Uprox+, Washdown	10	3-wire DC NPN	10-30 VDC	1000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	--	C	1	A4
Ni10U-EM12WD-AP6X-H1141 1634814	Uprox+, Washdown	10	3-wire DC PNP	10-30 VDC	1000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	--	C	2	A4
Bi4U-EM12WD-AN6X 1634842	Uprox+, Washdown	4	3-wire DC NPN	10-30 VDC	2000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	2M/PP	D	3	A4
Bi4U-EM12WD-AP6X 1634811	Uprox+, Washdown	4	3-wire DC PNP	10-30 VDC	2000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	2M/PP	D	4	A4
Ni10U-EM12WD-AP6X 1634813	Uprox+, Washdown	10	3-wire DC PNP	10-30 VDC	1000	≤200	-40 to +100	IP68/69K	SS	PVDF	N/A	YE	2M/PP	E	4	A4

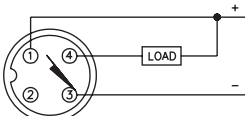
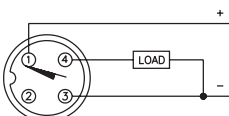
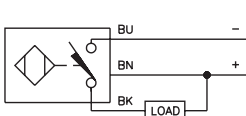
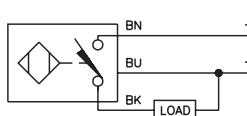
We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Washdown

## Threaded Metal Barrels with Cable or Connector and 3-Wire DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>18 mm - Nonembeddable, M12 Eurofast Connection</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, Potted-in Cable</p>
<p><b>D</b></p>  <p>18 mm - Nonembeddable, Potted-in Cable</p>	

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RKV 4T-*/S90</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4T-*/S90</p>	<p><b>3</b></p> 	<p><b>4</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



## Specialty Sensors | Washdown

### Threaded Metal Barrels with Cable or Connector and 3-Wire DC Outputs


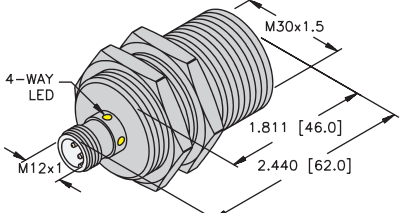
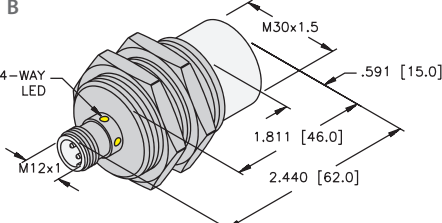
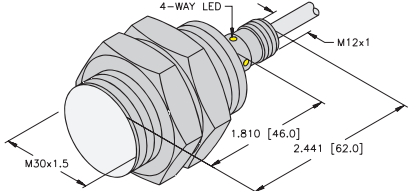
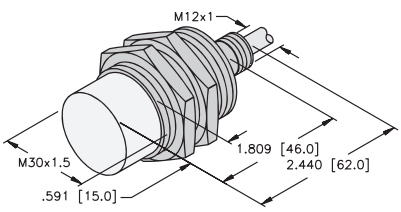
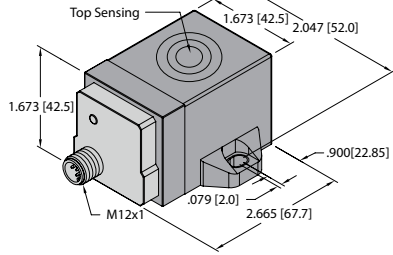
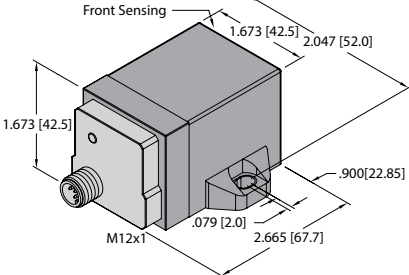
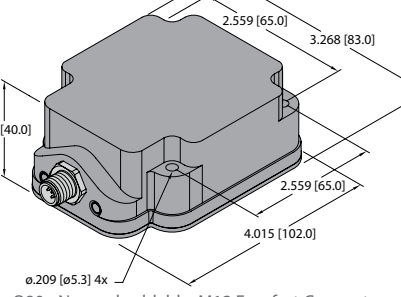
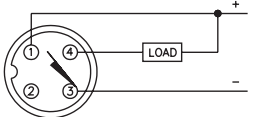
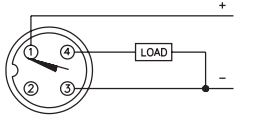
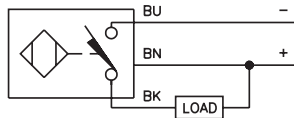
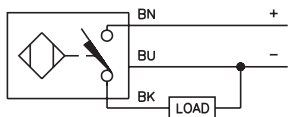
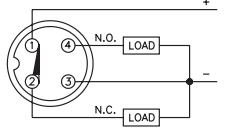
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi8U-EM18WD-AN6X-H1141</b> 1634839	Uprox+, Washdown	8	3-wire DC NPN	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	A	1	A4
<b>Bi8U-EM18WD-AP6X-H1141</b> 1634816	Uprox+, Washdown	8	3-wire DC PNP	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	A	2	A4
<b>Ni15U-EM18WD-AN6X-H1141</b> 1634835	Uprox+, Washdown	15	3-wire DC NPN	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	B	1	A4
<b>Ni15U-EM18WD-AP6X-H1141</b> 1634818	Uprox+, Washdown	15	3-wire DC PNP	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	B	2	A4
<b>Bi8U-EM18WD-AN6X</b> 1634840	Uprox+, Washdown	8	3-wire DC NPN	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	C	3	A4
<b>Bi8U-EM18WD-AP6X</b> 1634815	Uprox+, Washdown	8	3-wire DC PNP	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	C	4	A4
<b>Ni15U-EM18WD-AN6X</b> 1634836	Uprox+, Washdown	15	3-wire DC NPN	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	D	3	A4
<b>Ni15U-EM18WD-AP6X</b> 1634817	Uprox+, Washdown	15	3-wire DC PNP	10-30 VDC	1500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	D	4	A4

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Washdown

## Rectangular and Threaded Metal Barrels with Cable or Connector and 3-Wire DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>B</b></p>  <p>30 mm - Nonembeddable, M12 Eurofast Connection</p>
<p><b>C</b></p>  <p>30 mm - Embeddable, Potted-in Cable</p>	<p><b>D</b></p>  <p>30 mm - Nonembeddable, Potted-in Cable</p>	<p><b>E</b></p>  <p>Q42T - Nonembeddable, M12 Eurofast Connector</p>
<p><b>F</b></p>  <p>Q42F - Nonembeddable, M12 Eurofast Connector</p>	<p><b>G</b></p>  <p>Q80 - Nonembeddable, M12 Eurofast Connector</p>	
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RKV 4T-*/S90</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4T-*/S90</p>	<p><b>3</b></p> 
<p><b>4</b></p> 	<p><b>5</b></p>  <p>Mating Cordset: RKV 4.4T-*</p>	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox, Q42) ≤20 mA (Uprox+, Uprox 3, Q80)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Washdown

### Rectangular and Threaded Metal Barrels with Cable or Connector and 3-Wire DC Outputs


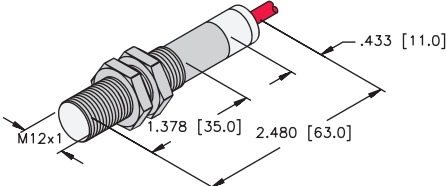
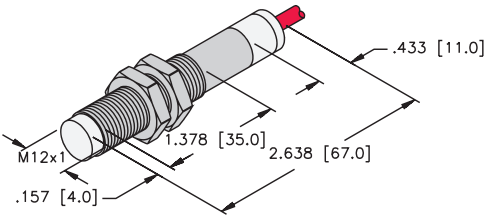
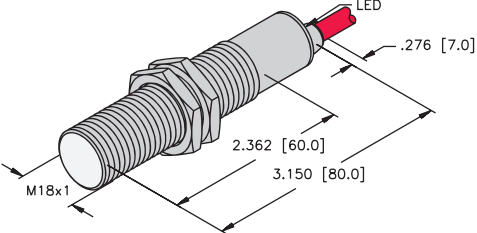
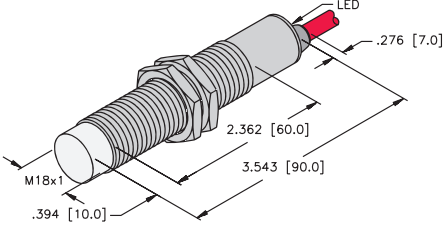
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi15U-EM30WD-AN6X-H1141 1634834	Uprox+, Washdown	15	3-wire DC NPN	10-30 VDC	750	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	A	1	A4
Bi15U-EM30WD-AP6X-H1141 1634820	Uprox+, Washdown	15	3-wire DC PNP	10-30 VDC	750	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	A	2	A4
Ni30U-EM30WD-AN6X-H1141 1634832	Uprox+, Washdown	30	3-wire DC NPN	10-30 VDC	500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	B	1	A4
Ni30U-EM30WD-AP6X-H1141 1634822	Uprox+, Washdown	30	3-wire DC PNP	10-30 VDC	500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	--	B	2	A4
Bi15U-EM30WD-AN6X 1634843	Uprox+, Washdown	15	3-wire DC NPN	10-30 VDC	750	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	C	3	A4
Bi15U-EM30WD-AP6X 1634819	Uprox+, Washdown	15	3-wire DC PNP	10-30 VDC	750	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	C	4	A4
Ni30U-EM30WD-AN6X 1634833	Uprox+, Washdown	30	3-wire DC NPN	10-30 VDC	500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	D	3	A4
Ni30U-EM30WD-AP6X 1634821	Uprox+, Washdown	30	3-wire DC PNP	10-30 VDC	500	≤200	-40 to +100	IP68/69K	SS	LCP	N/A	YE	2M/PP	D	4	A4
Ni50U-Q42TWD-VP6X-H1141 1538306	Uprox+, Washdown	50	4-wire DC PNP	10-30 VDC	250	≤200	-40 to +100	IP68/69K	PA 12	PA 12	N/A	YE	--	E	5	A4
Ni50U-Q42FWD-VP6X-H1141 1538305	Uprox+, Washdown	50	4-wire DC PNP	10-30 VDC	250	≤200	-40 to +100	IP68/69K	PA 12	PA 12	N/A	YE	--	F	5	A4
Ni75U-Q80WD-VP6X2-H1141 1625920	Uprox+, Washdown	75	4-wire DC PNP	10-30 VDC	250	≤200	-25 to +70	IP68/69K	PPS	PPS	GN	YE	--	G	5	A4

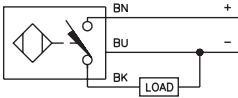
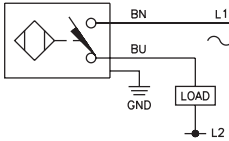
We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | High Temperature

## Threaded Metal Barrels with Cable and AC or DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>
<p><b>B</b></p>  <p>12 mm - Nonembeddable, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, Partial Threading, Potted-In Cable</p>
<p><b>D</b></p>  <p>18 mm - Nonembeddable, Partial Threading, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ,RZ,FZ)	
<p>Line Frequency: <math>\geq 50\text{ Hz}</math>... <math>\leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | High Temperature

### Threaded Metal Barrels with Cable and AC or DC Outputs


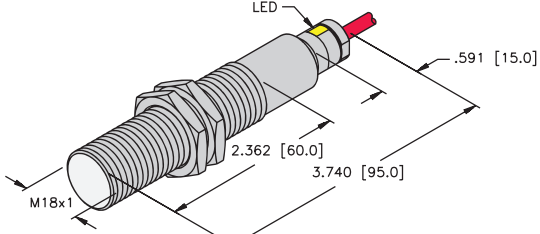
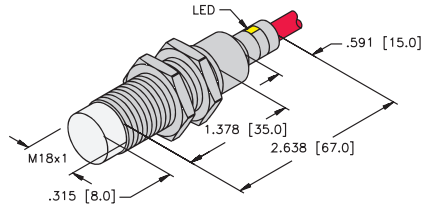
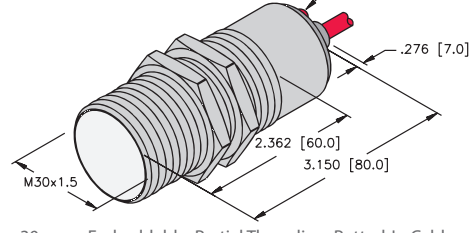
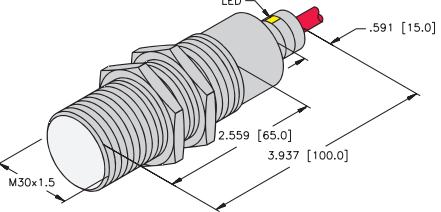
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	End Cap	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi2-EM12D-AP6/S120</b> 4614512	High Temp. 120 °C	2	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP67	SS	PTFE	PTFE	N/A	N/A	2M/PTFE	A	1	A4
<b>Ni4-EM12D-AP6/S120</b> 1633110	High Temp. 120 °C	4	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP67	SS	PTFE	PTFE	N/A	N/A	2M/PTFE	B	1	A4
<b>Bi5-M18-AP6X/S120</b> 4611030	High Temp. 120 °C	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP67	CPB	PA 12	EPTR	N/A	YE	2M/Silicone	C	1	A4
<b>Bi5-M18-AZ3X/S120</b> 4310410	High Temp. 120 °C	5	2-wire AC	20-250 VAC	20	≤100	-25 to +120	IP67	CPB	PA 12	EPTR	N/A	YE	2M/Silicone	C	2	A6
<b>Ni8-M18-AZ3X/S120</b> 4310530	High Temp. 120 °C	8	2-wire AC	20-250 VAC	20	≤400	-25 to +120	IP67	CPB	PA 12	EPTR	N/A	YE	2M/Silicone	D	2	A6
<b>Ni8-M18-AP6X/S120</b> 4611230	High Temp. 120 °C	8	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP67	CPB	PA 12	EPTR	N/A	YE	2M/Silicone	D	1	A4

We reserve the right to make technical alterations without prior notice.

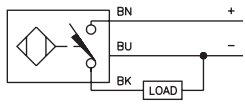
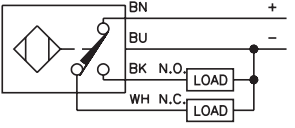
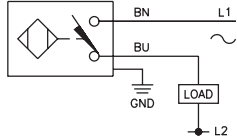
Specialty Sensors

# Specialty Sensors | High Temperature

## Threaded Metal Barrels with Cable and AC or DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, Partial Threading, Potted-In Cable</p>
<p><b>B</b></p>  <p>18 mm - Nonembeddable, Partial Threading, Potted-In Cable</p>	<p><b>C</b></p>  <p>30 mm - Embeddable, Partial Threading, Potted-In Cable</p>
<p><b>D</b></p>  <p>30 mm - Embeddable, Partial Threading, Potted-In Cable</p>	

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥3.0 mA</p>	<p>Inrush Current: ≤8 A (≤10ms max. 5 Hz) ≤1 A (≤10 ms max. 5 Hz) 12 mm ≤0.2 A (≤10 ms max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

## Specialty Sensors | High Temperature


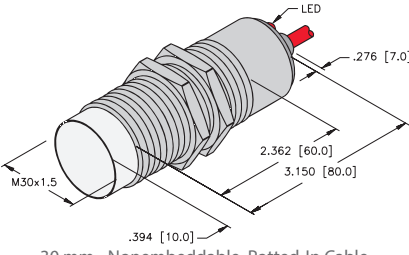
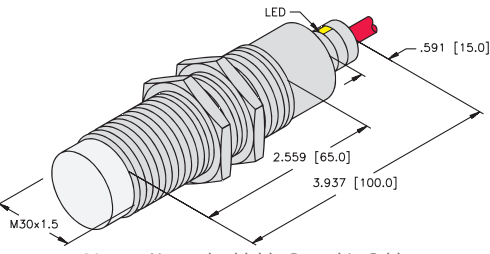
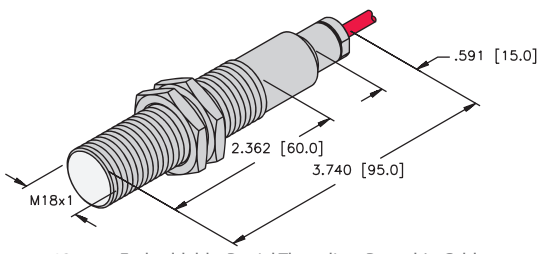
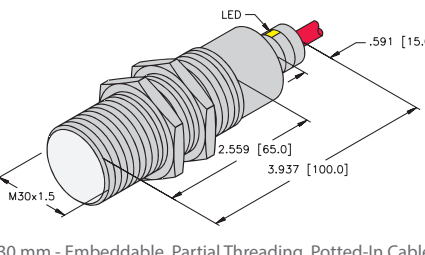
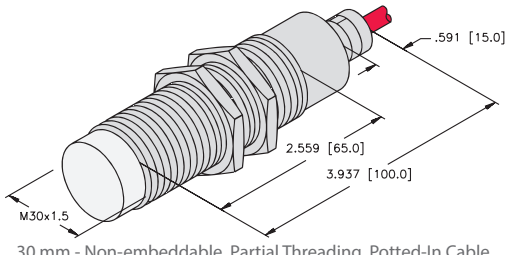
### Threaded Metal Barrels with Cable and AC or DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	End Cap	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi5-EM18D-VP6X/S120 4614900	High Temp. 120 °C	5	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP68/69K	SS	PTFE	PTFE	N/A	YE	2M/PTFE	A	2	A4
Ni7-EM18D-VP6X/S120 4632100	High Temp. 120 °C	7	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP68/69K	SS	PTFE	PTFE	N/A	YE	2M/PTFE	B	2	A4
Bi10-M30-AP6X/S120 4617010	High Temp. 120 °C	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP67	CPB	PA 12	PA 12	N/A	YE	2M/Silicone	C	1	A4
Bi10-M30-AZ3X/S120 4316410	High Temp. 120 °C	10	2-wire AC	20-250 VAC	20	≤400	-25 to +120	IP67	CPB	PA 12	PA 12	N/A	YE	2M/Silicone	C	3	A6
Bi10-EM30D-VP6X/S120 4617035	High Temp. 120 °C	10	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP68/69K	SS	PTFE	PTFE	N/A	YE	2M/PTFE	D	2	A4

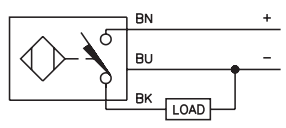
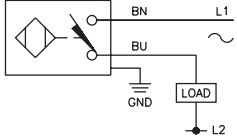
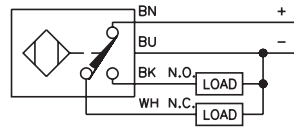
We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | High Temperature

## Threaded Metal Barrels with Cable and AC or DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>
<p><b>B</b></p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, Partial Threading, Potted-In Cable</p>
<p><b>D</b></p>  <p>30 mm - Embeddable, Partial Threading, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Non-embeddable, Partial Threading, Potted-In Cable</p>

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>



## Specialty Sensors | High Temperature

### Threaded Metal Barrels with Cable and AC or DC Outputs


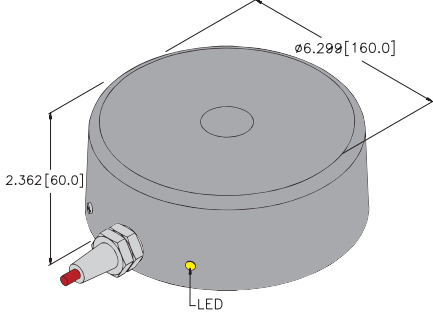
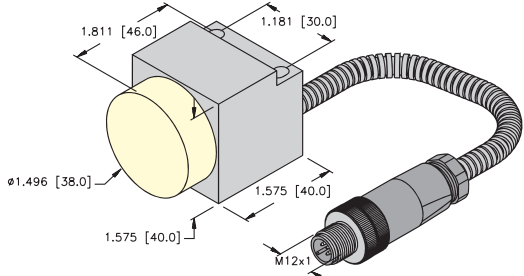
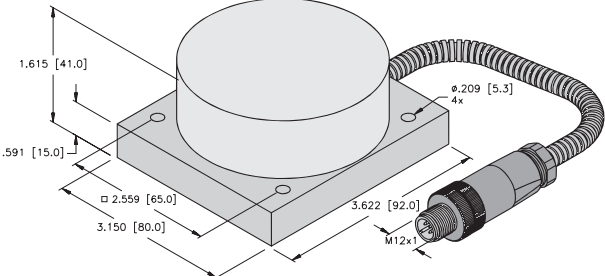
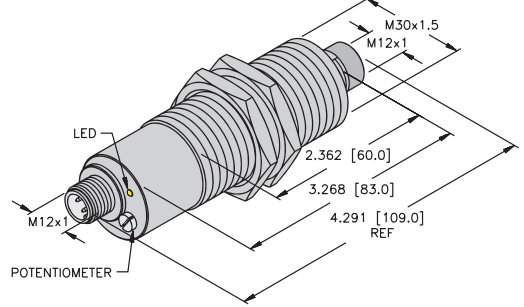
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	End Cap	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni15-M30-AP6X/S120 4617210	High Temp. 120 °C	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +120	IP67	CPB	PA 12	PA 12	N/A	YE	2M/Silicone	A	1	A4
Ni15-M30-AZ3X/S120 4316506	High Temp. 120 °C	15	2-wire AC	20-250 VAC	20	≤400	-25 to +120	IP67	CPB	PA 12	PA 12	N/A	YE	2M/Silicone	A	2	A6
Ni15-EM30D-VP6X/S120 4617410	High Temp. 120 °C	15	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +120	IP68/69K	SS	PTFE	PTFE	N/A	YE	2M/PTFE	B	3	A4
Bi5-EM18-AP6/S907 4617425	High Temp. 160 °C	5	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +160	IP67	SS	PEEK	PTFE	N/A	N/A	2M/PTFE	C	1	A4
Bi10-EM30-AP6/S907 4614513	High Temp. 160 °C	10	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +160	IP67	SS	PEEK	PTFE	N/A	N/A	2M/PTFE	D	1	A4
Ni15-EM30-AP6/S907 4617412	High Temp. 160 °C	15	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +160	IP67	SS	PEEK	PTFE	N/A	N/A	2M/PTFE	E	1	A4

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

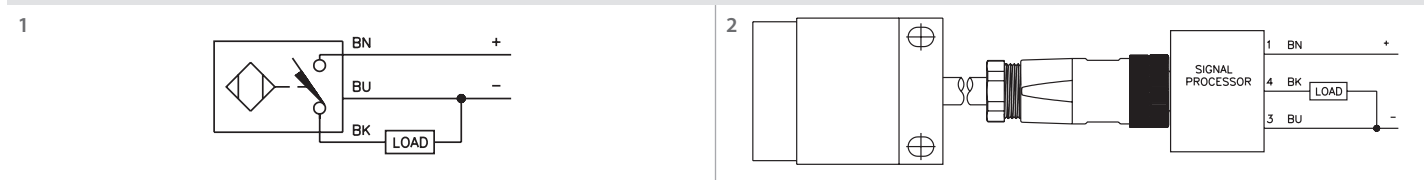
# Specialty Sensors | High Temperature

## Rectangular and Round Housings

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>160 mm - Nonembeddable</p>
<p><b>B</b></p>  <p>CQ40 - Nonembeddable</p>	<p><b>C</b></p>  <p>CQ80 - Nonembeddable</p>
<p><b>D</b></p>  <p>30 mm - Signal Processor</p>	

We reserve the right to make technical alterations without prior notice.

### Wiring Diagrams/Mating Cordsets



A20 3-wire DC -High Temp (AP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 2\text{ V (120 }^\circ\text{C)}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 420\text{ mA on 400 mA Load Current}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p>	<p>Temperature Drift: <math>\leq \pm 20\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

**Note:**  
CQ40 and CQ80 sensors require signal processor for operation.

## Specialty Sensors | High Temperature


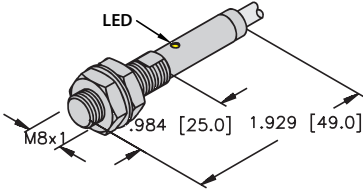
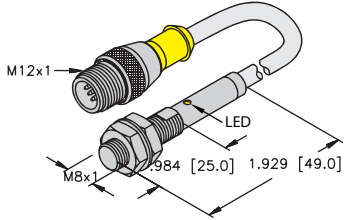
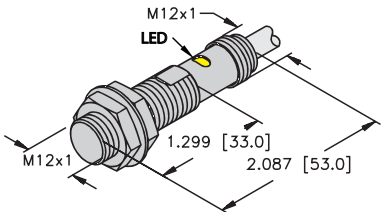
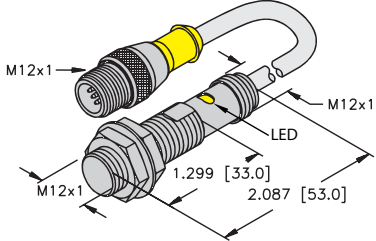
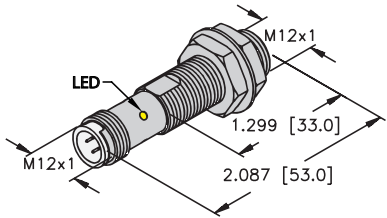
### Rectangular and Round Housings

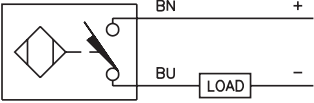
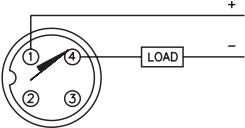
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	End Cap	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni100-Q160-AP44X/S120 1440012	High Temp. 120 °C	100	3-wire DC PNP	10-55 VDC	50	≤400	-25 to +120	IP67	PPO	PPO	--	N/A	YE	2M/Silicone	A	1	A20
Ni25-CQ40/S1102 5M 1602410	High Temp. 250 °C	25	Remote	--	40	Remote	0 to +250	IP60	AL	PEEK	PEEK	N/A	N/A	5M/PTFE	B	2	--
Ni25-CQ40/S1102 10M 1602403	High Temp. 250 °C	25	Remote	--	40	Remote	0 to +250	IP60	AL	PEEK	PEEK	N/A	N/A	10M/PTFE	B	2	--
Ni40-CQ80/S1102 5M 1602404	High Temp. 250 °C	40	Remote	--	40	Remote	0 to +250	IP60	AL	PEEK	PEEK	N/A	N/A	5M/PTFE	C	2	--
EM30-AP6X2-H1141/S1102 1602411	Signal Processor	N/A	3-wire DC PNP	10-30 VDC	40	≤200	-20 to +70	IP67	SS	SS	--	GN	YE	--	D	2	A20

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Stainless Front Face

## Embeddable Threaded Metal Barrels with 2-Wire DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>D</b></p>  <p>12 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>E</b></p>  <p>12 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p>  <p>Mating Cordset: RKV 4.23T-*</p>

A21 2-wire DC Stainless Front Face (AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 3.5</math> V Polarized</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Temperature Drift: <math>\leq \pm 20\%</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.8</math> mA</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 10\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Stainless Front Face

### Embeddable Threaded Metal Barrels with 2-Wire DC Outputs


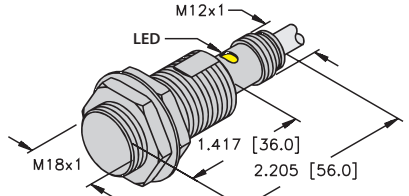
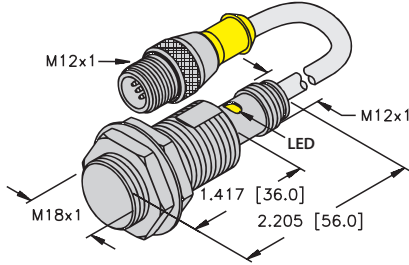
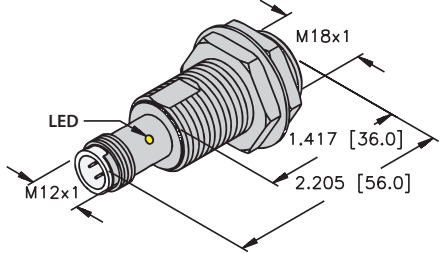
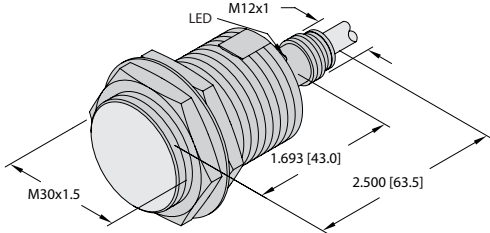
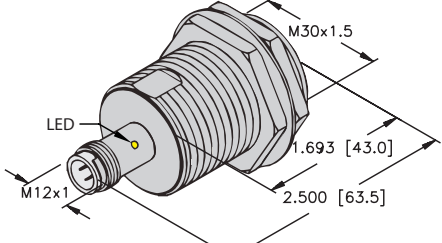
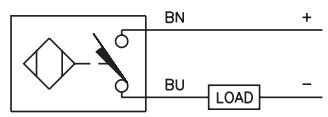
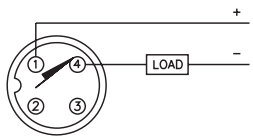
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi1.5-EG08F-AG6X 4614628	Full Stainless Steel	1.5	2-wire DC	10-30 VDC	200	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/ PVC	A	1	A21
Bi1.5-EGT08F-AG6X 4614677	Full Stainless Steel, PTFE	1.5	2-wire DC	10-30 VDC	200	≤100	-25 to +70	IP67	TC	SS	N/A	RD	2M/ PVC	A	1	A21
Bi1.5-EG08F-AG6X-0.3-RS4.23T 4614684	Full Stainless Steel	1.5	2-wire DC	10-30 VDC	200	≤100	-25 to +70	IP67	SS	SS	N/A	RD	0.3M/ PVC	B	2	A21
Bi1.5-EGT08F-AG6X-0.2-RS4.23T 4614686	Full Stainless Steel, PTFE	1.5	2-wire DC	10-30 VDC	200	≤100	-25 to +70	IP67	TC	SS	N/A	RD	0.2M/ PVC	B	2	A21
Bi2-EG08F-AG6X 4614664	Full Stainless Steel	2	2-wire DC	10-30 VDC	200	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/ PVC	A	1	A21
Bi2-EG12F-AG6X 4614634	Full Stainless Steel	2	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/ PVC	C	1	A21
Bi2-EGT12F-AG6X 46146651	Full Stainless Steel, PTFE	2	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	TC	SS	N/A	RD	2M/ PVC	C	1	A21
Bi2-EG12F-AG6X-0.3-RS4.23T 4614693	Full Stainless Steel	2	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	0.3M/ PVC	D	2	A21
Bi3-EG12F-AG6X 4614665	Full Stainless Steel	3	2-wire DC	10-30 VDC	80	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/ PVC	C	1	A21
Bi2-EG12F-AG6X-H1141 4614637	Full Stainless Steel	2	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	--	E	2	A21

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Stainless Front Face

## Embeddable Threaded Metal Barrels with 2-Wire DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>
<p><b>D</b></p>  <p>30 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection, Stainless Steel</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p>  <p>Mating Cordset: RKV 4.23T-*</p>
A21 2-wire DC Stainless Front Face (AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 3.5</math> V Polarized</p> <p>Trigger Current for Short Circuit</p> <p>Protection: <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Minimum Load Current: <math>\geq 3.0</math> mA</p>	<p>Temperature Drift: <math>\leq \pm 20\%</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.8</math> mA</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 10\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Stainless Front Face

### Embeddable Threaded Metal Barrels with 2-Wire DC Outputs


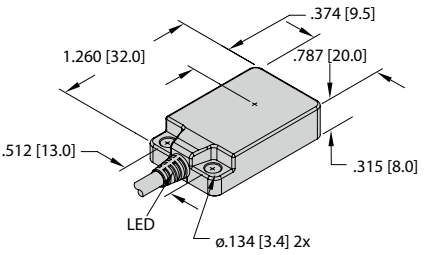
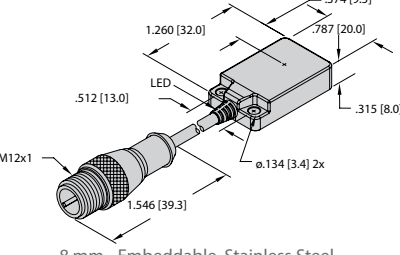
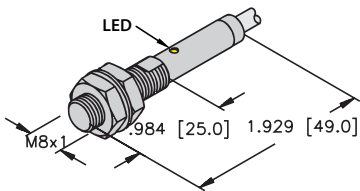
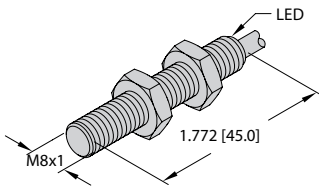
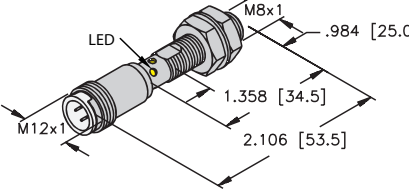
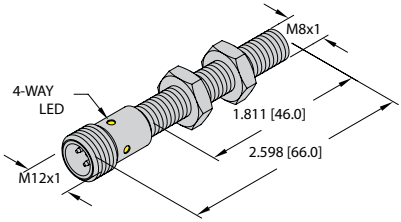
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi5-EG18F-AG6X 4614640	Full Stainless Steel	5	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/PVC	A	1	A21
Bi5-EGT18F-AG6X 46146400	Full Stainless Steel, PTFE	5	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	TC	SS	N/A	RD	2M/PVC	A	1	A21
Bi5-EG18F-AG6X-0.3-RS4.23T 4614694	Full Stainless Steel	5	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	0.3M/ PVC	B	2	A21
Bi7-EG18F-AG6X 4614666	Full Stainless Steel	7	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/PVC	A	1	A21
Bi5-EG18F-AG6X-H1141 4614643	Full Stainless Steel	5	2-wire DC	10-30 VDC	100	≤100	-25 to +70	IP67	SS	SS	N/A	RD	--	C	2	A21
Bi12-EG30F-AG6X 4614667	Full Stainless Steel	12	2-wire DC	10-30 VDC	50	≤100	-25 to +70	IP67	SS	SS	N/A	RD	2M/PVC	D	1	A21
Bi10-EG30F-AG6X-H1141 4614649	Full Stainless Steel	10	2-wire DC	10-30 VDC	50	≤100	-25 to +70	IP67	SS	SS	N/A	RD	--	E	2	A21

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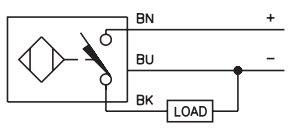
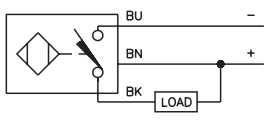
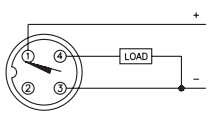
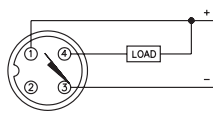
Specialty Sensors

# Specialty Sensors | Stainless Front Face

## Embeddable Rectangular and Threaded Metal Barrels with 3-Wire DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>8 mm - Embeddable, Stainless Steel, Potted-In Cable</p>	<p><b>B</b></p>  <p>8 mm - Embeddable, Stainless Steel, M12 Eurofast Quick Disconnect</p>
<p><b>C</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>D</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>E</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>
<p><b>F</b></p>  <p>8 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>		

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RKV 4T-*</p>

A22 3-wire DC Stainless Front Face (AP, AN, RP, RN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 2V</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current</p> <p>No-Load Current: <math>\leq 10</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p>	<p>Temperature Drift: <math>\leq \pm 20\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 10\%</math> of Rated Operating Distance</p>
A23 3-wire DC Stainless Front Face Ext Range (AP, AN, RP, RN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 20%</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 2V</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current</p> <p>No-Load Current: <math>\leq 10</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p>	<p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 5\%</math> of Rated Operating Distance</p>



## Specialty Sensors | Stainless Front Face

### Embeddable Rectangular and Threaded Metal Barrels with 3-Wire DC Outputs


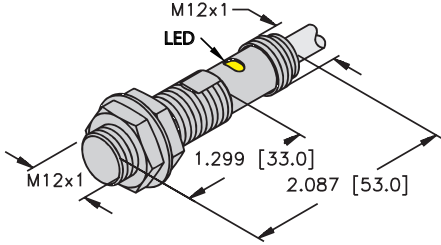
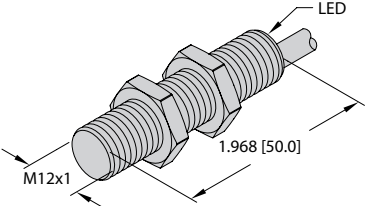
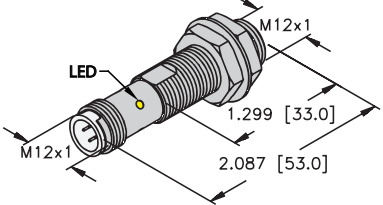
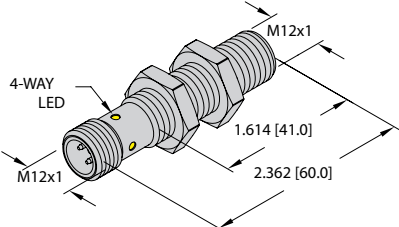
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi7-Q08F-AN6X</b> 1608914	Full Stainless Steel	7	3-wire DC NPN	10-30 VDC	200	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	A	2	A23
<b>Bi7-Q08F-AP6X</b> 1608916	Full Stainless Steel	7	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	A	1	A23
<b>Bi7-Q08F-AP6X-0.2-RS4T</b> 16089160	Full Stainless Steel	7	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	0.2M/TPU	B	3	A23
<b>Bi1.5-EG08F-AN6X</b> 4614627	Full Stainless Steel	1.5	3-wire DC NPN	10-30 VDC	200	≤200	-25 to +70	IP67	SS	SS	N/A	YE	2M/PVC	C	2	A22
<b>Bi3-EG08FE-AN6X</b> 4614712	Full Stainless Steel	3	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +85	IP68	SS	SS	N/A	YE	2M/TPU	D	2	A23
<b>Bi1.5-EG08F-AP6X</b> 4614626	Full Stainless Steel	1.5	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP67	SS	SS	N/A	YE	2M/PVC	C	1	A22
<b>Bi1.5-EGT08F-AP6X</b> 4614678	Full Stainless Steel, PTFE	1.5	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP67	TC	SS	N/A	YE	2M/PVC	C	1	A22
<b>Bi3-EG08FE-AP6X</b> 4614704	Full Stainless Steel	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +85	IP68	SS	SS	N/A	YE	2M/TPU	D	1	A23
<b>Bi3-EGT08FE-AP6X</b> 46147043	Full Stainless Steel, PTFE	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +85	IP68	TC	SS	N/A	YE	2M/TPU	D	1	A23
<b>Bi1.5-EG08F-AN6X-H1341</b> 4614630	Full Stainless Steel	1.5	3-wire DC NPN	10-30 VDC	200	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	E	4	A22
<b>Bi3-EG08FE-AN6X-H1341</b> 4614711	Full Stainless Steel	3	3-wire DC NPN	10-30 VDC	1000	≤200	-25 to +85	IP68	SS	SS	N/A	YE	--	F	4	A23
<b>Bi1.5-EG08F-AP6X-H1341</b> 4614629	Full Stainless Steel	1.5	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	E	3	A22
<b>Bi3-EG08FE-AP6X-H1341</b> 4614703	Full Stainless Steel	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +85	IP68	SS	SS	N/A	YE	--	F	3	A23
<b>Bi3-EGT08FE-AP6X-H1341</b> 46147030	Full Stainless Steel,PTFE	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +85	IP68	TC	SS	N/A	YE	--	F	3	A23
<b>Bi3-EGT08FE-AP6X-H1341/S1589</b> 46147032	Full Stainless Steel,PTFE, Weldguard	3	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +85	IP68	TC	WG	N/A	YE	--	F	3	A23

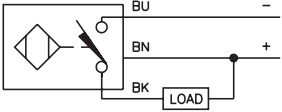
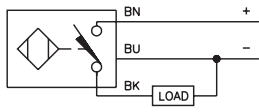
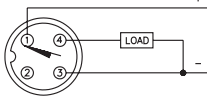
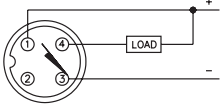
We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Stainless Front Face

## Embeddable Threaded Metal Barrels with 3-Wire DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>
<p><b>B</b></p>  <p>12 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>C</b></p>  <p>12 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>
<p><b>D</b></p>  <p>12 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>	

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RKV 4T-*</p>

A22 3-wire DC Stainless Front Face (AP, AN, RP, RN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 2V</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current</p> <p>No-Load Current: <math>\leq 10</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p>	<p>Temperature Drift: <math>\leq \pm 20\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 10\%</math> of Rated Operating Distance</p>
A23 3-wire DC Stainless Front Face Ext Range (AP, AN, RP, RN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 20%</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 2V</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current</p> <p>No-Load Current: <math>\leq 10</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p>	<p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 5\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Stainless Front Face

### Embeddable Threaded Metal Barrels with 3-Wire DC Outputs


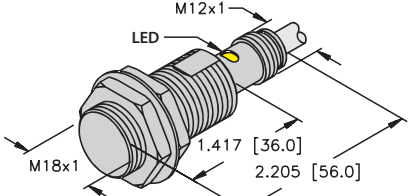
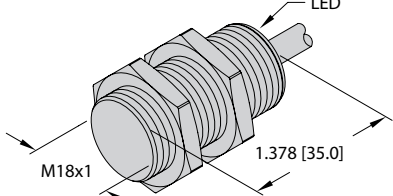
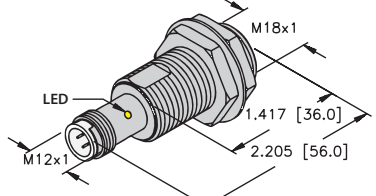
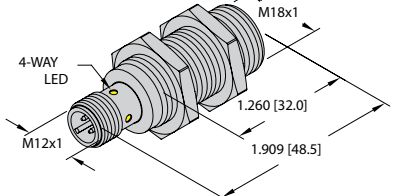
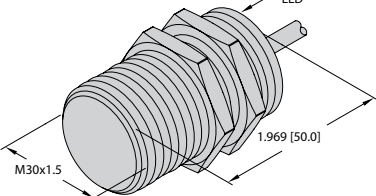
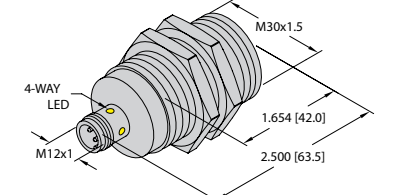
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi6-EG12FE-AN6X</b> 4614721	Full Stainless Steel	6	3-wire DC NPN	10-30 VDC	600	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	B	2	A23
<b>Bi2-EG12F-AP6X</b> 4614632	Full Stainless Steel	2	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	SS	SS	N/A	YE	2M/PVC	A	1	A22
<b>Bi6-EG12FE-AP6X</b> 4614720	Full Stainless Steel	6	3-wire DC PNP	10-30 VDC	600	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	B	1	A23
<b>Bi2-EG12F-AN6X-H1141</b> 4614636	Full Stainless Steel	2	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	C	4	A22
<b>Bi6-EG12FE-AN6X-H1141</b> 4614714	Full Stainless Steel	6	3-wire DC NPN	10-30 VDC	600	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	--	D	4	A23
<b>Bi6-EGT12FE-AN6X-H1141</b> 46147140	Full Stainless Steel, PTFE	6	3-wire DC NPN	10-30 VDC	600	≤200	-25 to +70	IP68/69K	TC	SS	N/A	YE	--	D	4	A23
<b>Bi2-EG12F-AP6X-H1141</b> 4614635	Full Stainless Steel	2	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	C	3	A22
<b>Bi2-EGT12F-AP6X-H1141</b> 46146971	Full Stainless Steel, PTFE	2	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	TC	SS	N/A	YE	--	C	3	A22
<b>Bi6-EG12FE-AP6X-H1141</b> 4614706	Full Stainless Steel	6	3-wire DC PNP	10-30 VDC	600	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	--	D	3	A23
<b>Bi6-EGT12FE-AP6X-H1141</b> 46147060	Full Stainless Steel, PTFE	6	3-wire DC PNP	10-30 VDC	600	≤200	-25 to +70	IP68/69K	TC	SS	N/A	YE	--	D	3	A23
<b>Bi6-EGT12FE-AP6X-H1141/S1589</b> 46147061	Full Stainless Steel, PTFE, Weldguard	6	3-wire DC PNP	10-30 VDC	600	≤200	-25 to +70	IP68/69K	TC	WG	N/A	YE	--	D	3	A23

We reserve the right to make technical alterations without prior notice.

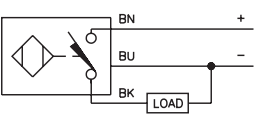
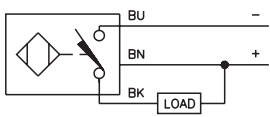
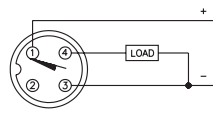
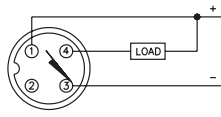
Specialty Sensors

# Specialty Sensors | Stainless Front Face

## Embeddable Threaded Metal Barrels with 3-Wire DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>
<p><b>B</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>
<p><b>D</b></p>  <p>18 mm - Embeddable, Stainless Steel Barrel, M12 Eurofast Quick Disconnect</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, Stainless Steel Barrel, Potted-In Cable</p>
<p><b>F</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection, Stainless Steel</p>	

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RKV 4T-*</p>

A22 3-wire DC Stainless Front Face (AP, AN, RP, RN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p>No-Load Current: <math>\leq 10\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p>	<p>Temperature Drift: <math>\leq \pm 20\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 10\%</math> of Rated Operating Distance</p>
A23 3-wire DC Stainless Front Face Ext Range (AP, AN, RP, RN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 20%</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 2\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p>No-Load Current: <math>\leq 10\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p>	<p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 5\%</math> of Rated Operating Distance</p>

## Specialty Sensors | Stainless Front Face

### Embeddable Threaded Metal Barrels with 3-Wire DC Outputs


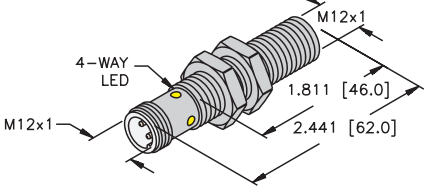
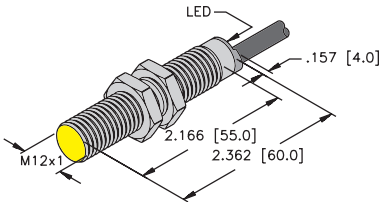
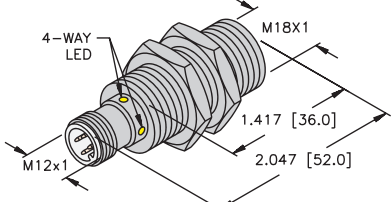
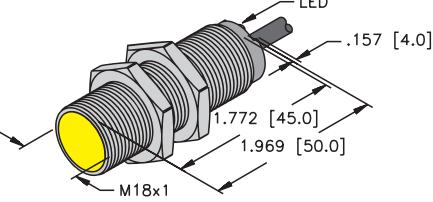
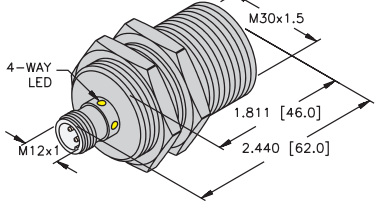
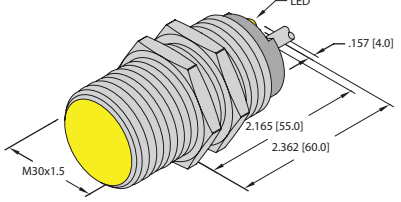
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi5-EG18F-AN6X</b> 4614639	Full Stainless Steel	5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	SS	SS	N/A	YE	2M/PVC	A	2	A22
<b>Bi10-EG18F-AN6X</b> 4614723	Full Stainless Steel	10	3-wire DC NPN	10-30 VDC	200	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	B	2	A23
<b>Bi10-EG18F-AP6X</b> 4614722	Full Stainless Steel	10	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	B	1	A23
<b>Bi5-EG18F-AN6X-H1141</b> 4614642	Full Stainless Steel	5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	C	4	A22
<b>Bi10-EG18F-AN6X-H1141</b> 4614716	Full Stainless Steel	10	3-wire DC NPN	10-30 VDC	200	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	--	D	4	A23
<b>Bi5-EG18F-AP6X-H1141</b> 4614641	Full Stainless Steel	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	C	3	A22
<b>Bi5-EGT18F-AP6X-H1141</b> 4614675	Full Stainless Steel, PTFE	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	TC	SS	N/A	YE	--	C	3	A22
<b>Bi10-EG18F-AP6X-H1141</b> 4614708	Full Stainless Steel	10	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP67	SS	SS	N/A	YE	--	D	3	A23
<b>Bi10-EGT18F-AP6X-H1141</b> 46147080	Full Stainless Steel, PTFE	10	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP67	TC	SS	N/A	YE	--	D	3	A23
<b>Bi10-EGT18F-AP6X-H1141/S1589</b> 46147081	Full Stainless Steel, PTFE, Weldguard	10	3-wire DC PNP	10-30 VDC	200	≤200	-25 to +70	IP67	TC	WG	N/A	YE	--	D	3	A23
<b>Bi20-EG30F-AP6X</b> 4614724	Full Stainless Steel	20	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	2M/TPU	E	1	A23
<b>Bi20-EG30F-AP6X-H1141</b> 4614710	Full Stainless Steel	20	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP68/69K	SS	SS	N/A	YE	--	F	3	A23
<b>Bi20-EGT30F-AP6X-H1141</b> 46147100	Full Stainless Steel, PTFE	20	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP68/69K	TC	SS	N/A	YE	--	F	3	A23
<b>Bi20-EGT30F-AP6X-H1141/S1589</b> 46147101	Full Stainless Steel, PTFE, Weldguard	20	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP68/69K	TC	WG	N/A	YE	--	F	3	A23

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

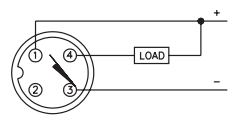
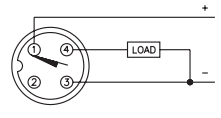
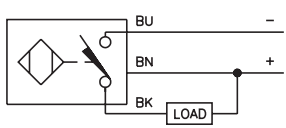
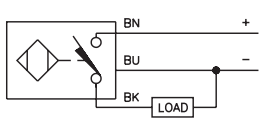
# Specialty Sensors | Mobile Equipment

## Barrel Sensors Designed for use on Vehicles and Equipment

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>12 mm - Embeddable, Partial Threading, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>D</b></p>  <p>18 mm - Embeddable, Partial Threading, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>F</b></p>  <p>30 mm - Embeddable, Partial Threading, Potted-In Cable</p>	

We reserve the right to make technical alterations without prior notice.

### Wiring Diagrams/Mating Cordsets

<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*/S90</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*/S90</p>	<p><b>3</b></p> 	<p><b>4</b></p> 
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### A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)

<p><b>Ripple:</b> ≤10%</p> <p><b>Differential Travel (Hysteresis):</b> 3-15% (5% typical)</p> <p><b>Voltage Drop Across Conducting Sensor:</b> ≤1.8 V</p> <p><b>Trigger Current for Short Circuit Protection:</b> ≥220 mA on 200 mA Load Current          ≥170 mA on 150 mA Load Current          ≥120 mA on 100 mA Load Current</p> <p><b>Off-State (Leakage) Current:</b> ≤0.1 mA</p> <p><b>No-Load Current:</b> ≤15 mA (Ferrite, Uprox)          ≤20 mA (Uprox+, Uprox 3)</p>	<p><b>Time Delay Before Availability:</b> ≤8 ms</p> <p><b>Power-On Effect:</b> Per IEC 947-5-2</p> <p><b>Reverse Polarity Protection:</b> Incorporated</p> <p><b>Wire-Break Protection:</b> Incorporated</p> <p><b>Transient Protection:</b> Per EN 60947-5-2</p> <p><b>Temperature Drift:</b> ≤±10%</p> <p><b>Shock:</b> 30 g, 11 ms</p> <p><b>Vibration:</b> 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p><b>Repeatability:</b> ≤2% of Rated Operating Distance</p>
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### Features

- Load Dump Protection
- Shock Resistant
- EMC Immunity
- Extended Temperature Range
- Broader Operating Voltage
- Improved Sealing and Environmental Protection
- Longer Sensing Range

## Specialty Sensors | Mobile Equipment

### Barrel Sensors Designed for use on Vehicles and Equipment


Part Number/ ID Number	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi4-EM12E-AN45XLD-H1141 1584003	4	3-wire DC NPN	8.4-65 VDC	2000	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	--	A	1	A4
Bi4-EM12E-AP45XLD-H1141 1585000	4	3-wire DC PNP	8.4-65 VDC	2000	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	--	A	2	A4
Bi4-EM12E-AN45XLD 1584004	4	3-wire DC NPN	8.4-65 VDC	2000	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	2M/TPE	B	3	A4
Bi4-EM12E-AP45XLD 1584001	4	3-wire DC PNP	8.4-65 VDC	2000	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	2M/TPE	B	4	A4
Bi8-EM18-AN45XLD-H1141 1584017	8	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	--	C	1	A4
Bi8-EM18-AP45XLD-H1141 1584010	8	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	--	C	2	A4
Bi8-EM18-AN45XLD 1584014	8	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	2M/TPE	D	3	A4
Bi8-EM18-AP45XLD 1584011	8	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	2M/TPE	D	4	A4
Bi15-EM30-AN45XLD-H1141 1584024	15	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	--	E	1	A4
Bi15-EM30-AP45XLD-H1141 1584020	15	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	--	E	2	A4
Bi15-EM30-AN45XLD 1584022	15	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	2M/TPE	F	1	A4
Bi15-EM30-AP45XLD 1584021	15	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	SS	PA12	N/A	YE	2M/TPE	F	2	A4

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Mobile Equipment

## Rectangular Sensors Designed for use on Vehicles and Equipment

Housing Style	Dimension Drawings
	<p><b>A</b></p> <p>14 mm - Embeddable, Potted-In Cable</p>
<p><b>B</b></p> <p>20 mm - Embeddable, M12 Eurofast Connection</p>	<p><b>C</b></p> <p>20 mm - Embeddable, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p> <p>Mating Cordset: RK 4T-*/S90</p>
<p><b>4</b></p> <p>Mating Cordset: RK 4T-*/S90</p>	<p><b>5</b></p>	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

Features	
<ul style="list-style-type: none"> <li>Load Dump Protection</li> <li>Shock Resistant</li> <li>EMC Immunity</li> <li>Extended Temperature Range</li> </ul>	<ul style="list-style-type: none"> <li>Broader Operating Voltage</li> <li>Improved Sealing and Environmental Protection</li> <li>Longer Sensing Range</li> </ul>

We reserve the right to make technical alterations without prior notice.



## Specialty Sensors | Mobile Equipment

### Rectangular Sensors Designed for use on Vehicles and Equipment


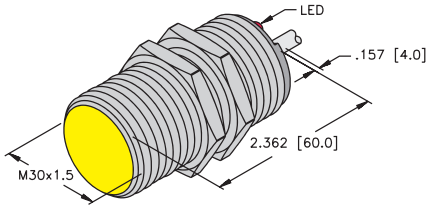
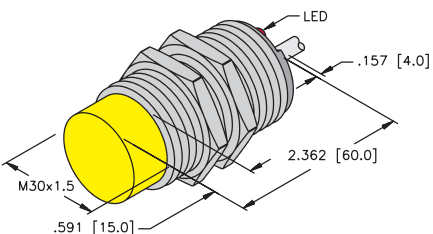
Part Number/ ID Number	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi10-Q14-AN45X2LD</b> 1584032	10	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	2M/TPE	A	1	A4
<b>Bi10-Q14-AP45X2LD</b> 1584031	10	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	2M/TPE	A	2	A4
<b>Bi20-Q20-AN45X2LD-H1141</b> 1584042	20	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	--	B	3	A4
<b>Bi20-Q20-AP45X2LD-H1141</b> 1584040	20	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	--	B	4	A4
<b>Bi20-Q20-AN45X2LD</b> 1584043	20	3-wire DC NPN	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	2M/TPE	C	1	A4
<b>Bi20-Q20-AP45X2LD</b> 1584041	20	3-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	2M/TPE	C	2	A4
<b>Bi20-Q20-VP45X2LD</b> 1584047	20	4-wire DC PNP	8.4-65 VDC	500	≤200	-40 to +85	IP68/69K	PBT	PBT	GN	YE	2M/TPE	C	5	A4

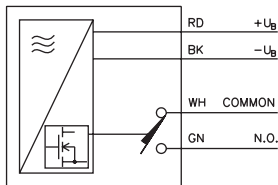
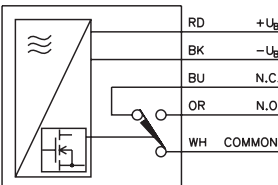
We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | 6A Solid State

## Threaded Metal Barrel Sensors with Cable

Housing Style	Dimension Drawings
	<p>A</p>  <p>30 mm - Embeddable, Potted-In Cable</p>
<p>B</p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets	
<p>1</p> 	<p>2</p> 

Solid State Relay (AM6, VM6)	
<p><b>A10</b></p> <p>Ripple: <math>\leq 10\%</math></p> <p>Output Voltage: <math>\leq 35\text{ V AC}, \leq 50\text{ V DC}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 0.4\text{ V}</math></p> <p>Continuous Load Current: <math>\leq 6\text{ Amp}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>Inrush Current: <math>\leq 8.0\text{ A} (\leq 10.0\text{ ms max } 5\text{ Hz})</math></p> <p>No-Load Current: <math>\leq 25\text{ mA}</math></p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Short Circuit Protected: No</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | 6A Solid State


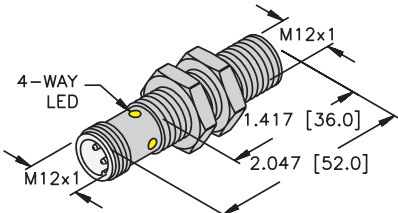
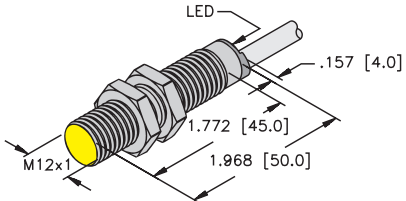
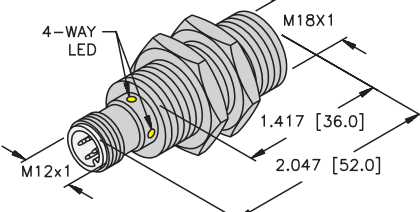
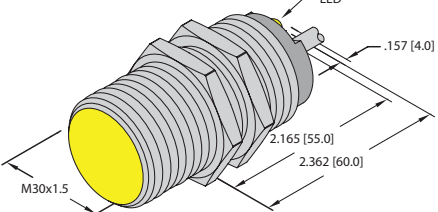
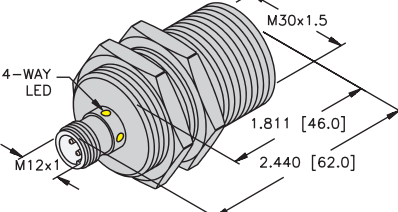
### Threaded Metal Barrel Sensors with Cable

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi12-G30-AM6/37X/S97</b> 1711200	High current rated	12	4-wire DC	10-30 VDC	20	≤6000	-40 to 70	IP67	CPB	PA12	N/A	YE	2M/PVC	A	1	A10
<b>Bi12-G30-VM6/37X/S97</b> 1711290	High current rated	12	5-wire DC	10-30 VDC	20	≤6000	-40 to 70	IP67	CPB	PA12	N/A	YE	2M/PVC	A	2	A10
<b>Ni20-G30-VM6/37X/S97</b> 4205472	High current rated	20	5-wire DC	10-30 VDC	20	≤6000	-40 to 70	IP67	CPB	PA12	N/A	YE	2M/PVC	B	2	A10

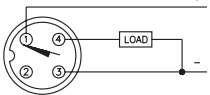
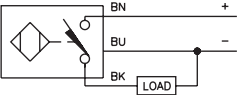
We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | FM Approved Class I Div 2

## Threaded Metal Barrels with 3-Wire DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connector</p>
<p><b>B</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, M12 Eurofast Connector</p>
<p><b>D</b></p>  <p>30 mm - Embeddable, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connector</p>

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: P-RKGV 4.43T-1699XL-*</p>	<p><b>2</b></p> 

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>



Required Lokfast guards: A9104 Lock-Euro G for sensors with H1141

## Specialty Sensors | FM Approved Class I Div 2


### Threaded Metal Barrels with 3-Wire DC Outputs

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi4-M12-AP6X-H1141/S1751</b> 4607075	FM Approved	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	--	A	1	A4
<b>Bi4-M12-AP6X/S1751</b> 4607073	FM Approved	4	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/ PVC	B	2	A4
<b>Bi8-M18-AP6X-H1141/S1751</b> 4615078	FM Approved	8	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	--	C	1	A4
<b>Bi15-M30-AP6X-H1141/S97/S1751</b> 4618574	FM Approved	15	3-wire DC PNP	10-30 VDC	500	≤200	-40 to +70	IP67	CPB	PA 12	N/A	YE	--	E	1	A4
<b>Bi15-M30-AP6X/S1751</b> 46185302	FM Approved	15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	CPB	PA 12	N/A	YE	2M/ PVC	D	2	A4

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Ring Sensors

## Plastic Housing Sensors with Cable or Connector and 3-Wire DC Output

Housing Style	Dimension Drawings		
	<p><b>A</b></p> <p>14 mm - Rectangular, Ring Sensor, M12 Eurofast Connector</p>		
<p><b>B</b></p> <p>14 mm - Rectangular, Ring Sensor, Potted-In Cable</p>	<p><b>C</b></p> <p>20 mm - Rectangular, Ring Sensor, M12 Eurofast Connector</p>		
<p><b>D</b></p> <p>30 mm - Rectangular, Ring Sensor, M12 Eurofast Connector</p>			
Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p> <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>	<p><b>4</b></p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)			
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>		

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Ring Sensors

### Plastic Housing Sensors with Cable or Connector and 3-Wire DC Output


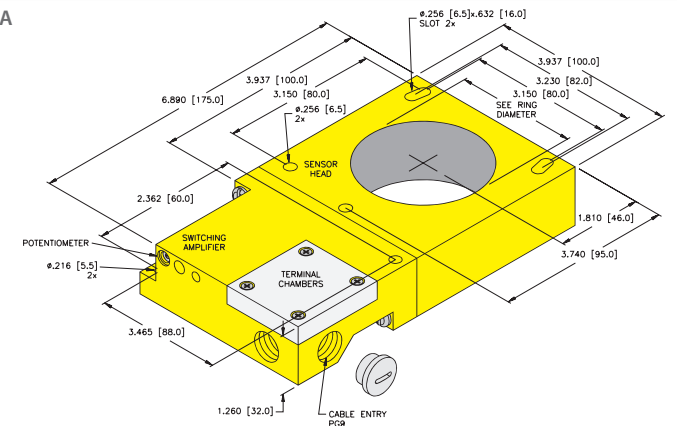
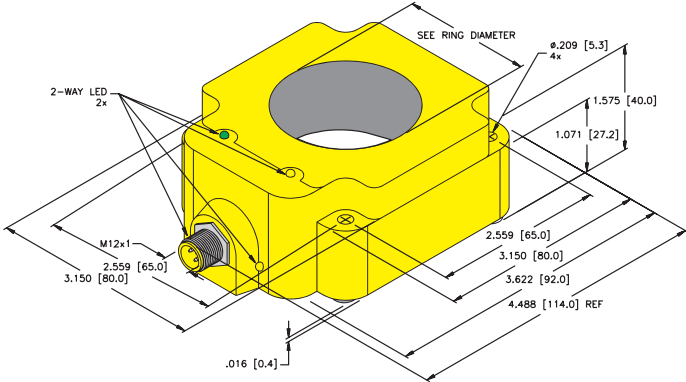
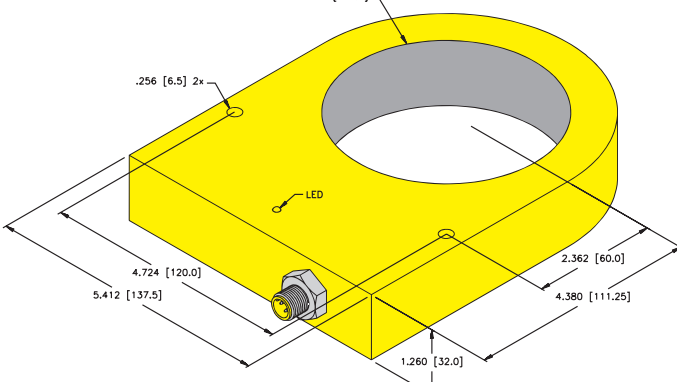
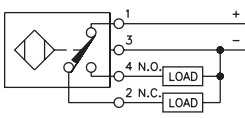
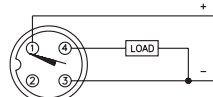
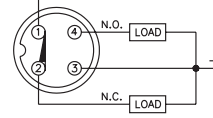
Part Number/ ID Number	Features	Minimum Target Diameter	Ring Diameter (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi10R-Q14-AN6X2-H1141 1407120	Static Output	≥ 2 mm	10	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	1	A4
Bi15R-Q14-AN6X2-H1141 1407220	Static Output	≥ 3 mm	15	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	1	A4
Bi20R-Q14-AN6X2-H1141 1407320	Static Output	≥ 4 mm	20	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	1	A4
Bi6R-Q14-AP6X2-H1141 1407000	Static Output	≥ 2 mm	6	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	2	A4
Bi10R-Q14-AP6X2-H1141 1407100	Static Output	≥ 2 mm	10	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	2	A4
Bi15R-Q14-AP6X2-H1141 1407200	Static Output	≥ 3 mm	15	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	2	A4
Bi20R-Q14-AP6X2-H1141 1407300	Static Output	≥ 4 mm	20	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	A	2	A4
Bi10R-Q14-AN6X2 1406120	Static Output	≥ 2 mm	10	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	2M/PVC	B	3	A4
Bi15R-Q14-AN6X2 1406220	Static Output	≥ 3 mm	15	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	2M/PVC	B	3	A4
Bi20R-Q14-AN6X2 1406320	Static Output	≥ 4 mm	20	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	2M/PVC	B	3	A4
Bi10R-Q14-AP6X2 1406100	Static Output	≥ 2 mm	10	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	2M/PVC	B	4	A4
Bi15R-Q14-AP6X2 1406200	Static Output	≥ 3 mm	15	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	2M/PVC	B	4	A4
Bi20R-Q14-AP6X2 1406300	Static Output	≥ 4 mm	20	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	2M/PVC	B	4	A4
Bi30R-Q20-AN6X2-H1141 1407520	Static Output	≥ 6 mm	30	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	C	1	A4
Bi30R-Q20-AP6X2-H1141 1407500	Static Output	≥ 6 mm	30	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PBT	POM	GN	YE	--	C	2	A4
Bi6R-W30-DAN6X-H1141 14037	Dynamic Output	≥ 0.6 mm	6	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	1	A4
Bi10R-W30-DAN6X-H1141 14039	Dynamic Output	≥ 1 mm	10	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	1	A4
Bi15R-W30-DAN6X-H1141 14041	Dynamic Output	≥ 1.5 mm	15	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	1	A4
Bi20R-W30-DAN6X-H1141 14043	Dynamic Output	≥ 2 mm	20	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	1	A4
Bi30R-W30-DAN6X-H1141 1404501	Dynamic Output	≥ 3 mm	30	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	1	A4
Bi6R-W30-DAP6X-H1141 14036	Dynamic Output	≥ 0.6 mm	6	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	2	A4
Bi10R-W30-DAP6X-H1141 14038	Dynamic Output	≥ 1 mm	10	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	2	A4
Bi15R-W30-DAP6X-H1141 14040	Dynamic Output	≥ 1.5 mm	15	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	2	A4
Bi20R-W30-DAP6X-H1141 14042	Dynamic Output	≥ 2 mm	20	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	2	A4
Bi30R-W30-DAP6X-H1141 14045	Dynamic Output	≥ 3 mm	30	3-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP67	PA 12	POM	N/A	YE	--	D	2	A4

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Ring Sensors

## Plastic Housing Sensors with a Large Diameter Ring and 3 or 4-Wire DC Output

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>32 mm - Rectangular, Ring Sensor, Terminal Chamber</p>	
<p><b>B</b></p>  <p>80 mm - Rectangular, Ring Sensor, M12 Eurofast Connector</p>	<p><b>C</b></p>  <p>100 mm - Rectangular, Ring Sensor, M12 Eurofast Connector</p>	
Wiring Diagrams/Mating Cordsets		
<p>1</p> 	<p>2</p>  <p>Mating Cordset: RK 4T.*</p>	<p>3</p>  <p>Mating Cordset: RK 4.4T.*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current          ≥170 mA on 150 mA Load Current          ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)          ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



## Specialty Sensors | Ring Sensors


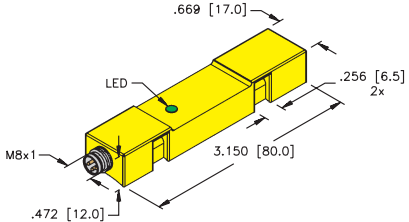
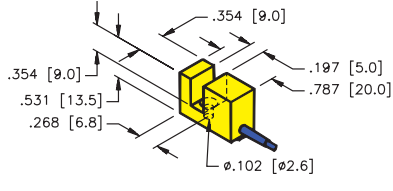
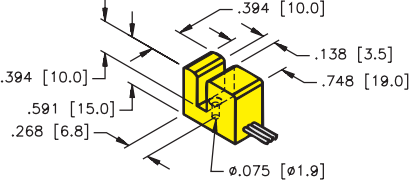
### Plastic Housing Sensors with a Large Diameter Ring and 3 or 4-Wire DC Output

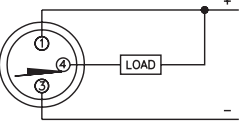
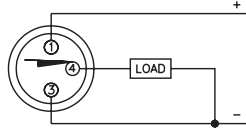
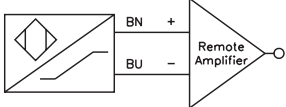
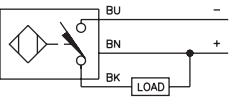
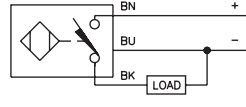
Part Number/ ID Number	Features	Minimum Target Diameter	Ring Diameter (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni20R-S32SR-VP44X 1440001	Static Output	≥ 0.4 mm	20	4-wire DC PNP	10-55 VDC	8	≤200	-25 to +70	IP67	ABS	ABS	N/A	YE	A	1	A4
Ni40R-S32SR-VP44X 1440005	Static Output	≥ 1 mm	40	4-wire DC PNP	10-55 VDC	8	≤200	-25 to +70	IP67	ABS	ABS	N/A	YE	A	1	A4
Ni65R-S32SR-VP44X 1440008	Static Output	≥ 12 mm	65	4-wire DC PNP	10-55 VDC	8	≤200	-25 to +70	IP67	ABS	ABS	N/A	YE	A	1	A4
Bi50R-Q80-AP6X2-H1141 1407530	Static Output	≥ 8 mm	50	3-wire DC PNP	10-30 VDC	10	≤200	-25 to +70	IP67	PBT	PA 66	GN	YE	B	2	A4
Bi65R-Q80-AP6X2-H1141 1407531	Static Output	≥ 10 mm	65	3-wire DC PNP	10-30 VDC	10	≤200	-25 to +70	IP67	PBT	PA 66	GN	YE	B	2	A4
Ni100R-S32XL-VP44X-H1141 1510301	Static Output	≥ 10mm	100	4-wire DC PNP	10-55 VDC	8	≤200	-25 to +70	IP67	POM	POM	N/A	YE	C	3	A4

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Tube and Slot Sensors

## Plastic Housing Sensors with Cable or Connector

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>Tube Sensing Nonembeddable, M8 Picofast Connector</p>
<p><b>B</b></p>  <p>9 mm - Slot Sensor, Potted-In Cable</p>	<p><b>C</b></p>  <p>10 mm - Slot Sensor, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3M-*</p>	<p><b>3</b></p>  <p>Remote Amplifier</p>
<p><b>4</b></p> 	<p><b>5</b></p> 	

A1 2-wire DC NAMUR - (Y0 and Y1)	
<p>Differential Travel (Hysteresis): 1-10% (5% typical)</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-activated Current Consumption: ≥2.1 mA</p> <p>Activated Current Consumption: ≤1.2 mA</p> <p>Recommended Switching Point for Remote Amplifier: &gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>	<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Tube and Slot Sensors


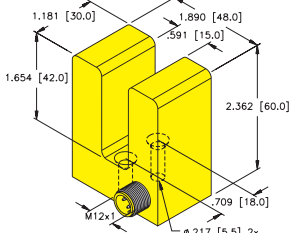
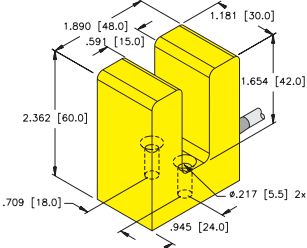
### Plastic Housing Sensors with Cable or Connector

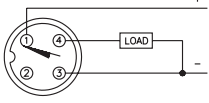
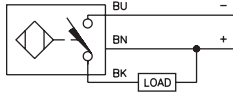
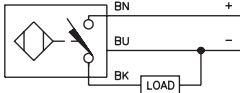
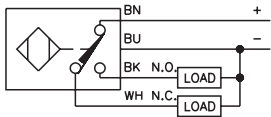
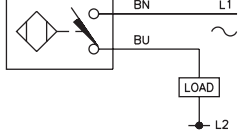
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni20U-TS12-AN6X2-V1131 1625822	Uprox+	20	3-wire DC NPN	10-30 VDC	8	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	--	A	1	A4
Ni20U-TS12-AP6X2-V1131 1646640	Uprox+	20	4-wire DC PNP	10-30 VDC	8	≤200	-25 to +70	IP68	PBT	PBT	GN	YE	--	A	2	A4
Si5-K09-Y1 0.5M 10240		5	2-wire DC NAMUR	5-30 VDC	5000	Remote	-25 to +70	IP67	PBT	PBT	N/A	N/A	0.5M/PVC	B	3	A1
Si3.5-K10-AN7 1719000		3.5	3-wire DC NPN	10-30 VDC	2000	≤200	-25 to +70	IP67	PBT	PBT	N/A	N/A	2M/PVC	C	4	A4
Si3.5-K10-AP6X 1650001		3.5	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	C	5	A4
Si3.5-K10-Y1 2M 10365		3.5	2-wire DC NAMUR	5-30 VDC	3000	Remote	-25 to +70	IP67	PBT	PBT	N/A	N/A	2M/PVC	C	3	A1

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Slot Sensors

## Plastic Housing Sensors with Cable or Connector

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Slot Sensor, M12 Eurofast Connector</p>
<p><b>B</b></p>  <p>30 mm - Slot Sensor, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p> 	<p><b>3</b></p> 
<p><b>4</b></p> 	<p><b>5</b></p> 	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	
A6 2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>	<p>Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ms}</math> max. 5 Hz)  <math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm  <math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Slot Sensors


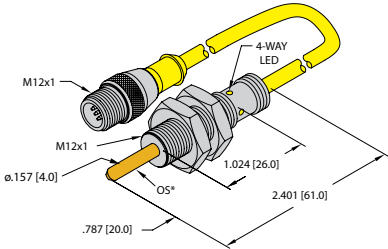
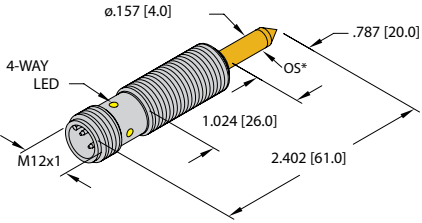
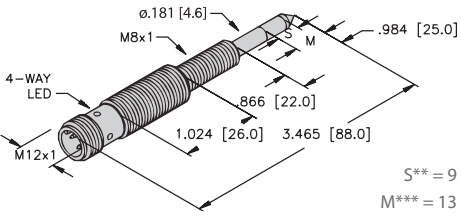
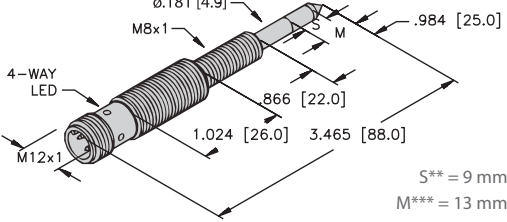
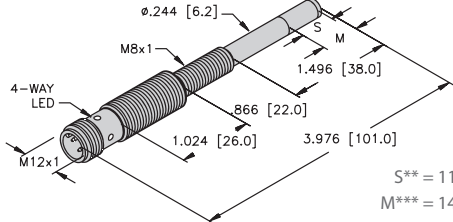
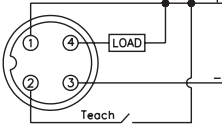
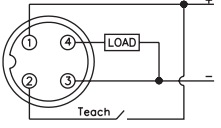
### Plastic Housing Sensors with Cable or Connector

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Si15-K30-AP6X-H1141 1605007		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	--	A	1	A4
Si15-K30-AN6X 1605003		15	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	B	2	A4
Si15-K30-AP6X 1605001		15	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP67	PBT	PBT	N/A	YE	2M/PVC	B	3	A4
Si15-K30-VP6 1605030	Comp. Outputs	15	4-wire DC PNP	10-30 VDC	350	≤200	-25 to +70	IP67	PBT	PBT	N/A	N/A	2M/PVC	B	4	A4
Si15-K30-AZ3 13069		15	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	N/A	N/A	2M/PVC	B	5	A6

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Weld Nut Sensors

## Threaded Metal Barrel with Smooth Sensing Probe and 3-Wire DC Output

Housing Style	Dimension Drawings	
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="951 573 1349 594">Nut Sensor, 5-12 mm Diameter Nut, Potted-In Cable</p>	
<p data-bbox="103 611 120 632">B</p>  <p data-bbox="215 873 683 894">Nut Sensor, 5-12 mm Diameter Nut, M12 Eurofast Connector</p>	<p data-bbox="808 611 824 632">C</p>  <p data-bbox="1325 793 1414 842">S** = 9 mm M*** = 13 mm</p> <p data-bbox="919 873 1386 894">Nut Sensor, 6-12 mm Diameter Nut, M12 Eurofast Connector</p>	
<p data-bbox="103 909 120 930">D</p>  <p data-bbox="602 1094 711 1142">S** = 9 mm M*** = 13 mm</p> <p data-bbox="215 1171 683 1192">Nut Sensor, 6-12 mm Diameter Nut, M12 Eurofast Connector</p>	<p data-bbox="808 909 824 930">E</p>  <p data-bbox="1308 1094 1417 1142">S** = 11 mm M*** = 14 mm</p> <p data-bbox="919 1171 1386 1192">Nut Sensor, 10-20 mm Diameter Nut, M12 Eurofast Connector</p>	
Wiring Diagrams/Mating Cordsets		
<p data-bbox="103 1262 120 1283">1</p>  <p data-bbox="345 1392 548 1413">Mating Cordset: RK 4.4T-*</p>	<p data-bbox="808 1262 824 1283">2</p>  <p data-bbox="1052 1392 1255 1413">Mating Cordset: RK 4.4T-*</p>	
A24 3-wire DC Nut Detection Sensor (AP, AN)		
<p data-bbox="402 1486 459 1507">Ripple: ≤10%</p> <p data-bbox="131 1514 524 1535">Voltage Drop Across Conducting Sensor: ≤1 V</p> <p data-bbox="110 1541 764 1562">Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current</p> <p data-bbox="321 1568 557 1589">No-Load Current: ≤15 mA</p> <p data-bbox="232 1596 557 1617">Off-State (Leakage) Current: ≤0.1 mA</p>	<p data-bbox="919 1486 1271 1507">Reverse Polarity Protection: Incorporated</p> <p data-bbox="959 1514 1271 1535">Wire-Break Protection: Incorporated</p> <p data-bbox="1081 1541 1255 1562">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1568 1474 1589">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p>	

**Note:**  
 OS\* The optimal sensitive area for the 4.0 mm diameter probes has a width of 0.5 mm and is laser-engraved on the tip of the probe, 11.9 mm above the M12 thread.  
 S\*\* Sensitive area: Within this area the sensor signal changes when assembly parts are changed.  
 M\*\*\* Maximum area: The maximum signal intensity is reached if the sensitive area is completely covered.

Optional teach adapter available, part number VB2-SP1.

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Weld Nut Sensors

### Threaded Metal Barrel with Smooth Sensing Probe and 3-Wire DC Output


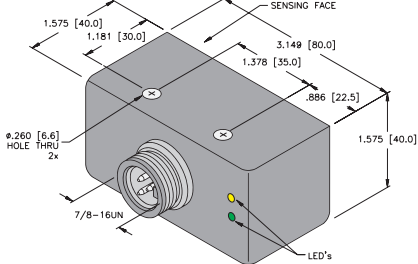
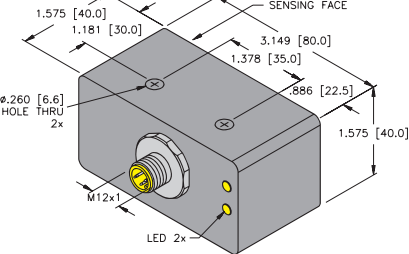
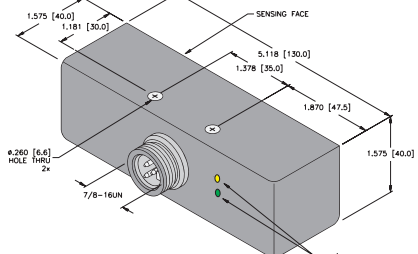
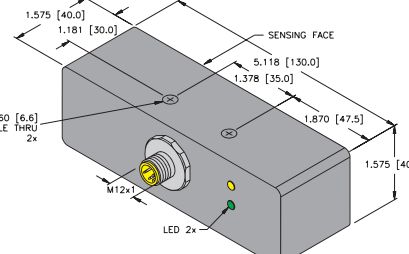
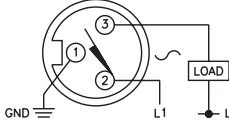
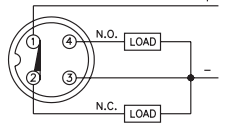
Part Number/ ID Number	Features	Nut Diameter	Output	Voltage	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
NIMFE-EM12/4.0L61-UP6X-0.3XYE-RS4/S1182 1600623	Titanium Nitride	5-12 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	0.3M/TPE	A	2	A24
NIMFE-EM12/4.0L61-UN6X-0.3XYE-RS4/S1182 1600624	Titanium Nitride	5-12 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	0.3M/TPE	A	1	A24
NIMFE-EM12/4.0L61-UP6X-H1141/S1182 1600621	Titanium Nitride	5-12 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	B	2	A24
NIMFE-EM12/4.0L61-UN6X-H1141/S1182 1600622	Titanium Nitride	5-12 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	B	1	A24
NIMFE-M12/4.6L88-UN6X-H1141 1600610		6-12 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	CPB	GN	YE	--	C	1	A24
NIMFE-EMT12/4.6L88-UN6X-H1141 1600618	PTFE Coated	6-12 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	C	1	A24
NIMFE-EM12/4.6L88-UN6X-H1141/S1182 1600617	Titanium Nitride	6-12 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	C	1	A24
NIMFE-M12/4.6L88-UP6X-H1141 1600608		6-12 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	CPB	GN	YE	--	C	2	A24
NIMFE-EMT12/4.6L88-UP6X-H1141 1600619	PTFE Coated	6-12 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	C	2	A24
NIMFE-EM12/4.6L88-UP6X-H1141/S1182 1600620	Titanium Nitride	6-12 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	C	2	A24
NIMFE-EM12/4.9L88-UP6X-H1141/S1182 1600616	Titanium Nitride	6-12 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	D	2	A24
NIMFE-M12/6.2L101-UN6X-H1141 1600611		10-20 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	CPB	GN	YE	--	E	1	A24
NIMFE-EMT12/6.2L101-UN6X-H1141 1600615	PTFE Coated	10-20 mm	3-wire DC NPN	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	E	1	A24
NIMFE-M12/6.2L101-UP6X-H1141 1600609		10-20 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	CPB	GN	YE	--	E	2	A24
NIMFE-EMT12/6.2L101-UP6X-H1141 1600613	PTFE Coated	10-20 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	E	2	A24
NIMFE-EM12/6.2L101-UP6X-H1141/S1182 1600612	Titanium Nitride	10-20 mm	3-wire DC PNP	10-30 VDC	≤200	-25 to +70	IP67	SS	GN	YE	--	E	2	A24

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Edge Detection Sensors

## Rectangular Metal Housing with AC or DC Outputs and Integral Connector

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CA4080 - Embeddable, Minifast Connector</p>
<p><b>B</b></p>  <p>CA4080 - Embeddable, M12 Eurofast Connector</p>	<p><b>C</b></p>  <p>CA40130 - Embeddable, Minifast Connector</p>
<p><b>D</b></p>  <p>CA40130 - Embeddable, M12 Eurofast Connector</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RKM 30-*M</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.4T-*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440\text{ mA}</math>; DC: <math>\geq 330\text{ mA}</math>  AC: <math>\geq 120\text{ mA}</math>; DC: <math>\geq 120\text{ mA}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math> (AC)  <math>\leq 1.5\text{ mA}</math> (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p> <p>Inrush Current: <math>\leq 3\text{ A}</math> (<math>\leq 20\text{ ms}</math>, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



## Specialty Sensors | Edge Detection Sensors

### Rectangular Metal Housing with AC or DC Outputs and Integral Connector


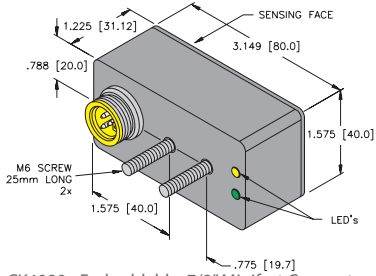
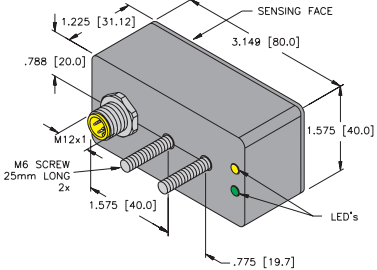
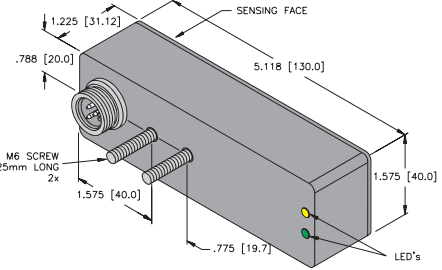
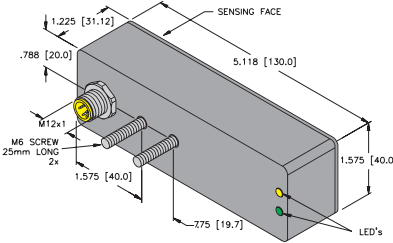
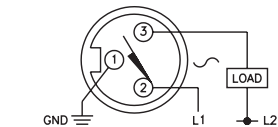
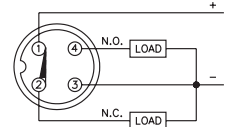
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Bi20-CA4080-ADZ30X2-B1131 4283400		20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TS	SF	GN	RD	A	1	A5
Bi20-CA4080-VP4X2-H1141 1625591		20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	TS	SF	GN	YE	B	2	A4
Bi20-CA4080-VP4X2-H1141/S1009 1625590	250 ms Off Delay	20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	TS	SF	GN	YE	B	2	A4
Bi20-CA40130-ADZ30X2-B1131 4283503		20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TS	SF	GN	RD	C	1	A5
Bi20-CA40130-ADZ30X2-B1131/S1009 4283597	250 ms Off Delay	20	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤400/300	-25 to +70	IP67	TS	SF	GN	RD	C	1	A5
Bi20-CA40130-VP4X2-H1141 4283599		20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	TS	SF	GN	YE	D	2	A4

We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Edge Detection Sensors

## Rectangular Plastic Housing with AC or DC Outputs and Integral Connector

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CK4080 - Embeddable, 7/8" Minifast Connector</p>
<p><b>B</b></p>  <p>CK4080 - Embeddable, M12 Eurofast Connector</p>	<p><b>C</b></p>  <p>CK40130 - Embeddable, 7/8" Minifast Connector</p>
<p><b>D</b></p>  <p>CK40130 - Embeddable, M12 Eurofast Connector</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RKM 30-*M</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.4T-*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440\text{ mA}</math>; DC: <math>\geq 330\text{ mA}</math>  AC: <math>\geq 120\text{ mA}</math>; DC: <math>\geq 120\text{ mA}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math> (AC)  <math>\leq 1.5\text{ mA}</math> (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p> <p>Inrush Current: <math>\leq 3\text{ A}</math> (<math>\leq 20\text{ ms}</math>, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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## Specialty Sensors | Edge Detection Sensors

### Rectangular Plastic Housing with AC or DC Outputs and Integral Connector


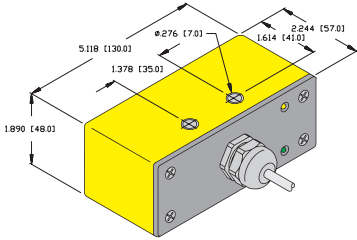
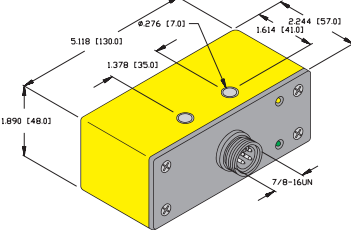
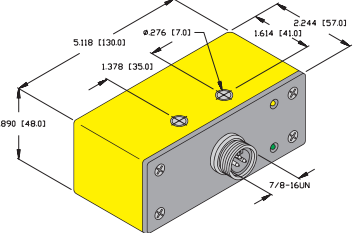
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi20-CK4080-ADZ30X2-B1131</b> 4283493		20	2-wire AC/DC	20-250 VAC/10-300 VDC	30	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
<b>Bi20-CK4080-ADZ30X2-B1131/S1009</b> 4283495	250ms Off Delay	20	2-wire AC/DC	20-250 VAC/10-300 VDC	30	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	A	1	A5
<b>Bi20-CK4080-VP4X2-H1141</b> 4283491		20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	PBT	PBT	GN	YE	B	2	A4
<b>Bi20-CK4080-VP4X2-H1141/S1009</b> 4283496	250ms Off Delay	20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	PBT	PBT	GN	YE	B	2	A4
<b>Bi20-CK40130-ADZ30X2-B1131</b> 4283589		20	2-wire AC/DC	20-250 VAC/10-300 VDC	30	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	C	1	A5
<b>Bi20-CK40130-ADZ30X2-B1131/S1009</b> 4283593	250ms Off Delay	20	2-wire AC/DC	20-250 VAC/10-300 VDC	30	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	C	1	A5
<b>Bi20-CK40130-VP4X2-H1141</b> 42835911		20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	PBT	PBT	GN	YE	D	2	A4
<b>Bi20-CK40130-VP4X2-H1141/S1009</b> 42835963	250ms Off Delay	20	4-wire DC PNP	10-65 VDC	100	≤400	-25 to +70	IP67	PBT	PBT	GN	YE	D	2	A4

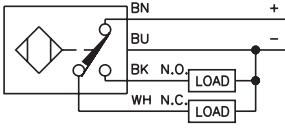
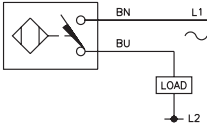
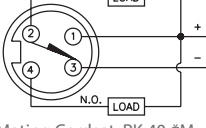
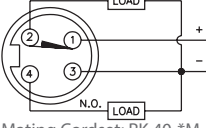
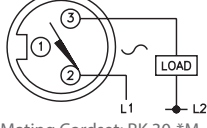
We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Can Sensors

## Rectangular Plastic Housing with AC or DC Outputs and Integral Connector

Housing Style	Dimension Drawings
	<p>A</p>  <p>Q130 - Nonembeddable, Potted-In Cable</p>
<p>B</p>  <p>Q130 - Nonembeddable, 7/8" Minifast Connector</p>	<p>C</p>  <p>Q130 - Nonembeddable, 7/8" Minifast Connector</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p> 	<p>2</p> 	<p>3</p>  <p>Mating Cordset: RK 40-*M</p>
<p>4</p>  <p>Mating Cordset: RK 40-*M</p>	<p>5</p>  <p>Mating Cordset: RK 30-*M</p>	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)		
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Trigger Current for Short Circuit Protection: AC: ≥440 mA; DC: ≥330 mA AC: ≥120 mA; DC: ≥120 mA</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA (AC) ≤1.5 mA (DC)</p>	<p>Minimum Load Current: ≥3.0 mA</p> <p>Inrush Current: ≤3 A (≤20 ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

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## Specialty Sensors | Can Sensors


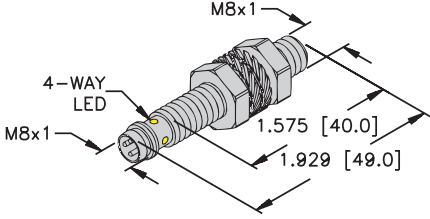
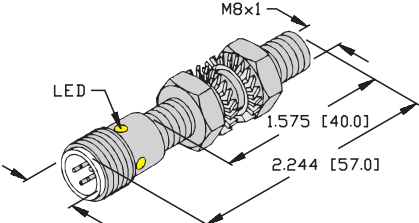
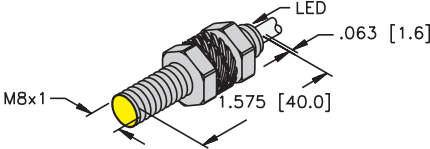
### Rectangular Plastic Housing with AC or DC Outputs and Integral Connector

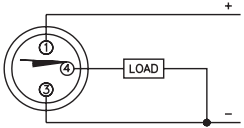
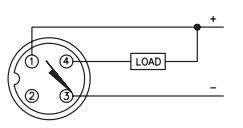
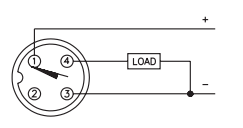
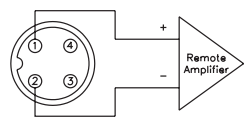
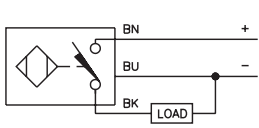
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni30-Q130-VP4X2 15179	Comp. Output	30	4-wire DC PNP	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	2M/ PVC	A	1	A4
Ni30-Q130-ADZ30X2 42095		30	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	2M/ PVC	A	2	A5
Ni30-Q130-VN4X2-B2141 15180	Comp. Output	30	4-wire DC NPN	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	--	B	3	A4
Ni30-Q130-VP4X2-B2141 1518001	Comp. Output	30	4-wire DC PNP	10-65 VDC	60	≤200	-25 to +70	IP67	PBT	PBT	GN	YE	--	B	4	A4
Ni30-Q130-ADZ30X2-B1131 42100		30	2-wire AC/DC	20-250 VAC/10- 300 VDC	20	≤400/300	-25 to +70	IP67	PBT	PBT	GN	RD	--	C	5	A5

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Inductive Magnetic Sensors

## Threaded Metal Barrels Designed to Sense a Magnetic Field

Housing Style	Dimension Drawings
	<p>A</p>  <p>8 mm - Barrel, M8 Picofast Connector</p>
<p>B</p>  <p>8 mm - Barrel, M12 Eurofast Connector</p>	<p>C</p>  <p>8 mm - Barrel, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: PKG 3M-*</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*</p>
<p>4</p>  <p>Mating Cordset: RK 4.21T-*</p>	<p>5</p> 	

A25	3-wire DC Magnetic Barrel (AP, AN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-10%</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current <math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p>		<p>Temperature Drift: <math>\leq \pm 15\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 0.3\%</math> of Full Scale</p>
A27	2-wire DC Namur Magnetic Barrel (Y1)	
<p>Differential Travel (Hysteresis): 1-10%</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 <math>\Omega</math></p> <p>Non-activated Current Consumption: <math>\leq 1.2\text{ mA}</math></p> <p>Activated Current Consumption: <math>\geq 2.1\text{ mA}</math></p> <p>Recommended Switching Point for Remote Amplifier: <math>&gt; 1.2</math> to <math>&lt; 2.1\text{ mA}</math></p> <p>Amplifier: typ. 1.55 mA ON/1.75 mA OFF</p>		<p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 0.3\%</math> of Full Scale</p>

**Note:**  
Use with Turck actuation magnet to achieve longest switching distance.  
See page I18 for part numbers and details.

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## Specialty Sensors | Inductive Magnetic Sensors


### Threaded Metal Barrels Designed to Sense a Magnetic Field

Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>BIM-EG08-AP6X-V1131</b> 4621314	Up to 78 mm Range	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	--	A	1	A25
<b>BIM-EG08-AN6X-H1341</b> 4621301	Up to 78 mm Range	3-wire DC NPN	10-30 VDC	1000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	--	B	2	A25
<b>BIM-EG08-AP6X-H1341</b> 4621311	Up to 78 mm Range	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	--	B	3	A25
<b>BIM-EG08-Y1X-H1341</b> 1074001	Up to 78 mm Range	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	SS	PA 12	N/A	YE	--	B	4	A27
<b>BIM-EG08-AP6X</b> 4621310	Up to 78 mm Range	3-wire DC PNP	10-30 VDC	1000	≤150	-25 to +70	IP67	SS	PA 12	N/A	YE	2M/TPU	C	5	A25

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# Specialty Sensors | Inductive Magnetic Sensors

## Threaded Metal Barrels Designed to Sense a Magnetic Field

Housing Style	Dimension Drawings
	<p>A</p> <p>12 mm - M12 Eurofast Connector</p>
<p>B</p> <p>12 mm - Potted-In Cable</p>	<p>C</p> <p>18 mm - M12 Eurofast Connector</p>

Wiring Diagrams/Mating Cordsets			
<p>1</p> <p>Mating Cordset: RK 4T-*</p>	<p>2</p> <p>Mating Cordset: RK 4T-*, P-RKGV 4.43T-1699XL-*</p>	<p>3</p> <p>Mating Cordset: RK 4.21T-*</p>	<p>4</p>
<p>5</p>	<p>6</p>	<p>7</p>	

A25	3-wire DC Magnetic Barrel (AP, AN)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-10%</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current</p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p>		<p>Temperature Drift: <math>\leq \pm 15\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 0.3\%</math> of Full Scale</p>

A26	2-wire DC Magnetic Barrel (AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 1-10%</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 4.2\text{ V}</math> Polarized</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current</p> <p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p>Temperature Drift: <math>\leq \pm 15\%</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.8\text{ mA}</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 0.3\%</math> of Full Scale</p>

A27	2-wire DC Namur Magnetic Barrel (Y1)	
<p>Differential Travel (Hysteresis): 1-10%</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 <math>\Omega</math></p> <p>Non-activated Current Consumption: <math>\leq 1.2\text{ mA}</math></p> <p>Activated Current Consumption: <math>\geq 2.1\text{ mA}</math></p> <p>Recommended Switching Point for Remote Amplifier: <math>&gt; 1.2</math> to <math>&lt; 2.1\text{ mA}</math>,            typ. 1.55 mA ON/1.75 mA OFF</p>		<p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 0.3\%</math> of Full Scale</p>

**Note:**  
 Use with Turck actuation magnet to achieve longest switching distance.  
 See page I18 for part numbers and details.

We reserve the right to make technical alterations without prior notice.



## Specialty Sensors | Inductive Magnetic Sensors

### Threaded Metal Barrels Designed to Sense a Magnetic Field


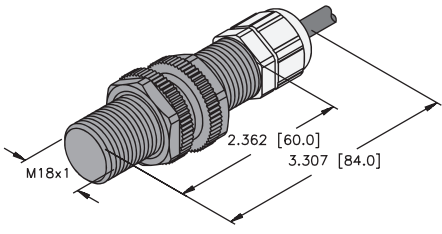
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
<b>BIM-M12E-AN4X-H1141</b> 1579914	Up to 90 mm Range	3-wire DC NPN	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PBT	N/A	YE	A	1	A25
<b>BIM-EM12E-AP4X-H1141</b> 1579915	Up to 90 mm Range	3-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	SS	PBT	N/A	YE	A	2	A25
<b>BIM-M12E-AP4X-H1141</b> 1579913	Up to 90 mm Range	3-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PBT	N/A	YE	A	2	A25
<b>BIM-M12E-AP6X-H1141/S1751</b> 4681289	FM Approved	3-wire DC PNP	10-30 VDC	1000	≤200	-25 to +70	IP67	CPB	PBT	N/A	YE	A	2	A25
<b>BIM-M12E-Y1X-H1141</b> 1074003	Up to 90 mm Range	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	CPB	PBT	N/A	YE	A	3	A27
<b>BIM-M12E-AG4X</b> 4430200	Up to 90 mm Range	2-wire DC	10-65 VDC	1000	≤100	-25 to +70	IP67	CPB	PBT	N/A	YE	B	4	A26
<b>BIM-M12E-AN4X</b> 1579912	Up to 90 mm Range	3-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PBT	N/A	YE	B	5	A25
<b>BIM-EM12E-AP4X</b> 1579918	Up to 90 mm Range	3-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	SS	PBT	N/A	YE	B	6	A25
<b>BIM-M12E-AP4X/S90</b> 1579911	Up to 90 mm Range	3-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	CPB	PBT	N/A	YE	B	6	A25
<b>BIM-EM12E-Y1X</b> 1070036	Up to 90 mm Range	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	SS	PBT	N/A	YE	B	7	A27
<b>BIM-M12E-Y1X</b> 1074002	Up to 90 mm Range	2-wire DC NAMUR	5-30 VDC	1000	Remote	-25 to +70	IP67	CPB	PBT	N/A	YE	B	7	A27
<b>BIM-EM18M-AP4X-H1141</b> 1579933	Up to 90 mm Range	3-wire DC PNP	10-65 VDC	1000	≤200	-25 to +70	IP67	SS	PBT	N/A	YE	C	2	A25

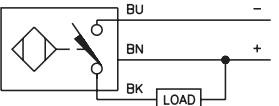
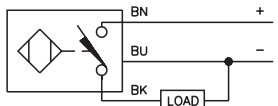
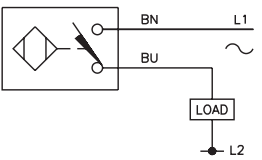
We reserve the right to make technical alterations without prior notice.

Specialty Sensors

# Specialty Sensors | Submersible Sensors

## Threaded Plastic Barrel Sensors with Cable for Underwater Applications

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="945 571 1360 592">18 mm - Embeddable, Full Threading, Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p data-bbox="105 659 121 680">1</p> 	<p data-bbox="576 659 592 680">2</p> 	<p data-bbox="1047 659 1063 680">3</p> 

A4	3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 892 544 913">Ripple: <math>\leq 10\%</math></p> <p data-bbox="219 919 641 940">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 947 544 968">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="113 974 771 1058">Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="235 1064 560 1085">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="316 1092 690 1150">No-Load Current:  <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox3)</p>		<p data-bbox="889 892 1226 913">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="998 919 1291 940">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="917 947 1274 968">Reverse Polarity Protection: Incorporated</p> <p data-bbox="950 974 1274 995">Wire-Break Protection: Incorporated</p> <p data-bbox="966 1001 1307 1022">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="982 1029 1226 1050">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1079 1056 1258 1077">Shock: 30 g, 11 ms</p> <p data-bbox="1047 1083 1469 1104">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1023 1110 1437 1131">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A6	2-wire AC/DC w/o Short-Circuit Protection - (AZ, RZ, FZ)	
<p data-bbox="332 1203 609 1224">Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p data-bbox="219 1230 641 1251">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="138 1257 544 1278">Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p data-bbox="251 1285 722 1344">Continuous Load Current:  AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p data-bbox="235 1350 560 1371">Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p data-bbox="267 1377 560 1398">Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p>		<p data-bbox="1015 1203 1372 1224">Inrush Current: <math>\leq 8\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz)</p> <p data-bbox="1015 1230 1437 1251"><math>\leq 1\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 5 Hz) 12 mm</p> <p data-bbox="1015 1257 1453 1278"><math>\leq 0.2\text{ A}</math> (<math>\leq 10\text{ ms}</math> max. 0.2 Hz) 8 mm</p> <p data-bbox="998 1285 1291 1306">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="966 1312 1307 1333">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1079 1339 1258 1360">Shock: 30 g, 11 ms</p> <p data-bbox="1047 1367 1469 1388">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1023 1394 1437 1415">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Submersible Sensors


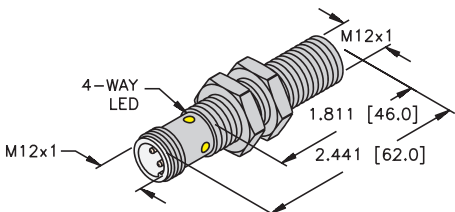
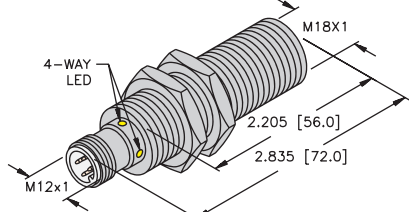
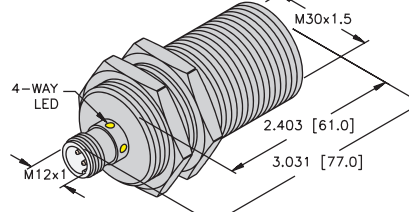
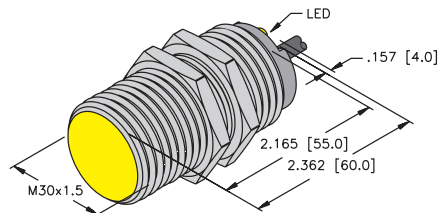
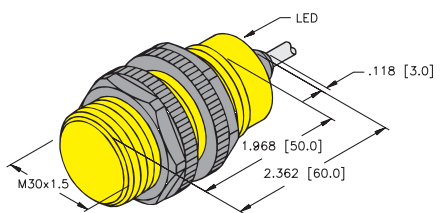
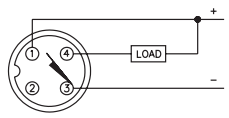
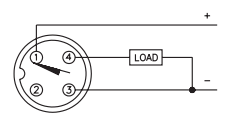
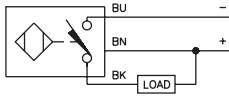
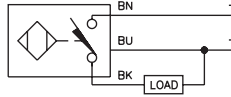
### Threaded Plastic Barrel Sensors with Cable for Underwater Applications

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi5-P18-AN6/S139-S1261</b> 1650239	Submersible	5	3-wire DC NPN	10-30 VDC	500	≤200	-25 to +70	IP68	POM	PA 12	N/A	N/A	2M/TPE	A	1	A4
<b>Bi5-P18-AP6/S139-S1261</b> 1650234	Submersible	5	3-wire DC PNP	10-30 VDC	500	≤200	-25 to +70	IP68	POM	PA 12	N/A	N/A	2M/TPE	A	2	A4
<b>Bi8U-P18-AP6/S139-S1261</b> 1650230	Submersible, Uprox	8	3-wire DC PNP	10-30 VDC	2000	≤200	-30 to +85	IP68	POM	PA 12	N/A	N/A	2M/TPE	A	2	A4
<b>Bi5-P18-AZ3/S139-S1261</b> 1384307	Submersible	5	2-wire AC	20-250 VAC	20	≤400	-25 to +70	IP68	POM	PA 12	N/A	N/A	2M/TPE	A	3	A6

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Selective Metal Sensors

## Threaded Barrel Sensors Designed to Sense Nonferrous Metals Only

Housing Style	Dimension Drawings		
	<p><b>A</b></p>  <p>12 mm - Embeddable, M12 Eurofast Quick Disconnect</p>		
<p><b>B</b></p>  <p>18 mm - Embeddable, M12 Eurofast Quick Disconnect</p>	<p><b>C</b></p>  <p>30 mm - Embeddable, M12 Eurofast Quick Disconnect</p>		
<p><b>D</b></p>  <p>30 mm - Embeddable, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, Potted-In Cable, Partial Threading</p>		
Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>3</b></p> 	<p><b>4</b></p> 
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)			
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current          ≥170 mA on 150 mA Load Current          ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)          ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>		

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Selective Metal Sensors

### Threaded Barrel Sensors Designed to Sense Nonferrous Metals Only


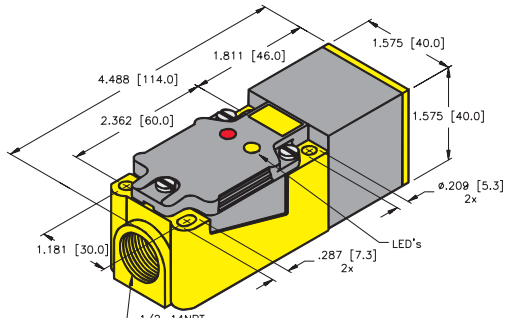
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>Bi3NF-EM12HE-AP6X2-H1141</b> 1615001	Senses nonferrous metals only	3	3-wire DC PNP	10-30 VDC	3000	≤200	0 to +60	IP67	SS	SF	GN	YE	--	A	2	A4
<b>Bi5NF-EM18HE-AN6X2-H1141</b> 1615004	Senses nonferrous metals only	5	3-wire DC NPN	10-30 VDC	2500	≤200	0 to +60	IP67	SS	SF	GN	YE	--	B	1	A4
<b>Bi5NF-EM18HE-AP6X2-H1141</b> 1615000	Senses nonferrous metals only	5	3-wire DC PNP	10-30 VDC	2500	≤200	0 to +60	IP67	SS	SF	GN	YE	--	B	2	A4
<b>Bi10NF-EM30HE-AN6X2-H1141</b> 1615005	Senses nonferrous metals only	10	3-wire DC NPN	10-30 VDC	2000	≤200	0 to +60	IP67	SS	SF	GN	YE	--	C	1	A4
<b>Bi10NF-EM30HE-AP6X2-H1141</b> 1615002	Senses nonferrous metals only	10	3-wire DC PNP	10-30 VDC	2000	≤200	0 to +60	IP67	SS	SF	GN	YE	--	C	2	A4
<b>Bi10NF-M30-AN6X</b> 16161	Senses nonferrous metals only	10	3-wire DC NPN	10-30 VDC	500	≤200	0 to +60	IP67	CPB	PA 12	N/A	YE	2M/ PVC	D	3	A4
<b>Bi10NF-M30-AP6X</b> 16061	Senses nonferrous metals only	10	3-wire DC PNP	10-30 VDC	500	≤200	0 to +60	IP67	CPB	PA 12	N/A	YE	2M/ PVC	D	4	A4
<b>Bi10NF-S30-AN6X</b> 16215	Senses nonferrous metals only	10	3-wire DC NPN	10-30 VDC	2000	≤200	0 to +60	IP67	PA 12	PA 12	N/A	YE	2M/ PVC	E	3	A4
<b>Bi10NF-S30-AP6X</b> 16115	Senses nonferrous metals only	10	3-wire DC PNP	10-30 VDC	2000	≤200	0 to +60	IP67	PA 12	PA 12	N/A	YE	2M/ PVC	E	4	A4

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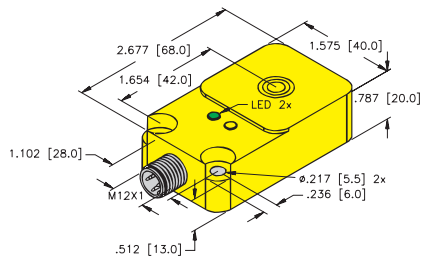
Specialty Sensors

# Specialty Sensors | Selective Metal Sensors

Rectangular and Barrel Sensors Designed to Sense Nonferrous or Ferrous Metals Only

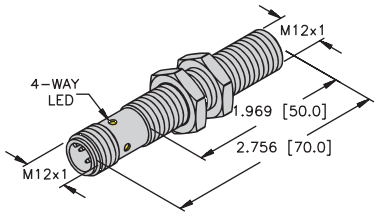
Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CP40 - Nonembeddable, Terminal Chamber</p>

**B**



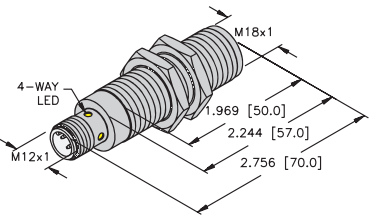
Q20 - Nonembeddable, M12 Eurofast Quick Disconnect

**C**



12 mm - Embeddable, M12 Eurofast Quick Disconnect

**D**



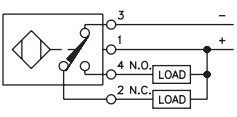
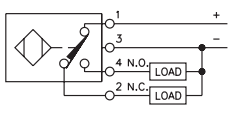
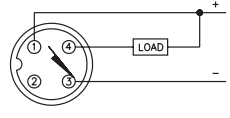
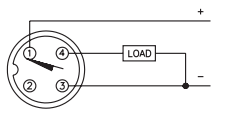
18 mm - Embeddable, M12 Eurofast Quick Disconnect

**E**



22 mm - Embeddable, M12 Eurofast Quick Disconnect

**Wiring Diagrams/Mating Cordsets**

<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4T-*</p>
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**A4** **3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)**

<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current                      ≥170 mA on 150 mA Load Current                      ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox)                      ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
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**A28** **3-wire DC Ferrous Only Sensing (AP)**

<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA on 100 mA Load Current</p> <p>No-Load Current: ≤20 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p>	<p>Temperature Drift: ≤±10%</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
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We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Selective Metal Sensors


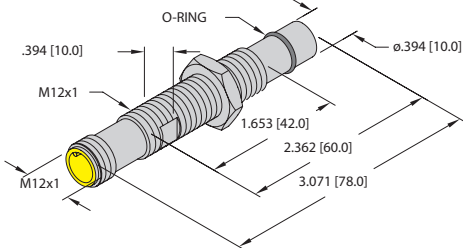
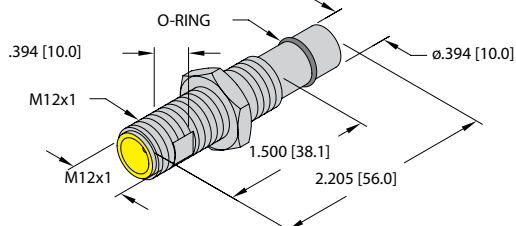
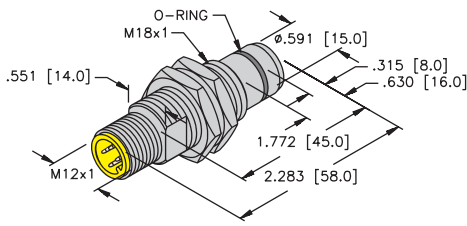
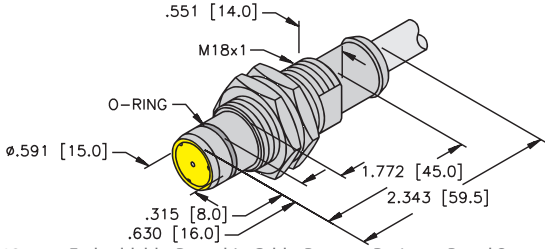
### Rectangular and Barrel Sensors Designed to Sense Nonferrous or Ferrous Metals Only

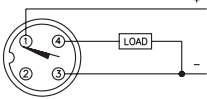
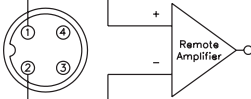
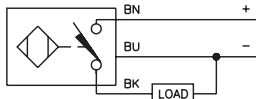
Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
Ni20NF-CP40-VN4X2 15282	Senses nonferrous metals only	20	4-wire DC NPN	10-65 VDC	100	≤200	0 to +60	IP67	PBT	PBT	GN	YE	A	1	A4
Ni20NF-CP40-VP4X2 15082	Senses nonferrous metals only	20	4-wire DC PNP	10-65 VDC	100	≤200	0 to +60	IP67	PBT	PBT	GN	YE	A	2	A4
Ni25NF-Q20-AN6X2-H1141 1602710	Senses nonferrous metals only	25	3-wire DC NPN	10-30 VDC	25	≤200	0 to +60	IP67	PBT	PBT	GN	YE	B	3	A4
Bi2.5FE-EM12FE-AP6X-H1141 1615011	Senses ferrous metals only	2.5	3-wire DC PNP	10-30 VDC	1000	≤100	-25 to +70	IP67	SS	SS	N/A	YE	C	4	A28
Bi4.5FE-EM18FE-AP6X-H1141 1615012	Senses ferrous metals only	4.5	3-wire DC PNP	10-30 VDC	1000	≤100	-25 to +70	IP67	SS	SS	N/A	YE	D	4	A28

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | High Pressure

## Partially Threaded Metal Barrel Pressure Resistant Sensors

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection, Pressure Resistant Barrel Sensor</p>
<p><b>B</b></p>  <p>12 mm - Embeddable, M12 Eurofast Connection, Pressure Resistant Barrel Sensor</p>	<p><b>C</b></p>  <p>18 mm - Embeddable, M12 Eurofast Connection, Pressure Resistant Barrel Sensor</p>
<p><b>D</b></p>  <p>18 mm - Embeddable, Potted-In Cable, Pressure Resistant Barrel Sensor</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RKV 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKV 4.21T-*</p>	<p><b>3</b></p> 

A1	2-wire DC NAMUR - (Y0 and Y1)	
<p>Differential Travel (Hysteresis): 1-10% (5% typical)</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-Activated Current Consumption: ≥2.1 mA</p> <p>Activated Current Consumption: ≤1.2 mA</p> <p>Recommended Switching Point for Remote Amplifier: &gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>		<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>
A29	3-wire DC High Pressure (AP)	
<p>Ripple: ≤20%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤2 V, ≤1.8 V (Ext. Range)</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current</p> <p>No-Load Current: ≤10 mA, ≤15 mA (Ext. Range)</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p>		<p>Temperature Drift: ≤15%, ≤±10% (Ext. Range)</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>

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## Specialty Sensors | High Pressure


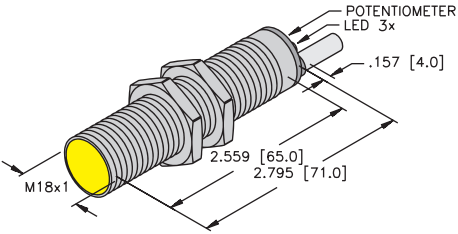
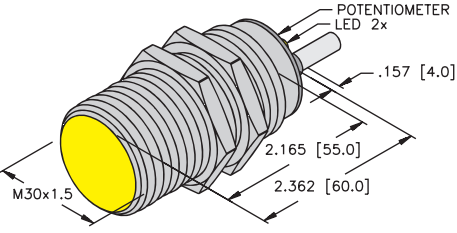
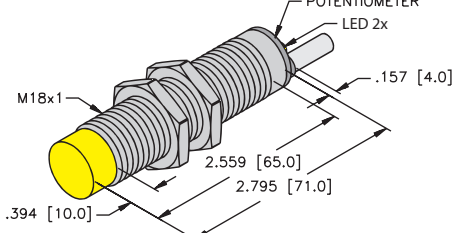
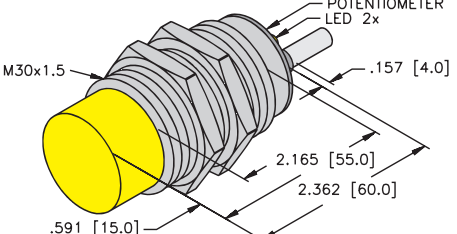
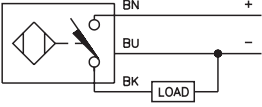
### Partially Threaded Metal Barrel Pressure Resistant Sensors

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BID1.5-G120KK-AP6-H1141 1682001	500 bar	1.5	3-wire DC PNP	10-30 VDC	600	≤200	-25 to +80	IP68	SS	CER	N/A	N/A	--	A	1	A29
BID1.5-G120-AP6-H1141 1682000	500 bar	1.5	3-wire DC PNP	10-30 VDC	600	≤200	-25 to +80	IP68	SS	CER	N/A	N/A	--	B	1	A29
BID2-G180-AP6-H1141/S212 16885	500 bar static/350 bar dynamic	2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +85	IP67	SS	PA 12	N/A	N/A	--	C	1	A29
BID2-G180-Y0-H1141/S212 1088500	500 bar static/350 bar dynamic	2	2-wire Namur	5-30 VDC	2000	≤200	-25 to +70	IP67	SS	PA 12	N/A	N/A	--	C	2	A1
BID2-G180-AP6/S212 1688003	500 bar static/350 bar dynamic	2	3-wire DC PNP	10-30 VDC	2000	≤200	-25 to +85	IP67	SS	PA 12	N/A	N/A	2M/TPU	D	3	A29

We reserve the right to make technical alterations without prior notice.

# Specialty Sensors | Rotational Speed Monitor

## Threaded Metal Barrel for Target Detection on a Spinning Shaft

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Embeddable Rotational Speed Monitor, Potted-In Cable</p>
<p><b>B</b></p>  <p>30 mm - Embeddable Rotational Speed Monitor, Potted-In Cable</p>	<p><b>C</b></p>  <p>18 mm - Nonembeddable Rotational Speed Monitor, Potted-In Cable</p>
<p><b>D</b></p>  <p>30 mm - Nonembeddable Rotational Speed Monitor, Potted-In Cable</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Specialty Sensors | Rotational Speed Monitor

### Threaded Metal Barrel for Target Detection on a Spinning Shaft

Part Number/ ID Number	Features	Sensing Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Face	End Cap	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
DBi5U-M18E-AP4X3 1582236	Rotational Speed Monitor	5	3-wire DC PNP	10-65 VDC	0.05-50	≤200	-30 to +85	IP67	CPB	PBT	EPTR	GN	YE/BU	2M/PVC	A	1	A4
DBi10U-M30-AP4X2 1582231	Rotational Speed Monitor	10	3-wire DC PNP	10-65 VDC	0.05-50	≤200	-30 to +85	IP67	CPB	PBT	EPTR	GN	YE/BU	2M/PVC	B	1	A4
DNI12U-M18E-AP4X3 1582235	Rotational Speed Monitor	12	3-wire DC PNP	10-65 VDC	0.05-50	≤200	-30 to +85	IP67	CPB	PBT	EPTR	GN	YE/BU	2M/PVC	C	1	A4
DNI20U-M30-AP4X3 1582233	Rotational Speed Monitor	20	3-wire DC PNP	10-65 VDC	0.05-50	≤200	-30 to +85	IP67	CPB	PBT	EPTR	GN	YE/BU	2M/PVC	D	1	A4

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# Notes









Notes



# Analog Sensors Selection Guide

Embeddable/Nonembeddable Rectangular			
			
Housing	8 mm	14 mm	20 mm
Sensing Range	7 mm	10 mm	15 mm
Pages	D5	D5	D5


Embeddable/Nonembeddable Rectangular			
			
Housing	40 mm	40 mm	80 mm
Sensing Range	15 - 25 mm	15 - 25 mm	50 mm
Pages	D7	D7	D7

Embeddable/Nonembeddable Barrels			
			
Housing	4 mm	5 mm	6.5 mm
Sensing Range	1.5 mm	1.5 mm	1.5 mm
Pages	D9	D9	D9




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## Analog Sensors Selection Guide

### Embeddable/Nonembeddable Barrels

			
Housing	12 mm	12 mm	18 mm
Sensing Range	2 - 5 mm	2 - 5 mm	5 - 10 mm
Pages	D11	D11	D11

### Embeddable/Nonembeddable Barrels

			
Housing	18 mm	30 mm	30 mm
Sensing Range	5 - 10 mm	10 - 15 mm	10 - 15 mm
Pages	D13	D13	D13

### Rings and Probe Style

			
Housing	14 mm	80 mm	18 mm
Sensing Range	20 mm	50 mm	40 - 70 mm
Pages	D15	D15	D15

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Analog Sensors

# Analog Sensor Part Number Key

<p><b>Mounting</b></p> <p>B = embeddable N = nonembeddable W = position</p> <p><b>Principle of Operation</b></p> <p>I = inductive IM = inductive magnet operated</p> <p><b>Rated Operating Distance (mm)</b></p> <p>15</p> <p><b>Sensing Characteristics</b></p> <p>R = ring sensor</p> <p><b>Housing Material Modifier</b></p> <p>E = stainless steel</p> <p><b>Housing Style</b></p> <p><b>Barrel - Metal</b></p> <p>G = full threading, generally chrome plated brass M = partial threading, chrome plated brass</p> <p><b>Rectangular</b></p> <p>Q = metal or plastic, various rectangular styles</p> <p><b>Limit Switch</b></p> <p>CK = Stubby®, short plastic, various rectangular styles CP = Combiprox®, plastic housing, terminal chamber base with removable sensor</p> <p><b>Ring</b></p> <p>Q = small rectangular plastic housing, static output</p>	<p><b>M 30</b></p> <p><b>LIU</b></p> <p><b>Wiring Option*</b></p> <p><b>Number of LEDs</b></p> <p>(blank) = no LEDs X = 1 LED</p> <p><b>Modifier</b></p> <p><b>Output</b></p> <p>LF = frequency output LI(LU) = linear analog output current (LI, 15-30 VDC) or voltage (LU, 15-30 VDC) LIU = linear analog output (current and voltage, 15-30 VDC) SIU = analog output (non-linear)</p> <p><b>Secondary Barrel Modifier</b></p> <p>E = extended barrel length</p> <p><b>Housing Diameter or Height (mm)</b></p>
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**NOTE:**  
Part number keys are to assist in identification only.  
Verify new part numbers with factory; some configurations are not possible.

\*See below for Wiring Options

We reserve the right to make technical alterations without prior notice.

## Wiring Options\*

### A. Connectorized Sensor

BI15 - M30 - LIU - **H1 1 4 1**

<p><b>Connector Family</b></p> <p>H1 = Eurofast®, M12x1, metal or plastic, male V1 = Picofast®, snap and M8x1, metal, male (Q08 snap only)</p> <p><b>Connector/Sensor Transition</b></p> <p>1 = straight</p>	<p><b>Factory Code</b></p> <p><b>Example:</b></p> <p>1 = standard wiring</p> <p><b>Number of Pins</b></p>
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### B. Potted Cable

Bi 5 - M18 - LIU - **7M**

<p><b>Cable Length</b></p> <p>Blank = 2 Meter cable 7M = 7 Meter cable</p>
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# Analog Sensors

## Common Applications for Linear Analog Sensors


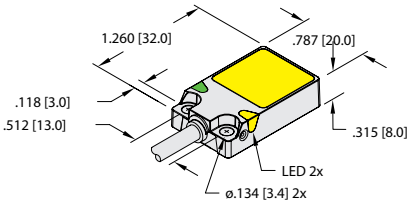
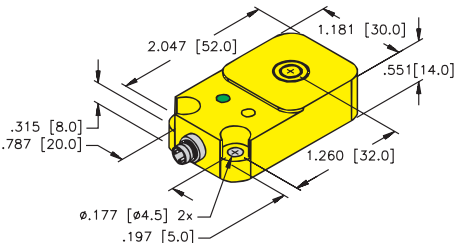
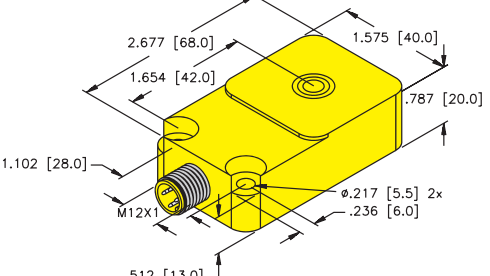
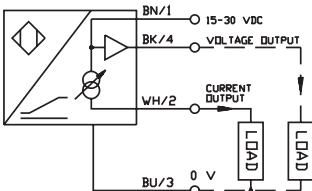
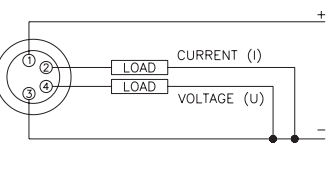
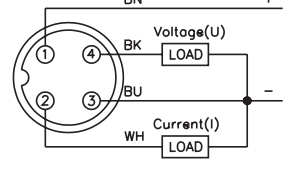
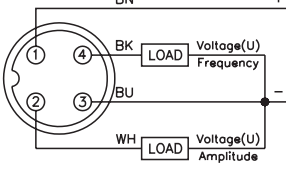
	<p><b>Position Feeding Over an Angled Target</b></p> <ul style="list-style-type: none"> <li>• Actuation over an angled surface</li> <li>• Provide a 4-20 mA and/or 0-10 V output based upon target position</li> </ul>
	<p><b>Eccentricity Sensing or Absolute Angle Positioning</b></p> <ul style="list-style-type: none"> <li>• Sense pieces of different shapes and sizes (of ferritic or nonferritic materials)</li> <li>• Provide analog feedback on rotary cam position applications</li> </ul>
	<p><b>Direct Actuation</b></p> <ul style="list-style-type: none"> <li>• The highest accuracy is achieved if the sensor is directly actuated by the target. In order to utilize the full measuring range, it is important to work with an appropriately sized target. This may also be a moving part of the machine.</li> </ul>
	<p><b>Part Deflection</b></p> <ul style="list-style-type: none"> <li>• Tensile stress control applications</li> <li>• Measure the deflection of a metal target by using a guide mechanism and an analog sensor.</li> </ul>
	<p><b>Probe Style Analog+ Proximity Sensor</b></p> <ul style="list-style-type: none"> <li>• These sensors can be used to detect the depth of a blind hole or be used with a ring attached to a control arm that moves the ring over the probe</li> </ul>
	<p><b>Identification and Sorting of Small Parts</b></p> <ul style="list-style-type: none"> <li>• When screws, rivets, or other small objects fall through a ring style sensor, each part generates a characteristic output signal which can be easily identified</li> </ul>
	<p><b>Position Control</b></p> <ul style="list-style-type: none"> <li>• Position control can be easily accomplished by means of a cone shaped target. Measuring ranges can be adapted to specific sensing needs by using targets with an appropriate conical shape. These sensors enable precise and simple position detection, even if the targets feature a slight offset.</li> </ul>
	<p><b>Thickness Measurement</b></p> <ul style="list-style-type: none"> <li>• Detection and measurement of tools (drill bits, taps, etc.) can be accomplished to ensure proper size</li> </ul>

We reserve the right to make technical alterations without prior notice.

Analog Sensors

# Analog Sensors | Q08, Q14, & Q20

## Top Sensing Qpak Housing

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>8 mm - Embeddable, Potted-In Cable</p>
<p><b>B</b></p>  <p>14 mm - Embeddable, M8 Picofast Connection</p>	<p><b>C</b></p>  <p>20 mm - Embeddable, M12 Eurofast Connection</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p>  <p>Mating Cordset: PKG 4M-*</p>
<p><b>3</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.4T</p>
A7 3 and 4-wire DC Analog - (LIU, SIU)	
<p>Ripple: <math>\leq 10\%</math>          No-Load Current: <math>\leq 8.0</math> mA          Load Resistance Voltage Output: <math>0-10</math> V/<math>R_L \geq 4.7</math> k<math>\Omega</math>          Load Resistance Current Output: <math>0-20</math> mA/<math>R_L \leq 0.4</math> k<math>\Omega</math>          Temperature Drift: <math>\pm 0.06\%</math> / °C          LIU5: 4-20 mA, 0-10 V          LIU2: 4-20 mA, 2-10 V</p>	<p>Transient Protection: Per EN 60947-5-2          Shock: 30 g, 11 ms          Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes          Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)          Short-Circuit Protection: Yes          Reverse Polarity Protection: Incorporated</p>
A8 3 and 4-wire DC Analog - (LU)	
<p>Ripple: <math>\leq 10\%</math>          No-Load Current: <math>\leq 8.0</math> mA          Load Resistance Voltage Output: <math>0-10</math> V/<math>R_L \geq 4.7</math> k<math>\Omega</math>          Temperature Drift: <math>\pm 0.06\%</math> / °C          Reverse Polarity Protection: Incorporated          Transient Protection: Per EN 60947-5-2</p>	<p>Short-Circuit Protection: Yes          Wire-Break Protection: Yes          Shock: 30 g, 11 ms          Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes          Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p>

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# Analog Sensors | Q08, Q14, & Q20


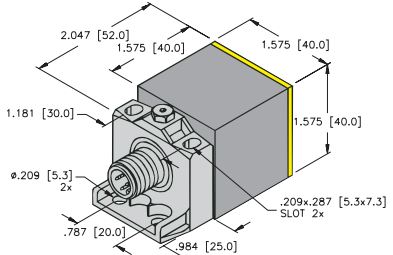
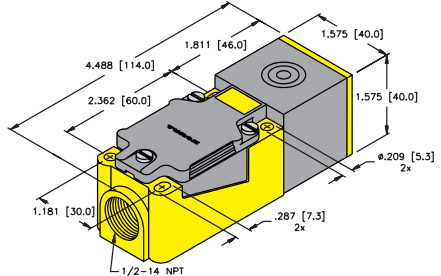
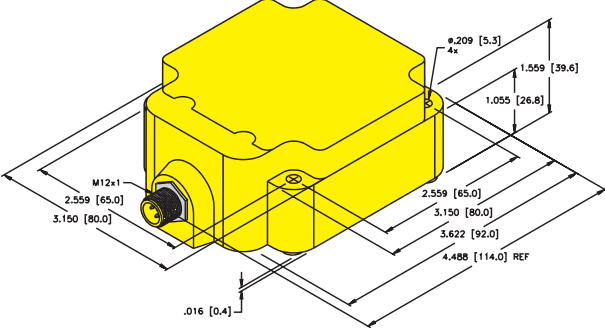
## Top Sensing Qpak Housing

Part Number/ ID Number	Features	Measuring Range (mm)	Response Freq. (Hz)	Linearity Deviation (% of full scale)	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Slew Rate V/ms, mA/ms	Housing	Face	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi7-Q08-LIU 1534605		1-4	200	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP68	4, 8	Zamak	PP	2M/ TPU	A	1	A7
Bi10-Q14-LIU-V1141 1534603		3-8	140	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.8, 5.6	PBT	PBT	--	B	2	A7
Bi15-Q20-LIU-H1141 1534601		4-11	110	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.2, 4.4	PBT	PBT	--	C	3	A7
Bi15-Q20-2LU-H1141/S950 1534611	All Metal Detection	N/A	110	N/A	4-wire DC Voltage	15-30 VDC	0-10 VDC Amplitude, 0-10 VDC Phase	-25 to +70	IP67	2.2	PBT	PBT	--	C	4	A8

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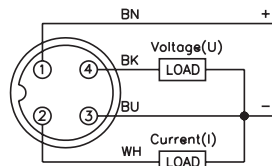
# Analog Sensors | CK40, CP40, & Q80

## Rectangular Housings with Long Range

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>40 mm - Embeddable and Non-embeddable, M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>40 mm - Embeddable and Nonembeddable, Terminal Chamber</p>	<p><b>C</b></p>  <p>80 mm - Nonembeddable, M12 Eurofast Connector</p>

### Wiring Diagrams/Mating Cordsets

1



Mating Cordset: RK 4.4T-\*

A7

### 3 and 4-wire DC Analog - (LIU, SIU)

Ripple:	≤10%
No-Load Current:	≤8.0 mA
Load Resistance Voltage Output:	0-10 V/R <sub>L</sub> ≥4.7 kΩ
Load Resistance Current Output:	0-20 mA/R <sub>L</sub> ≤0.4 kΩ
Temperature Drift:	±0.06% / °C
LIU5:	4-20 mA, 0-10 V
LIU2:	4-20 mA, 2-10 V

Transient Protection:	Per EN 60947-5-2
Shock:	30 g, 11 ms
Vibration:	55 Hz, 1 mm Amplitude, in all 3 Planes
Repeatability:	≤1% of measuring range  A-B  (0.5% after 30 min. warm up)
Short-Circuit Protection:	Yes
Reverse Polarity Protection:	Incorporated

We reserve the right to make technical alterations without prior notice.

# Analog Sensors | CK40, CP40, & Q80


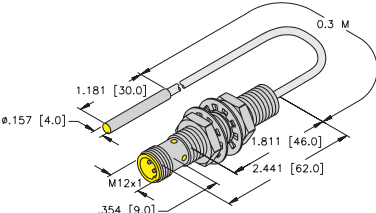
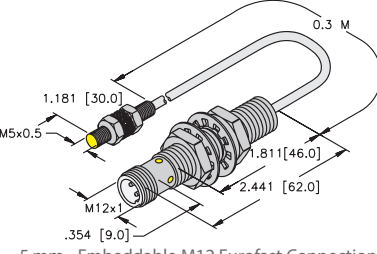
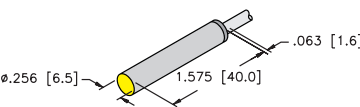
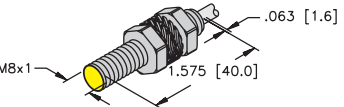
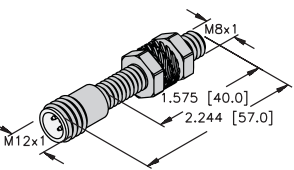
## Rectangular Housings with Long Range

Part Number/ ID Number	Measuring Range (mm)	Response Freq. (Hz)	Linearity Deviation (% of full scale)	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Slew Rate V/ms, mA/ms	Housing	Face	Dimension Drawings	Wiring Diagrams	Spec List
Bi15-CK40-LIU-H1141 1537890	4-11	110	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.2, 4.4	PBT	PA 12	A	1	A7
Ni25-CK40-LIU-H1141 1537891	5-25	30	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	0.6, 1.2	PBT	PA 12	A	1	A7
Ni25-CK40-LIU2-H1141 1537892	5-25	30	0.05	4-wire DC Current or Voltage	15-30 VDC	2-10 V/4-20 mA	-25 to +70	IP67	0.6, 0.96	PBT	PA 12	A	1	A7
Bi15-CP40-LIU/S10 153557	4-11	110	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.2, 4.4	PBT	PBT	B	1	A7
Ni25-CP40-LIU/S10 1535547	5-25	30	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	0.6, 1.2	PBT	PBT	B	1	A7
Ni50-Q80-LIU-H1141 1535545	10-50	30	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	0.6, 1.2	PBT	PBT	C	1	A7

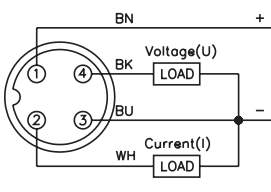
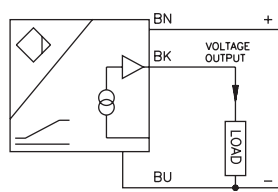
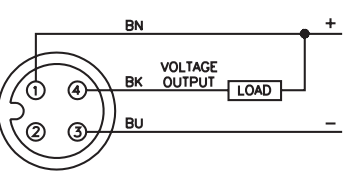
We reserve the right to make technical alterations without prior notice.

# Analog Sensors | EH04, EG05, EH6.5, & EG08

## Picoprox Barrel Styles

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>4 mm - Embeddable M12 Eurofast Connection</p>
<p><b>B</b></p>  <p>5 mm - Embeddable M12 Eurofast Connection</p>	<p><b>C</b></p>  <p>6.5 mm - Embeddable, Potted-In Cable</p>
<p><b>D</b></p>  <p>8 mm - Embeddable, Potted-In Cable</p>	<p><b>E</b></p>  <p>8 mm - Embeddable, M12 Eurofast Connection</p>

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RK 4T-*</p>

A7	3 and 4-wire DC Analog - (LIU, SIU)	
<p>Ripple: <math>\leq 10\%</math></p> <p>No-Load Current: <math>\leq 8.0</math> mA</p> <p>Load Resistance Voltage Output: <math>0-10 V/R_L \geq 4.7</math> k<math>\Omega</math></p> <p>Load Resistance Current Output: <math>0-20</math> mA/<math>R_L \leq 0.4</math> k<math>\Omega</math></p> <p>Temperature Drift: <math>\pm 0.06\%</math> / <math>^{\circ}\text{C}</math></p> <p>LIU5: 4-20 mA, 0-10 V</p> <p>LIU2: 4-20 mA, 2-10 V</p>	<p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Incorporated</p>	
A8	3 and 4-wire DC Analog - (LU)	
<p>Ripple: <math>\leq 10\%</math></p> <p>No-Load Current: <math>\leq 8.0</math> mA</p> <p>Load Resistance Voltage Output: <math>0-10 V/R_L \geq 4.7</math> k<math>\Omega</math></p> <p>Temperature Drift: <math>\pm 0.06\%</math> / <math>^{\circ}\text{C}</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p>	<p>Short-Circuit Protection: Yes</p> <p>Wire-Break Protection: Yes</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p>	

# Analog Sensors | EH04, EG05, EH6.5, & EG08


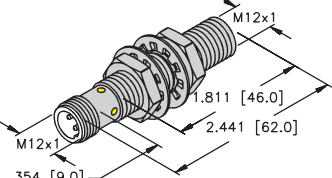
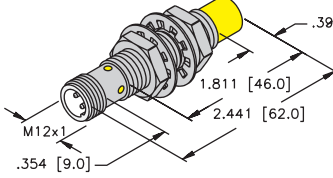
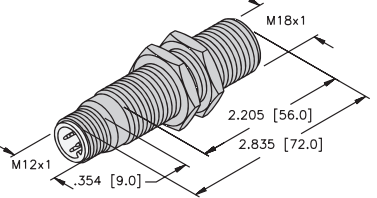
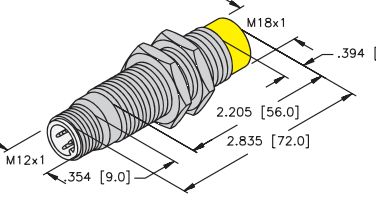
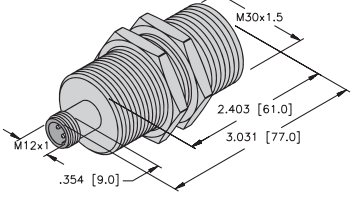
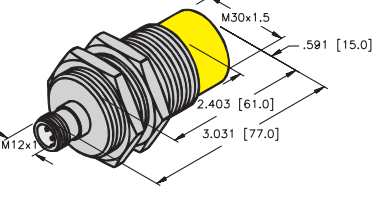
## Picoprox Barrel Styles

Part Number/ ID Number	Measuring Range (mm)	Response Freq. (Hz)	Linearity Deviation (% of full scale)	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Slew Rate V/ms, mA/ms	Housing	Face	Dimension Drawings	Wiring Diagrams	Spec List
Bi1.5-EH04-0.3-M12-SIU-H1141 1533001	0.1-1.5	200	N/A	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	SS	PA 12	A	1	A7
Bi1.5-EG05-0.3-M12-SIU-H1141 1533005	0.1-1.5	200	N/A	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	SS	PA 12	B	1	A7
Bi1.5-EH6.5-LU 1533002	0.25-1.25	200	0.03	3-wire DC Voltage	15-30 VDC	0-10 V	-25 to +70	IP67	4, N/A	SS	PA 12	C	2	A8
Bi1.5-EG08-LU 1533003	0.25-1.25	200	0.03	3-wire DC Voltage	15-30 VDC	0-10 V	-25 to +70	IP67	4, N/A	SS	PA 12	D	2	A8
Bi1.5-EG08-LU-H1341 1533004	0.25-1.25	200	0.03	3-wire DC Voltage	15-30 VDC	0-10 V	-25 to +70	IP67	4, N/A	SS	PA 12	E	3	A8

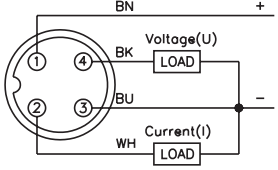
We reserve the right to make technical alterations without prior notice.

# Analog Sensors | M12, M18, & M30

## Threaded Barrel Styles with Connector

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable M12 Eurofast Connection</p>	<p><b>B</b></p>  <p>12 mm - Nonembeddable M12 Eurofast Connection</p>
<p><b>C</b></p>  <p>18 mm - Embeddable M12 Eurofast Connection</p>	<p><b>D</b></p>  <p>18 mm - Nonembeddable M12 Eurofast Connection</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>F</b></p>  <p>30 mm - Nonembeddable, M12 Eurofast Connection</p>		

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets	
<p>1</p>  <p>Mating Cordset: RK 4.4T-*</p>	

A7 3 and 4-wire DC Analog - (LIU, SIU)	
<p>Ripple: <math>\leq 10\%</math>                      No-Load Current: <math>\leq 8.0 \text{ mA}</math>                      Load Resistance Voltage Output: <math>0-10 \text{ V}/R_L \geq 4.7 \text{ k}\Omega</math>                      Load Resistance Current Output: <math>0-20 \text{ mA}/R_L \leq 0.4 \text{ k}\Omega</math>                      Temperature Drift: <math>\pm 0.06\% / ^\circ\text{C}</math>                      LIU5: 4-20 mA, 0-10 V                      LIU2: 4-20 mA, 2-10 V</p>	<p>Transient Protection: Per EN 60947-5-2                      Shock: 30 g, 11 ms                      Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes                      Repeatability: <math>\leq 1\%</math> of measuring range  A-B                       (0.5% after 30 min. warm up)                      Short-Circuit Protection: Yes                      Reverse Polarity Protection: Incorporated</p>



# Analog Sensors | M12, M18, & M30


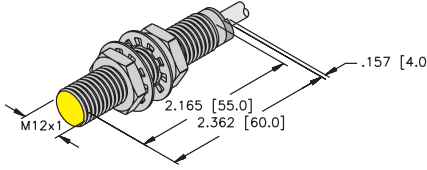
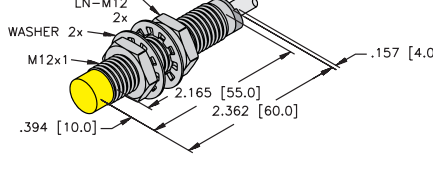
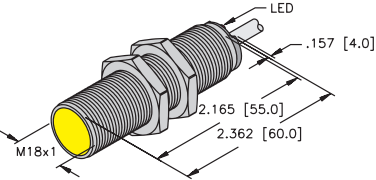
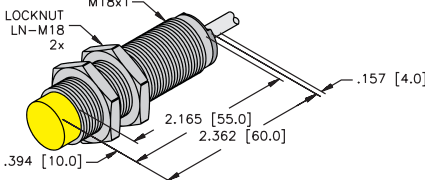
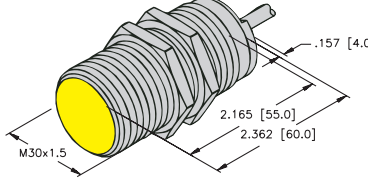
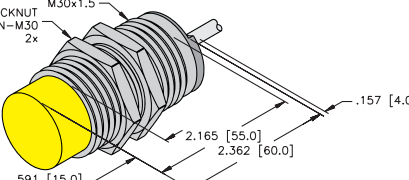
## Threaded Barrel Styles with Connector

Part Number/ ID Number	Features	Measuring Range (mm)	Response Freq. (Hz)	Linearity Deviation (% of full scale)	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Slew Rate V/ms, mA/ms	Housing	Face	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-M12-LIU-H1141 1535533		1-2.5	200	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	A	1	A7
Bi4-M12-LIU-H1141 1535531	Ext. Range	0.5-3	200	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	A	1	A7
Ni5-M12-LIU-H1141 1535535		0.5-4	100	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2, 4	CPB	PA 12	B	1	A7
Bi5-M18E-LIU-H1141 1536205		2-4	200	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	C	1	A7
Bi8-M18E-LIU-H1141 1535561	Ext. Range	1-5	200	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	C	1	A7
Ni8-M18E-LIU-H1141 1536302		1-5	100	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2, 4	CPB	PA 12	D	1	A7
Ni10-M18E-LIU-H1141 1535562	Ext. Range	1-7	100	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2, 4	CPB	PA 12	D	1	A7
Bi10-M30E-LIU-H1141 1537003		3-8	140	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.8, 5.6	CPB	PA 12	E	1	A7
Bi15-M30E-LIU-H1141 1535563	Ext. Range	2-10	140	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.8, 5.6	CPB	PA 12	E	1	A7
Ni15-M30E-LIU-H1141 1535564		2-12	60	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	1.2, 2.4	CPB	PA 12	F	1	A7

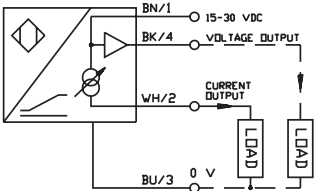
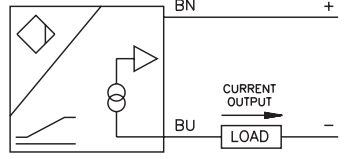
We reserve the right to make technical alterations without prior notice.

# Analog Sensors | M12, M18, & M30

## Threaded Barrel Styles with Cable

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Embeddable, Potted-In Cable</p>	<p><b>B</b></p>  <p>12 mm - Nonembeddable, Potted-In Cable</p>
<p><b>C</b></p>  <p>18 mm - Embeddable, Potted-In Cable</p>	<p><b>D</b></p>  <p>18 mm - Nonembeddable, Potted-In Cable</p>	<p><b>E</b></p>  <p>30 mm - Embeddable, Potted-In Cable</p>
<p><b>F</b></p>  <p>30 mm - Nonembeddable, Potted-In Cable</p>		

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 

A7	3 and 4-wire DC Analog - (LIU, SIU)	
<p>Ripple: <math>\leq 10\%</math></p> <p>No-Load Current: <math>\leq 8.0 \text{ mA}</math></p> <p>Load Resistance Voltage Output: <math>0-10 \text{ V/R}_L \geq 4.7 \text{ k}\Omega</math></p> <p>Load Resistance Current Output: <math>0-20 \text{ mA/R}_L \leq 0.4 \text{ k}\Omega</math></p> <p>Temperature Drift: <math>\pm 0.06\% / ^\circ\text{C}</math></p> <p>LIU5: <math>4-20 \text{ mA}, 0-10 \text{ V}</math></p> <p>LIU2: <math>4-20 \text{ mA}, 2-10 \text{ V}</math></p>	<p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: <math>30 \text{ g}, 11 \text{ ms}</math></p> <p>Vibration: <math>55 \text{ Hz}, 1 \text{ mm Amplitude}, \text{ in all 3 Planes}</math></p> <p>Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Incorporated</p>	
A9	2-wire DC Analog NAMUR - (LI-EXI)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Current Output: <math>4-20 \text{ mA}</math></p> <p>Nominal Voltage: <math>8.2 \text{ VDC (EN60947-5-6)}</math></p> <p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: No</p> <p>Transient Protection: Realized in Amplifier</p>	<p>Temperature Drift: <math>\leq \pm 0.06\% / ^\circ\text{C}</math></p> <p>Shock: <math>30 \text{ g}, 11 \text{ ms}</math></p> <p>Vibration: <math>55 \text{ Hz}, 1 \text{ mm Amplitude}, \text{ in all 3 Planes}</math></p> <p>Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p>	

# Analog Sensors | M12, M18, & M30

## Threaded Barrel Styles with Cable


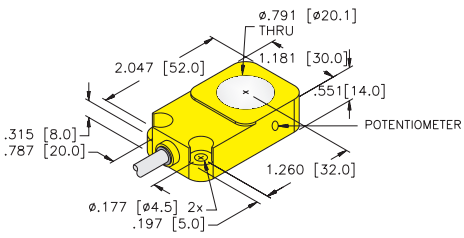
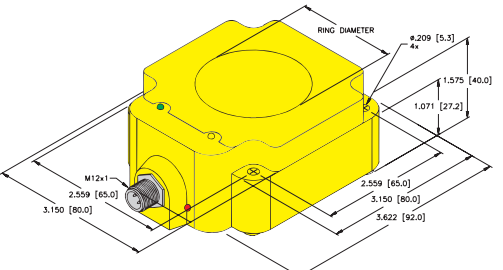
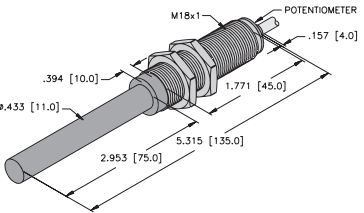
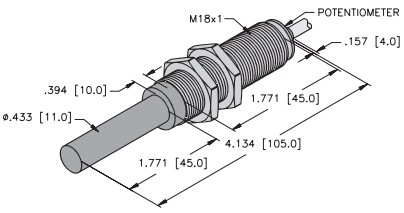
Part Number/ ID Number	Features	Measuring Range (mm)	Response Freq. (Hz)	Linearity Deviation (% of full scale)	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Slew Rate V/ms, mA/ms	Housing	Face	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi4-M12-LIU 1535532	Ext. Range	0.5-3	200	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	2M/ PVC	A	1	A7
Ni5-M12-LIU 1535536		0.5-4	100	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2, 4	CPB	PA 12	2M/ PVC	B	1	A7
Bi5-M18-LIU 1536000		2-4	200	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	2M/ PVC	C	1	A7
Bi8-M18-LIU 1535538	Ext. Range	1-5	200	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	4, 8	CPB	PA 12	2M/ PVC	C	1	A7
Bi8-M18-LI-EXI 1535528	Ext. Range, Use Barriers IM33-11EX-HI or IM43-13-SR	1-5	200	0.05	2-wire DC Current	14-30 VDC	4-20 mA	-25 to +70	IP67	N/A, 8	CPB	PA 12	2M/ PVC	C	2	A9
Ni8-M18-LIU 1536100	Ext. Range	1-5	100	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2, 4	CPB	PA 12	2M/ PVC	D	1	A7
Ni10-M18-LIU 1535540	Ext. Range	1-7	100	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2, 4	CPB	PA 12	2M/ PVC	D	1	A7
Bi10-M30-LIU 15355		3-8	140	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.8, 5.6	CPB	PA 12	2M/ PVC	E	1	A7
Bi15-M30-LIU 1535543	Ext. Range	2-10	140	0.05	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	2.8, 5.6	CPB	PA 12	2M/ PVC	E	1	A7
Bi15-M30-LI-EXI 1535554	Ext. Range, Use Barriers IM33-11EX-HI or IM43-13-SR	2-10	140	0.05	2-wire DC Current	14-30 VDC	4-20 mA	-25 to +70	IP67	N/A, 4.48	CPB	PA 12	2M/ PVC	E	2	A9
Ni15-M30-LIU 1535300	Ext. Range	2-12	60	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/0-20 mA	-25 to +70	IP67	1.2, 2.4	CPB	PA 12	2M/ PVC	F	1	A7

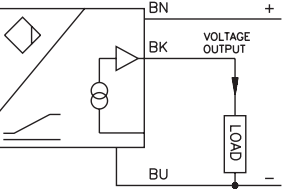
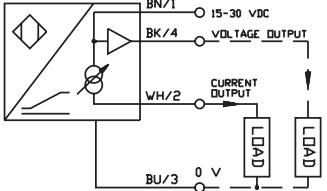
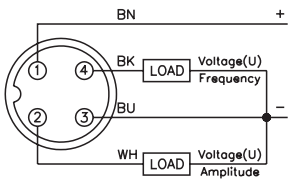
We reserve the right to make technical alterations without prior notice.

Analog Sensors

# Analog Sensors | Q14, Q80 & M18

## Probe and Ring Style Housings

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>14 mm - Embeddable, Ring Sensor, Potted-In Cable</p>	<p><b>B</b></p>  <p>80 mm - Embeddable, M12 Eurofast Connection</p>
<p><b>C</b></p>  <p>18 mm - Embeddable, Probe Style, Potted-In Cable</p>	<p><b>D</b></p>  <p>18 mm - Embeddable, Probe Style, Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RK 4.4T</p>

A7	3 and 4-wire DC Analog - (LIU, SIU)	
<p>Ripple: <math>\leq 10\%</math></p> <p>No-Load Current: <math>\leq 8.0 \text{ mA}</math></p> <p>Load Resistance Voltage Output: <math>0-10 \text{ V/R}_L \geq 4.7 \text{ k}\Omega</math></p> <p>Load Resistance Current Output: <math>0-20 \text{ mA/R}_L \leq 0.4 \text{ k}\Omega</math></p> <p>Temperature Drift: <math>\pm 0.06\% / ^\circ\text{C}</math></p> <p>LIU5: 4-20 mA, 0-10 V</p> <p>LIU2: 4-20 mA, 2-10 V</p>	<p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Incorporated</p>	
A8	3 and 4-wire DC Analog - (LU)	
<p>Ripple: <math>\leq 10\%</math></p> <p>No-Load Current: <math>\leq 8.0 \text{ mA}</math></p> <p>Load Resistance Voltage Output: <math>0-10 \text{ V/R}_L \geq 4.7 \text{ k}\Omega</math></p> <p>Temperature Drift: <math>\pm 0.06\% / ^\circ\text{C}</math></p> <p>Reverse Polarity Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p>	<p>Short-Circuit Protection: Yes</p> <p>Wire-Break Protection: Yes</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p>	

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## Analog Sensors | Q14, Q80 & M18

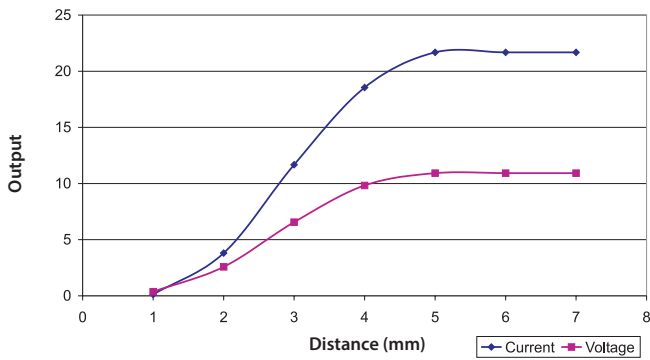
### Probe and Ring Style Housings

Part Number/ ID Number	Features	Measuring Range (mm)	Response Freq. (Hz)	Linearity Deviation (% of full scale)	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Slew Rate V/ms, mA/ms	Housing	Face	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Bi20R-Q14-LU 1535546		1-19	80	N/A	3-wire DC Voltage	15-30 VDC	0-10 V	-25 to +70	IP67	2.8, N/A	PBT	PBT	2M/ PVC	A	1	A8
Bi50R-Q80-2LU-H1141/S950 1534609	All Metal Detection	N/A	80	N/A	4-wire DC Voltage	15-30 VDC	0-10 VDC Amplitude, 1-10 VDC Phase	-25 to +70	IP67	1.6	PBT	PBT	--	B	3	A8
Wi70-M18-LIU5 1536600		0-70	200	0.03	4-wire DC Current or Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	4, 6.4	CPB	PA 12	2M/ PVC	C	2	A7
Wi40-M18-LIU5 1536603		0-40	40	0.02	4-wire DC Current or Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	0.8, 1.2	CPB	PA 12	2M/ PVC	D	2	A7

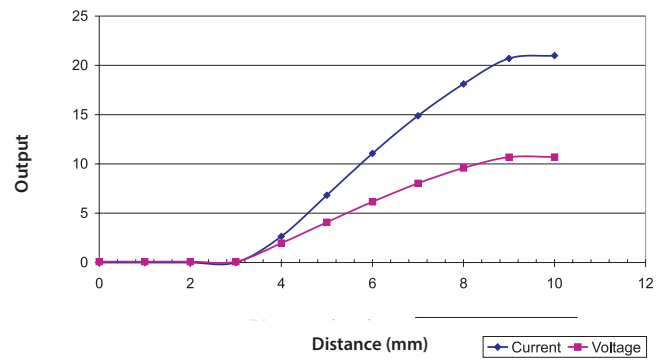
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# Analog Sensors

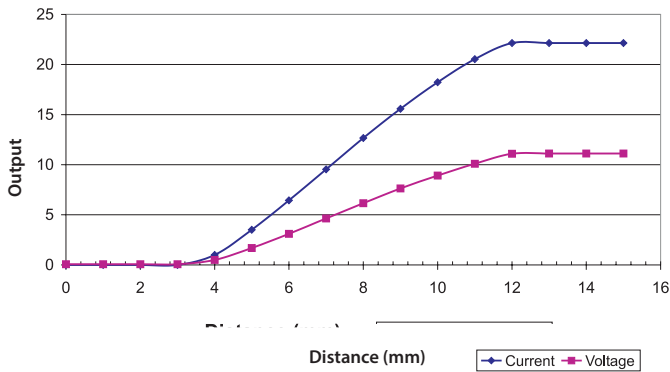
Bi7-Q08-LIU



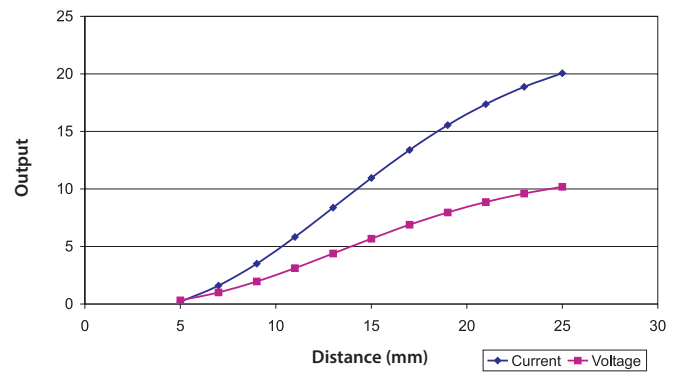
Bi10-Q14-LIU-H1141



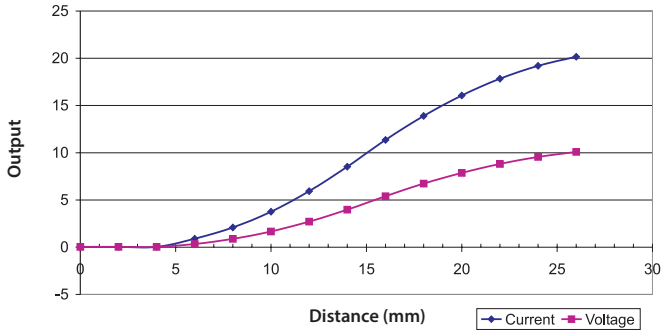
Bi15-Q20-LIU-H1141



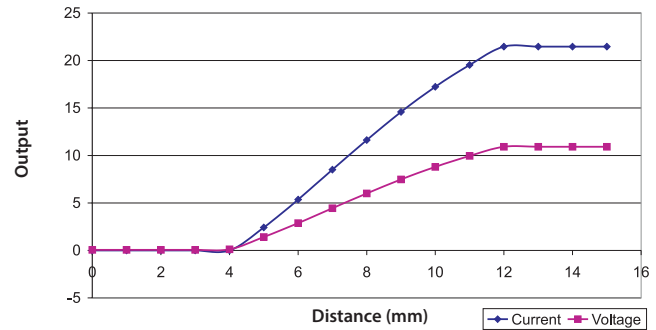
Ni25-CP40-LIU



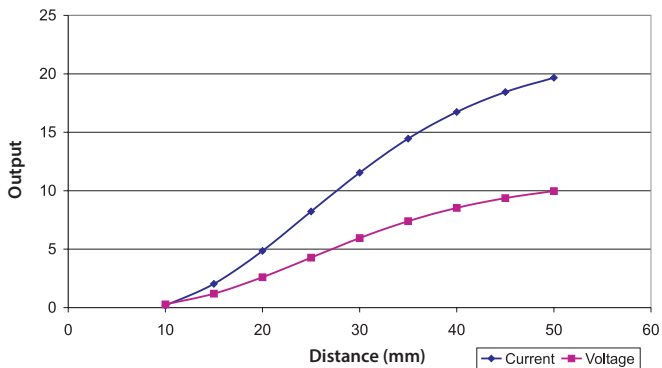
Ni25-CK40-LIU-H1141



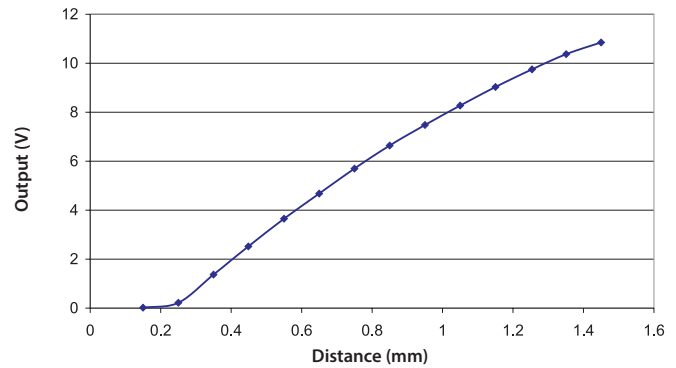
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Ni50-Q80-LIU-H1141



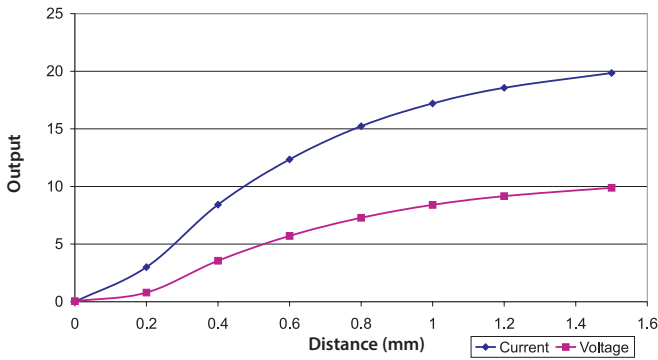
Bi1.5-EG08(EH6.5)-LIU



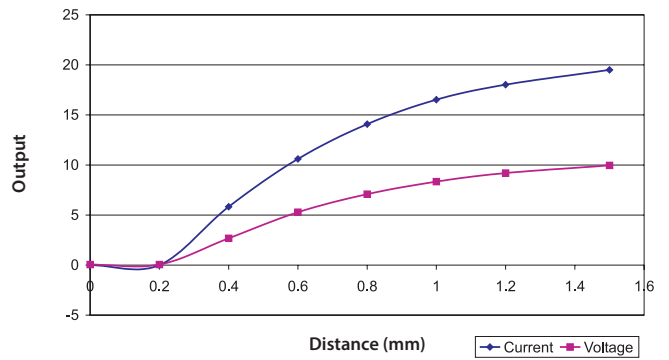
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Analog Sensors

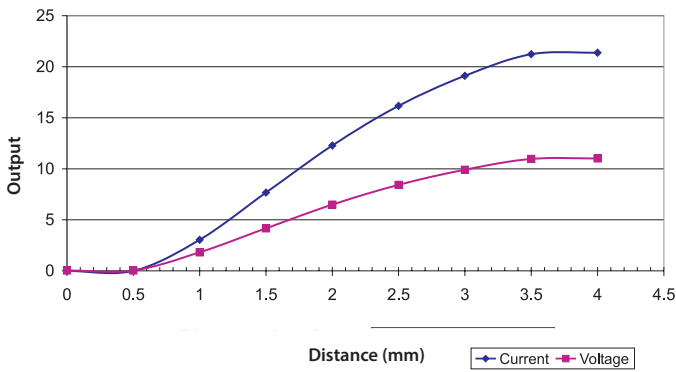
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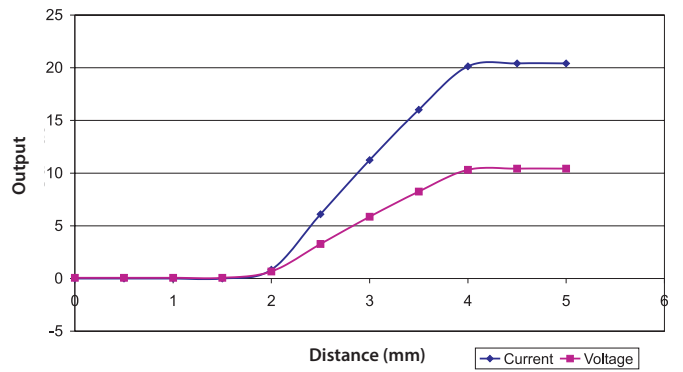
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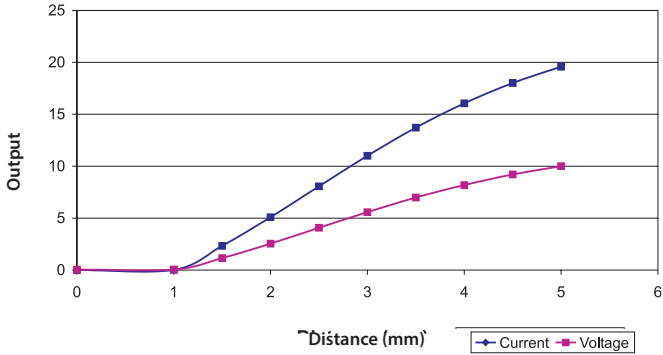
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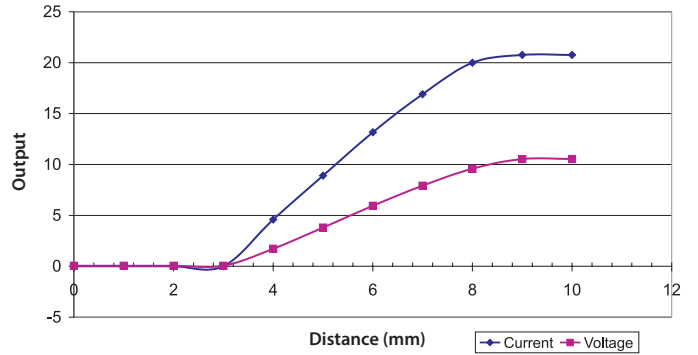
Bi5-M18-LIU...



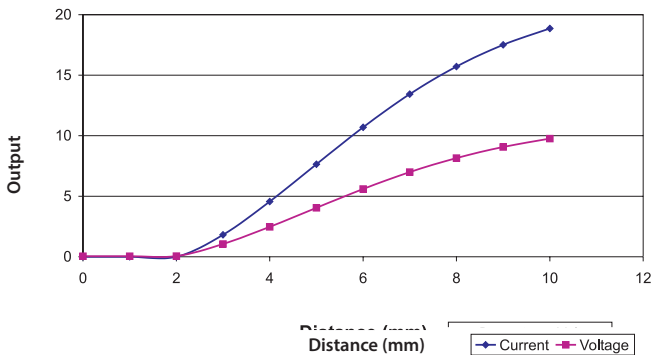
Bi8-M18E-LIU...



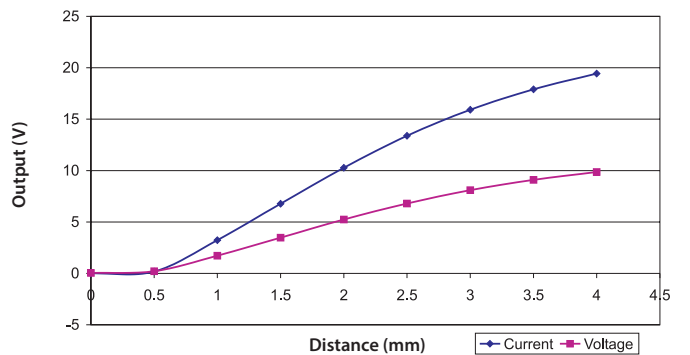
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Bi15-M30E-LIU...



Ni5-M12-LIU...

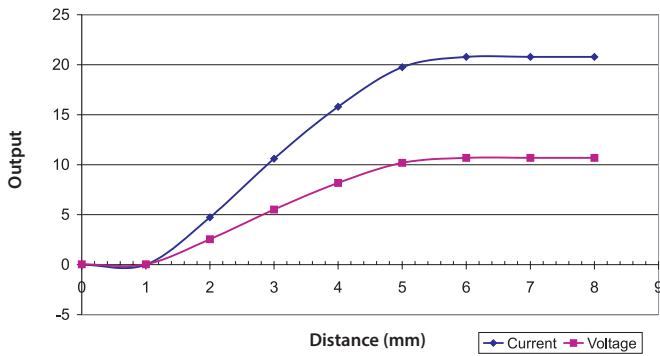


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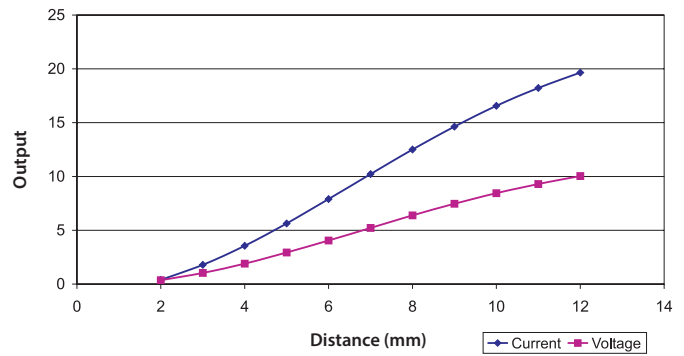
Analog Sensors

# Analog Sensors

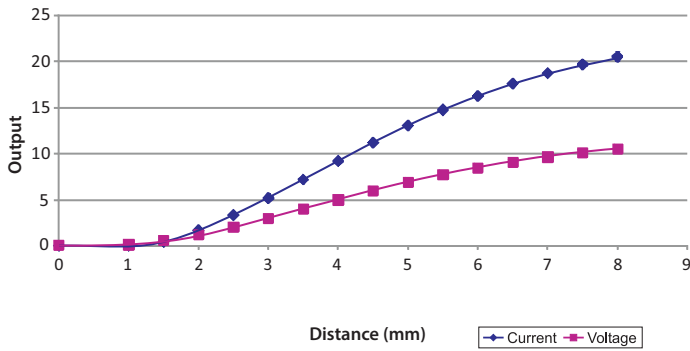
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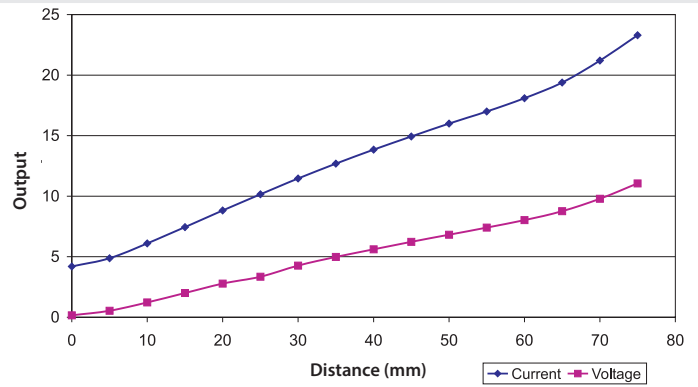
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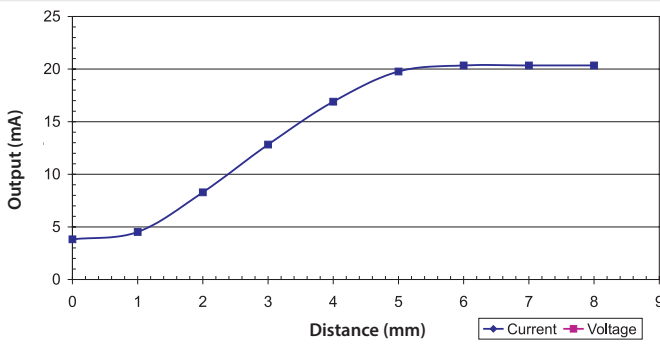
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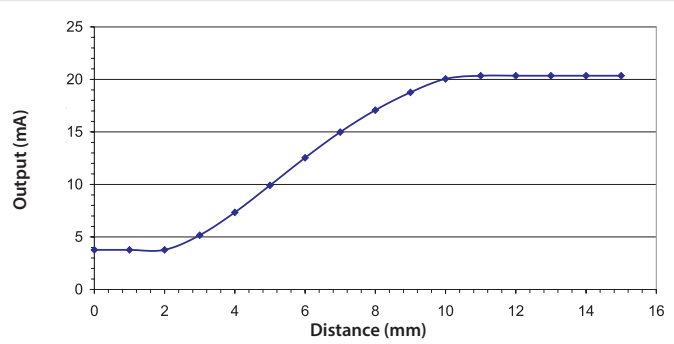
Wi70-M18-LIU5



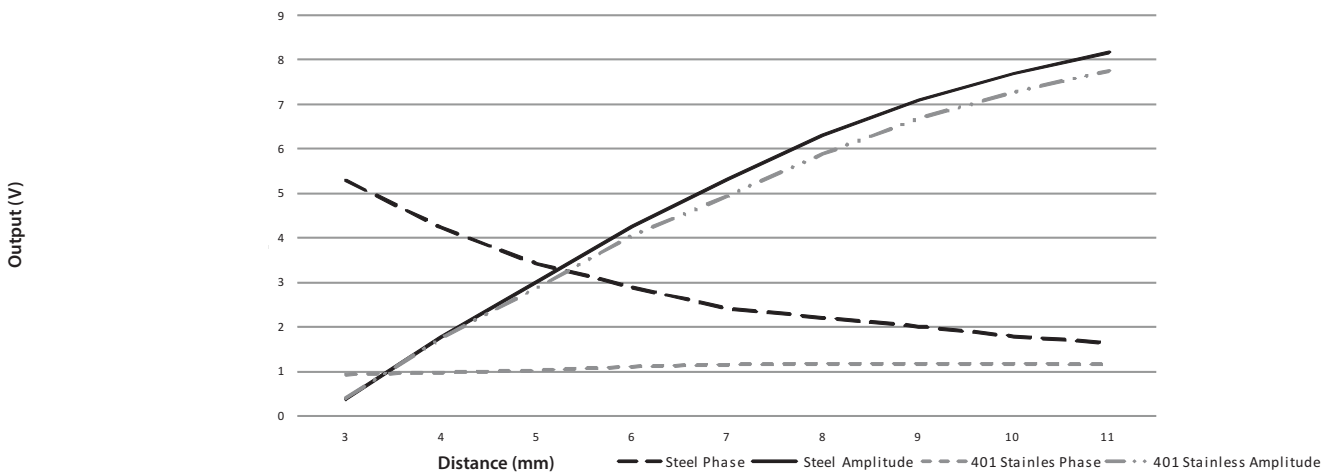
Bi 8-M18-Li Exi



Bi15-M30-LI-Exi



Bi15-Q20-2LU-H1141/S950



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Notes






# Capacitive Sensor Selection Guide

## Embeddable/Nonembeddable Rectangular

					
Housing	5.5 mm	8 mm	10 mm	14 mm	20 mm
Sensing Range	5 - 10 mm	5 mm	8 mm	10 - 15 mm	10 - 20 mm
Pages	E3	E5	E5	E7	E9




## Embeddable/Nonembeddable Rectangular and Barrels

					
Housing	40 mm	80 mm	12 mm	12 mm	18 mm
Sensing Range	20 - 30 mm	50 mm	3 mm	3 - 4.5 mm	5 mm
Pages	E11	E11	E13	E13	E15

## Embeddable/Nonembeddable Barrels

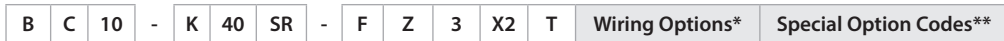
					
Housing	18 mm	18 mm BCT	30 mm BCT	30 mm	30 mm
Sensing Range	5 - 7.5 mm	5 - 7.5 mm	10 - 15 mm	10 mm	10 - 15 mm
Pages	E17	E19	E19	E21 - 24	E25 - 28

## Embeddable/Nonembeddable Plastic Barrels

			
Housing	34 mm	40 mm	Variable
Sensing Range	15 - 23 mm	20 - 30 mm	5 - 10 mm
Pages	E29 - 34	E29 - 32	E35

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# Capacitive Sensor Part Number Key



**Mounting**

- B = embeddable
- N = nonembeddable

**Principle of Operation**

- C = capacitive
- CC = capacitive (low dielectric targets)
- CF = capacitive (noise immune)
- CT = capacitive teach

**Rated Operating Distance (mm)**

**Housing Style**

**Barrel - Metal**

- M = partial threading, chrome plated brass

**Barrel - Plastic**

- K = smooth
- KT = PVDF, smooth
- P = full threading
- PT = PVDF, full threading
- S = partial threading

**Rectangular**

- Q = metal or plastic, various rectangular styles
- QF = plastic, Polypropylene rectangular style

**Housing Diameter or Height (mm)**

**NOTE:**

Part Number Keys are to assist in identification only.  
Verify new part numbers with factory;  
Some configurations are not possible.

**Teach Button**

**Number of LEDs**

- (blank) = no LEDs
- X = 1 LED
- X2 = 2 LEDs

**Voltage Range**

**AC/DC: (No SCP\*\*)**

- 3 = 20-250 VAC

**DC:**

- 4 = 10-65 VAC, polarity protected, pulsed SCP\*\*
- 6 = 10-30 VAC, polarity protected, pulsed SCP

**DC:**

- 4 = 10-65 VDC, polarity protected, pulsed SCP\*\*
- 6 = 10-30 VDC, polarity protected, pulsed SCP

\*\*SCP = short-circuit and overload protection

**Output**

- N = NPN transistor (current sinking)
- P = PNP transistor (current sourcing)
- Z = 2-wire AC or 2-wire AC/DC

**Output Function**

- A = normally open (N.O.)
- F = connection programmable (N.O. or N.C.)
- R = normally closed (N.C.)
- V = complementary outputs: one N.O., one N.C.
- Y0 = NAMUR output, requires switching amplifier
- Y1 = NAMUR output, requires switching amplifier/ATEX approved

**Secondary Housing Modifier**

- SR = straight terminal chamber

We reserve the right to make technical alterations without prior notice.

Capacitive Sensors

**Wiring Options\***

**A. Connectorized Sensor**



**Connector Family**

- B1 = Minifast®, Metal, Male
- B2 = Minifast, Plastic, Male
- B3 = Microfast®, Metal, Male
- H1 = Eurofast®, Metal or Plastic, Male
- V1 = Picofast®, Metal, Male

**Connector/Sensor Transition**

- 1 = straight

**Wiring Configuration**

**Example:**

- 1 = Standard
- 3 = N.C. DC Output on Pin 4 (for US)

**Number of Pins**

**B. Potted Cable**



**Cable Length**

- Blank = 2 Meter cable
- 7M = 7 Meter cable

**Special Option Codes\*\***




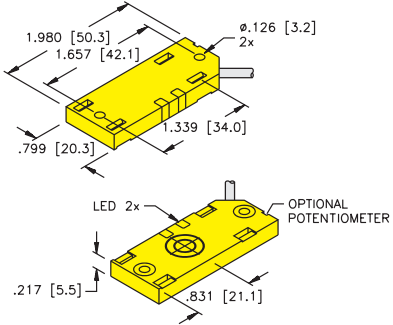
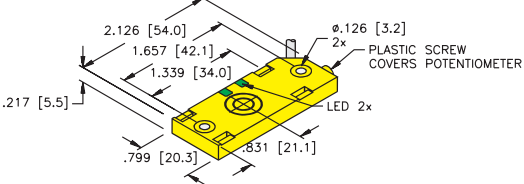
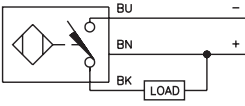
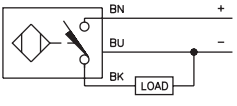
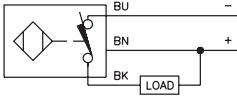
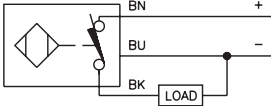
**Option Code**

**Example:**

- /S250 = No Potentiometer
- /S400 = Rear LEDs (for Q14 and Q20 only)

# Capacitive Sensors | QF5.5

## Top Sensing Thin Qpak Housing with DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>5.5 mm - Potted-In Cable</p>
<p><b>B</b></p>  <p>5.5 mm - Potted-In Cable, w/Potentiometer Cover</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 
<p><b>3</b></p> 	<p><b>4</b></p> 
A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math>          Differential Travel (Hysteresis): 2-20% (5% typical)          Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math>          Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math>          Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math>          No-Load Current: <math>\leq 15\text{ mA}</math>          Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated          Wire-Break Protection: Incorporated          Transient Protection: Per EN 60947-5-2          Shock: 30 g, 11 ms          Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes          Repeatability: <math>\leq 2\%</math> of Rated Operating Distance          Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

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# Capacitive Sensors | QF5.5

## Top Sensing Thin Qpak Housing with DC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC5-QF5.5-AN6X2/S250 2620120		5	5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	1	A11
BC10-QF5.5-AN6X2 2620121		10	10	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	1	A11
BC10-QF5.5-AN6X2/S250 2620119		10	10	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	1	A11
BC10-QF5.5-RN6X2 2620128	Normally Closed	10	10	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	3	A11
BC5-QF5.5-AP6X2/S250 2620116		5	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	2	A11
BC5-QF5.5-RP6X2/S250 2620127	Normally Closed	5	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	4	A11
BC10-QF5.5-AP6X2 2620117		10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	2	A11
BC10-QF5.5-AP6X2/S250 2620115		10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	2	A11
BC10-QF5.5-RP6X2 2620126	Normally Closed	10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	4	A11
BC10-QF5.5-RP6X2/S250 2620124	Normally Closed	10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	A	4	A11
BC10-QF5.5-AN6X2/S932 2620137		10	10	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	B	1	A11
BC10-QF5.5-RN6X2/S932 2620140	Normally Closed	10	10	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	B	3	A11
BC10-QF5.5-AP6X2/S932 2620109		10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	B	2	A11
BC10-QF5.5-RP6X2/S932 2620141	Normally Closed	10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PP	PP	GN	YE	2M/TPU	B	4	A11

**Notes:**

/S250: Without switch point adjustment potentiometer


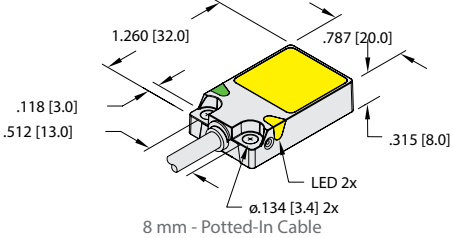
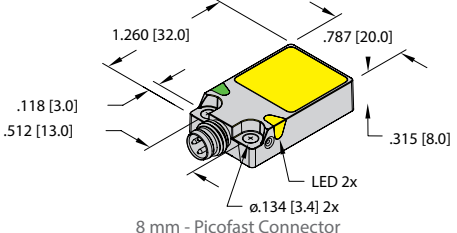
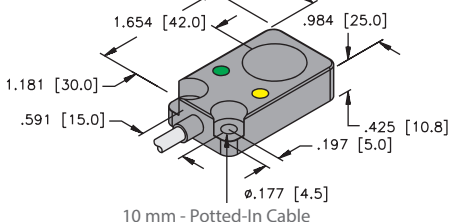
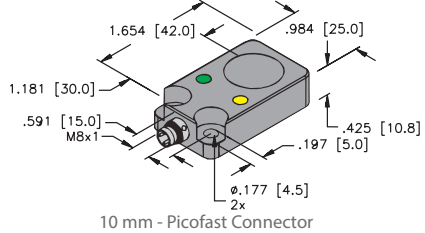
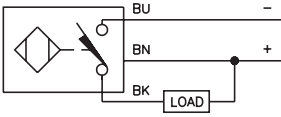
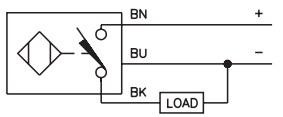
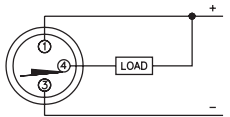
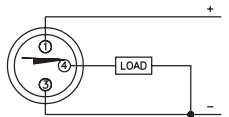
/S932: Adjustment potentiometer with protective cover, and non-metallic mounting bushing

We reserve the right to make technical alterations without prior notice.

Capacitive Sensors

# Capacitive Sensors | Q08 & Q10

## Top Sensing Qpak Housing with DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p> 
<p><b>B</b></p> 	<p><b>C</b></p> 
<p><b>D</b></p> 	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>2</b></p> 
<p><b>3</b></p>  <p>Mating Cordset: PKG 3Z-*, PKG 3M-*</p>	<p><b>4</b></p>  <p>Mating Cordset: PKG 3Z-*, PKG 3M-*</p>
A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | Q08 & Q10

## Top Sensing Qpak Housing with DC Outputs

Part Number/ ID Number	Embeddable Range (mm)		Output	Voltage	Switching Freq. (Hz)		Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Front Cap/Face	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
		Nonembeddable Range (mm)															
BC5-Q08-AN6X2/S250 26201	5	5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	Zamak	PP	GN	YE	2M/TPU	A	1	A11	
BC5-Q08-AP6X2/S250 26200	5	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	Zamak	PP	GN	YE	2M/TPU	A	2	A11	
BC5-Q08-AN6X2-V1131/S250 26211	5	5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	Zamak	PP	GN	YE	--	B	3	A11	
BC5-Q08-AP6X2-V1131/S250 26210	5	5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	Zamak	PP	GN	YE	--	B	4	A11	
BC8-Q10-AN6X2/S250 2621203	8	8	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	--	GN	YE	2M/PVC	C	1	A11	
BC8-Q10-AP6X2/S250 2621200	8	8	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	--	GN	YE	2M/PVC	C	2	A11	
BC8-Q10-AP6X2-V1131/S250 2621201	8	8	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	--	GN	YE	--	D	4	A11	


**Notes:**

/S250: Without switch point adjustment potentiometer

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | Q14

## Top Sensing Qpak Housing with DC Outputs

Housing Style	Dimension Drawings	
	<p>A</p> <p>14 mm - Potted-In Cable</p>	
<p>B</p> <p>14 mm - Picofast Connector</p>		
Wiring Diagrams/Mating Cordsets		
<p>1</p>	<p>2</p>	<p>3</p> <p>Mating Cordset: PKG 3M-*</p>
<p>4</p> <p>Mating Cordset: PKG 3M-*</p>	<p>5</p>	<p>6</p>
A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



# Capacitive Sensors | Q14


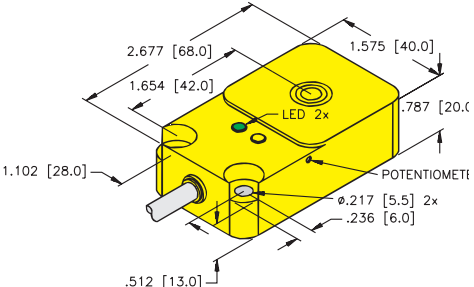
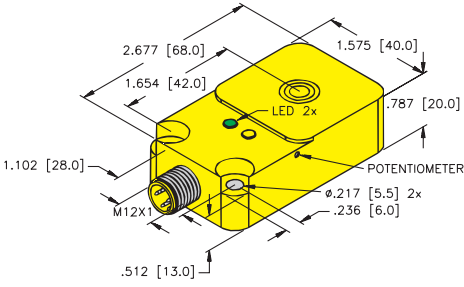
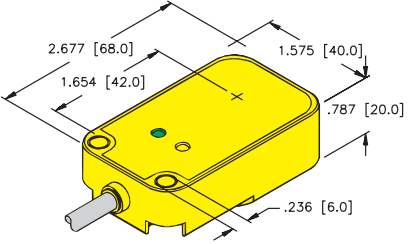
## Top Sensing Qpak Housing with DC Outputs

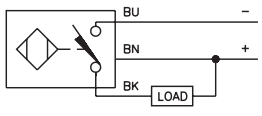
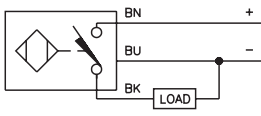
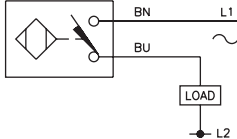
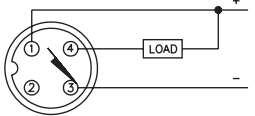
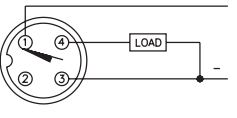
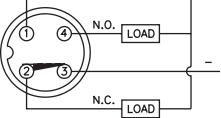
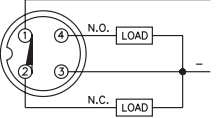
Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC10-Q14-AN4X2 2530010		10	10	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	2M/ PVC	A	1	A11
BC10-Q14-AP4X2 2530001		10	10	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	2M/ PVC	A	2	A11
BC10-Q14-VN4X2 2530030	Comp. Outputs	10	10	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	2M/ PVC	A	5	A11
BC10-Q14-VP4X2 2530020	Comp. Outputs	10	10	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	2M/ PVC	A	6	A11
BC10-Q14-AN4X2-V1131 2530011		10	10	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	--	B	3	A11
BC10-Q14-AP4X2-V1131 2530002		10	10	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	--	B	4	A11
BC10-Q14-AP4X2-V1131/S400 2530004	Rear LED	10	10	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	--	B	4	A11

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | Q20

## Top Sensing Qpak Housing with DC or AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>20 mm - Potted-In Cable</p>
<p><b>B</b></p>  <p>20 mm - Eurofast Connector</p>	<p><b>C</b></p>  <p>20 mm - Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets			
<p>1</p> 	<p>2</p> 	<p>3</p> 	<p>4</p>  <p>Mating Cordset: RK 4T-*</p>
<p>5</p>  <p>Mating Cordset: RK 4T-*</p>	<p>6</p>  <p>Mating Cordset: RK 4.4T-*</p>	<p>7</p>  <p>Mating Cordset: RK 4.4T-*</p>	

A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>
A12 2-wire AC Capacitive - (AZ, RZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: <math>\leq 500\text{ mA}</math></p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 7.0\text{ V}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 5.0\text{ mA}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | Q20


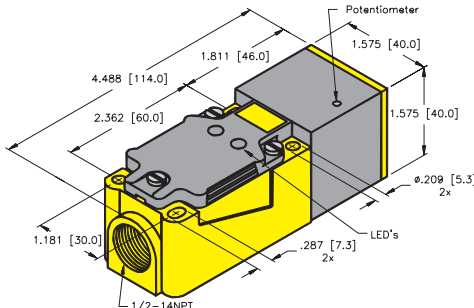
## Top Sensing Qpak Housing with DC or AC Outputs

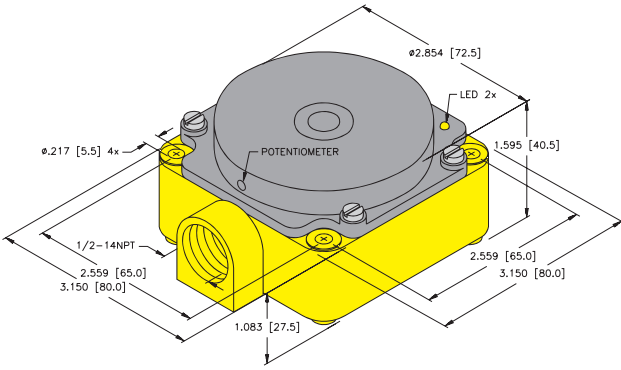
Part Number/ ID Number	Features	Embeddable Range (mm)		Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC20-Q20-AN4X2 2530110		20	30	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	2M/ PVC	A	1	A11
BC20-Q20-AN4X2/S400 2530104	Rear LED	20	30	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	2M/ PVC	C	1	A11
BC20-Q20-AP4X2 2530100		20	30	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	2M/ PVC	A	2	A11
BC20-Q20-AZ3X2 4352000		20	30	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PBT- GF30-V0	GN	YE	2M/ PVC	A	3	A12
BC20-Q20-AZ3X2/S400 2310005	Rear LED	20	30	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PBT- GF30-V0	GN	YE	2M/ PVC	C	3	A12
BC20-Q20-AN4X2-H1141 2530111		20	30	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	--	B	4	A11
BC20-Q20-AP4X2-H1141 2530101		20	30	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	--	B	5	A11
BC20-Q20-AP4X2-H1141/S400 2530103	Rear LED	20	30	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	--	B	5	A11
BC20-Q20-VN4X2-H1141 2530131	Comp. Outputs	20	30	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	--	B	6	A11
BC20-Q20-VP4X2-H1141 2530121	Comp. Outputs	20	30	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	GN	YE	--	B	7	A11

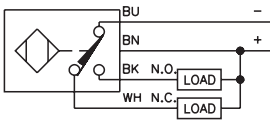
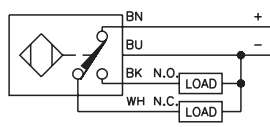
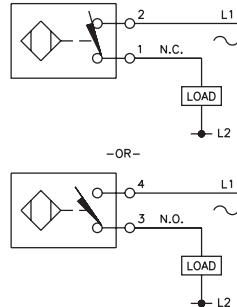
We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | CP40 & CP80

## Large Rectangular Housing with DC or AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>40 mm - Terminal Chamber</p>

<p><b>B</b></p>  <p>80 mm - Terminal Chamber</p>	
--	--

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 

A11	3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p>		<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>
A12	2-wire AC Capacitive - (AZ, FZ, RZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: <math>\leq 500\text{ mA}</math></p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 7.0\text{ V}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 5.0\text{ mA}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Capacitive Sensors | CP40 & CP80


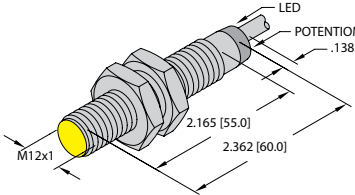
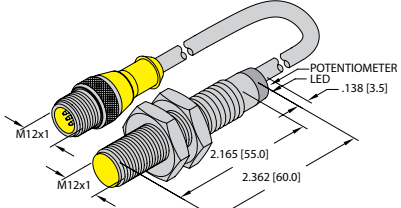
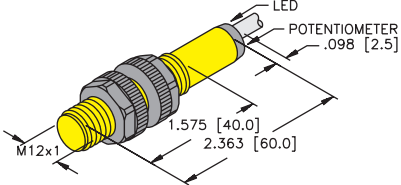
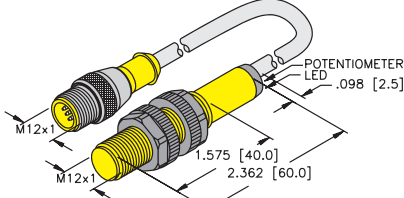
### Large Rectangular Housing with DC or AC Outputs

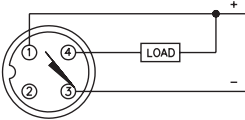
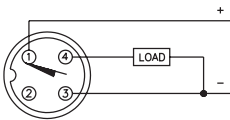
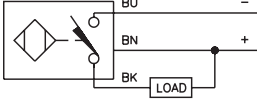
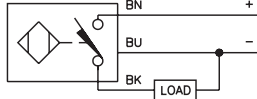
Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BC20-CP40-VN4X2/S10 25157	Comp. Outputs	20	30	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	A	1	A11
BC20-CP40-VP4X2/S10 25156	Comp. Outputs	20	30	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	A	2	A11
BC20-CP40-FZ3X2/S10 23115	Prog. Outputs	20	30	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PBT-GF30-V0	GN	YE	A	3	A12
NC50-CP80-VN4X2/S10 2580112	Comp. Outputs	NA	50	4-wire DC NPN	10-65 VDC	200	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	B	1	A11
NC50-CP80-VP4X2/S10 2580212	Comp. Outputs	NA	50	4-wire DC PNP	10-65 VDC	200	≤200	-25 to +70	IP67	PBT-GF30-V0	GN	YE	B	2	A11
NC50-CP80-FZ3X2/S10 2310610	Prog. Outputs	NA	50	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PBT-GF30-V0	GN	YE	B	3	A12

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 12 mm

## Threaded Barrel with DC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>12 mm - Potted-In Cable</p>	<p><b>B</b></p>  <p>12 mm - Eurofast Connector</p>
<p><b>C</b></p>  <p>12 mm - Potted-In Cable</p>	<p><b>D</b></p>  <p>12 mm - Eurofast Connector</p>	

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p> 	<p><b>4</b></p> 

A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.


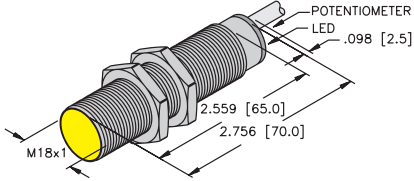
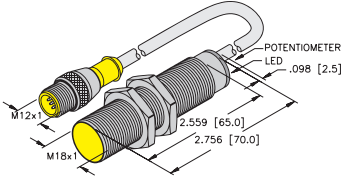
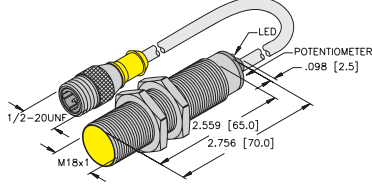
Capacitive Sensors | 12 mm  
Threaded Barrel with DC Outputs

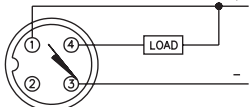
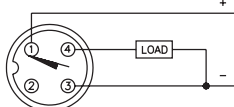
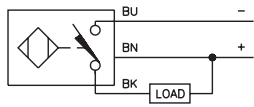
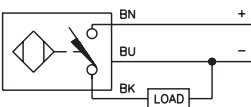
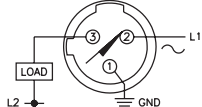
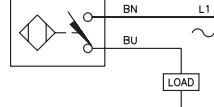
Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Front Cap/Face	End Cap Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC3-M12-AN6X 2601100		3	3	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	CPB	ABS	PA	N/A	YE	2M/ PVC	A	3	A11
BC3-M12-AP6X 2601000		3	3	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	CPB	ABS	PA	N/A	YE	2M/ PVC	A	4	A11
BC3-M12-AN6X-0.2-RS4T 2601190		3	3	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	CPB	ABS	PA	N/A	YE	0.2M/ PVC	B	1	A11
BC3-M12-AP6X-0.2-RS4T 2601091		3	3	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	CPB	ABS	PA	N/A	YE	0.2M/ PVC	B	2	A11
BC3-S12-AN6X 2601300		3	4.5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PA 12- GF30	PA	N/A	YE	2M/ PVC	C	3	A11
BC3-S12-AP6X 2601200		3	4.5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PA 12- GF30	PA	N/A	YE	2M/ PVC	C	4	A11
BC3-S12-AP6X/S100 2601201	High Temp. 100 °C	3	4.5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +100	IP67	PA 12- GF30	PA 12- GF30	PA	N/A	YE	2M/ PVC	C	4	A11
BC3-S12-AN6X-0.2-RS4T 2601390		3	4.5	3-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PA 12- GF30	PA	N/A	YE	0.2M/ PVC	D	1	A11
BC3-S12-AP6X-0.2-RS4T 2601291		3	4.5	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PA 12- GF30	PA	N/A	YE	0.2M/ PVC	D	2	A11

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 18 mm

## Metal Threaded Barrel with DC or AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Potted-In Cable</p>
<p><b>B</b></p>  <p>18 mm - Eurofast Connector</p>	<p><b>C</b></p>  <p>18 mm - Microfast Connector</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p> 
<p><b>4</b></p> 	<p><b>5</b></p>  <p>Mating Cordset: KB 3T-*</p>	<p><b>6</b></p> 

<b>A11</b> 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>
<b>A12</b> 2-wire AC Capacitive - (AZ, FZ, RZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: ≤500 mA</p> <p>Voltage Drop Across Conducting Sensor: ≤7.0 V</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥5.0 mA</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



# Capacitive Sensors | 18 mm


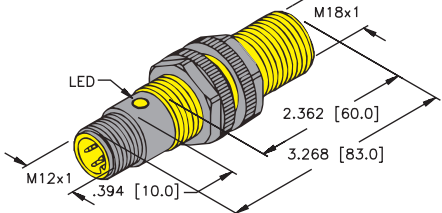
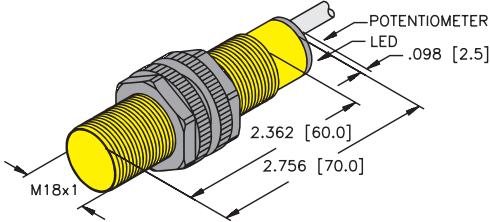
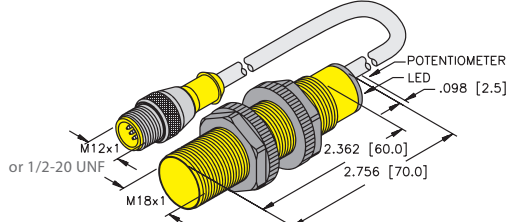
## Metal Threaded Barrel with DC or AC Outputs

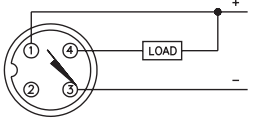
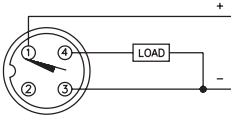
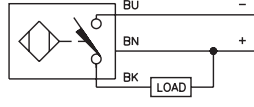
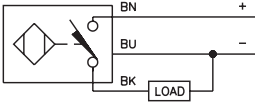
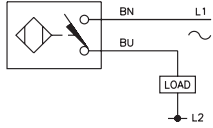
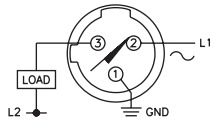
Part Number/ ID Number	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Front Cap/Face	End Cap Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC5-M18-AN4X 2504002	5	5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PBT- G30-V0	PUR	N/A	YE	2M/PVC	A	3	A11
BC5-M18-AP4X 2504001	5	5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PBT- G30-V0	PUR	N/A	YE	2M/PVC	A	4	A11
BC5-M18-AZ3X 2305000	5	5	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	CPB	PBT- G30-V0	PUR	N/A	YE	2M/PVC	A	6	A12
BC5-M18-AN4X-0.2-RS4T 2504091	5	5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PBT- G30-V0	PUR	N/A	YE	0.2M/ PVC	B	1	A11
BC5-M18-AP4X-0.2-RS4T 2504090	5	5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PBT- G30-V0	PUR	N/A	YE	0.2M/ PVC	B	2	A11
BC5-M18-AZ3X-0.2-SB3T 2305090	5	5	2-wire AC	20-250 AC	20	≤500	-25 to +70	IP67	CPB	PBT- G30-V0	PUR	N/A	YE	0.2M/ PVC	C	5	A12

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 18 mm

## Metal Threaded Barrel with DC or AC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>18 mm - Eurofast Connector</p>
<p>B</p>  <p>18 mm - Potted-In Cable</p>	<p>C</p>  <p>18 mm - Molded Connector</p>

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*</p>	<p>3</p> 
<p>4</p> 	<p>5</p> 	<p>6</p>  <p>Mating Cordset: KB 3T-*</p>

A11	3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>	
A12	2-wire AC Capacitive - (AZ, FZ, RZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: ≤500 mA</p> <p>Voltage Drop Across Conducting Sensor: ≤7.0 V</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥5.0 mA</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 18 mm

## Metal Threaded Barrel with DC or AC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)		Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC5-S18-AN4X-H1141/S250 2503108		5	7.5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	--	A	1	A11
BC5-S18-AP4X-H1141/S250 2503602		5	7.5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	--	A	2	A11
BC5-S18-AN4X 25031		5	7.5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PVC	B	3	A11
BCF5-S18-AN4X 2503012	Noise Immune	5	7.5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PVC	B	3	A11
BC5-S18-AP4X 25030		5	7.5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PVC	B	4	A11
BCF5-S18-AP4X 2503011	Noise Immune	5	7.5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PVC	B	4	A11
BCF5-S18-AP4X/S90 2503014	Noise Immune	5	7.5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PUR	B	4	A11
BC5-S18-AN4X-0.2-RS4T 2503192		5	7.5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	0.2M/PVC	C	1	A11
BCF5-S18-AN4X-0.2-RS4T 2503089	Noise Immune	5	7.5	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	0.2M/PVC	C	1	A11
BC5-S18-AP4X-0.2-RS4T 2503492		5	7.5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	0.2M/PVC	C	2	A11
BCF5-S18-AP4X-0.2-RS4T 2503099	Noise Immune	5	7.5	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	0.2M/PVC	C	2	A11
BC5-S18-AZ3X 2305500		5	7.5	2-wire AC	20-250 VAC	20	≤200	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PVC	B	5	A12
BC5-S18-AZ3X-0.2-SB3T 2305590		5	7.5	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PA12- GF30	PUR	N/A	YE	0.2M/PVC	C	6	A12


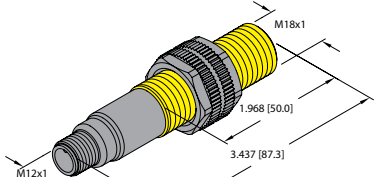
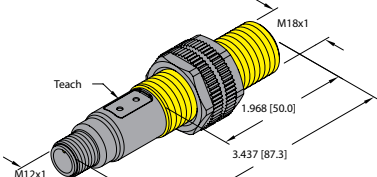
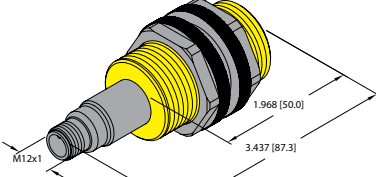
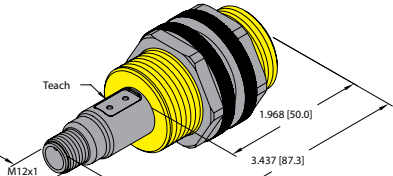
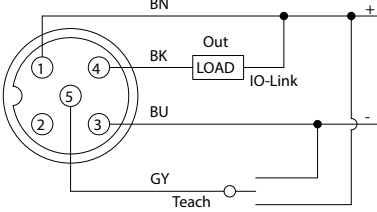
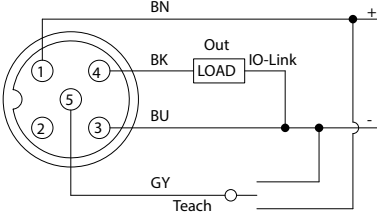
We reserve the right to make technical alterations without prior notice.

**Notes:**

/S250: Without switch point adjustment potentiometer

# Capacitive Sensors | 18 & 30 mm

## Plastic Threaded Barrels Configurable via IO-Link/Teach

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Teach-by-wire or IO-Link</p>
<p><b>B</b></p>  <p>18 mm - Teach button or IO-Link</p>	<p><b>C</b></p>  <p>30 mm - Teach-by-wire or IO-Link</p>
<p><b>D</b></p>  <p>30 mm - Teach button or IO-Link</p>	
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
A18	5-wire DC Teach Capacitive - (UP, UN)
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤2.4 V</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p>	<p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p> <p>IO-Link: V1.1</p>

We reserve the right to make technical alterations without prior notice.

## Capacitive Sensors | 18 & 30 mm


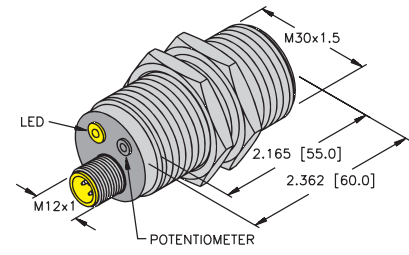
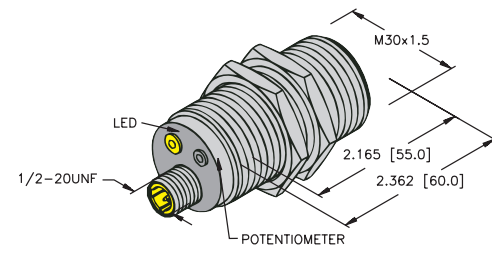
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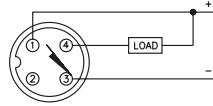
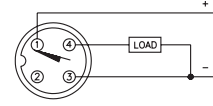
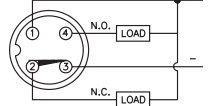
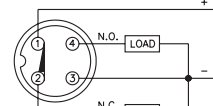
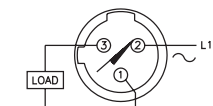
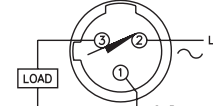
Part Number/ ID Number	Features	Embeddable Range (mm)		Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BCT5-S18-UP6X2-H1151 2101300	Teach-by-wire or IO-Link	5	7.5	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	A	1	A18
BCT5-S18-UN6X2-H1151 2101400	Teach-by-wire or IO-Link	5	7.5	4-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	A	2	A18
BCT5-S18-UP6X2T-H1151 2101100	Teach buttons or IO-Link	5	7.5	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	B	1	A18
BCT5-S18-UN6X2T-H1151 2101200	Teach buttons or IO-Link	5	7.5	4-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	B	2	A18
BCT10-S30-UP6X2-H1151 2101700	Teach-by-wire or IO-Link	10	15	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	C	1	A18
BCT10-S30-UN6X2-H1151 2101800	Teach-by-wire or IO-Link	10	15	4-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	C	2	A18
BCT10-S30-UP6X2T-H1151 2101500	Teach buttons or IO-Link	10	15	4-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	D	1	A18
BCT10-S30-UN6X2T-H1151 2101600	Teach buttons or IO-Link	10	15	4-wire DC NPN	10-30 VDC	100	≤200	-25 to +70	IP67	PA12-GF30, PEI	PA	GN	YE	D	2	A18

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 30 mm

## Metal Threaded Barrel with DC or AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Eurofast Connector</p>
<p><b>B</b></p>  <p>30 mm - Microfast Connector</p>	

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.4T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>5</b></p>  <p>Mating Cordset: KB 3T-*</p>	<p><b>6</b></p>  <p>Mating Cordset: KB 3T-*</p>

A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)		
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>	
A12 2-wire AC Capacitive - (AZ, RZ)		
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: <math>\leq 500\text{ mA}</math></p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 7.0\text{ V}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 5.0\text{ mA}</math></p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 30 mm

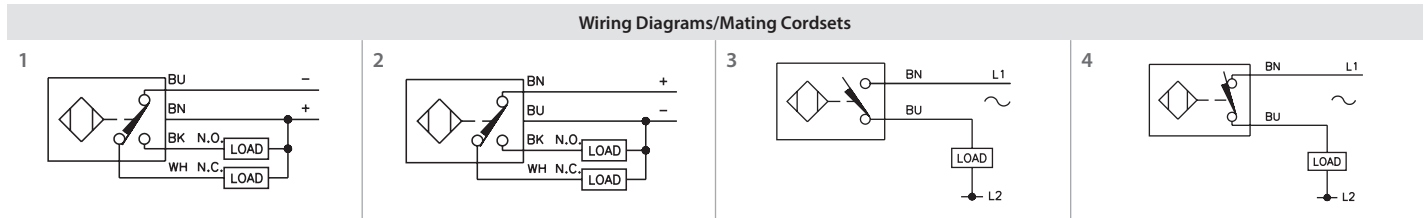
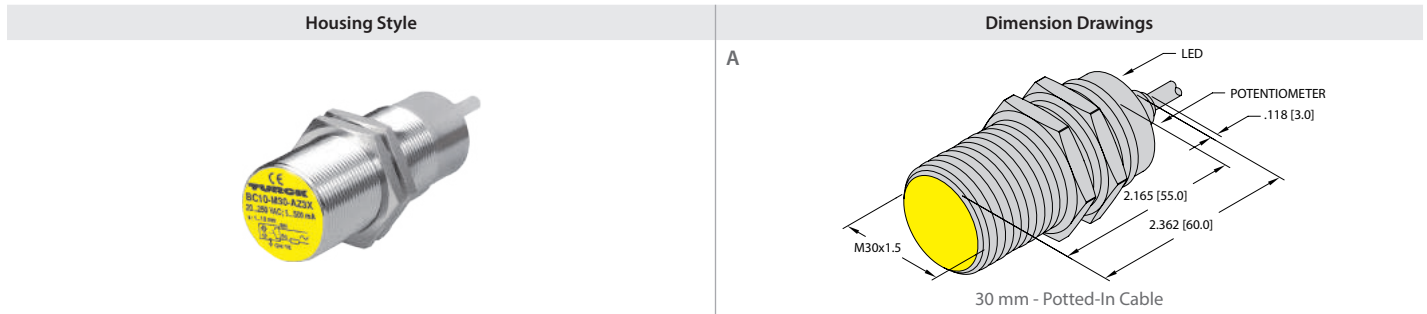
## Metal Threaded Barrel with DC or AC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Front Cap/Face	End Cap Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BC10-M30K-AN4X-H1141 2503030		10	10	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12- GF30	PA 66-GF25-V0	N/A	YE	A	1	A11
BC10-M30K-AP4X-H1141 2503026		10	10	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12- GF30	PA 66-GF25-V0	N/A	YE	A	2	A11
BC10-M30K-VN4X-H1141 2503033	Comp. Outputs	10	10	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12- GF30	PA 66-GF25-V0	N/A	YE	A	3	A11
BC10-M30K-VP4X-H1141 2503035	Comp. Outputs	10	10	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12- GF30	PA 66-GF25-V0	N/A	YE	A	4	A11
BC10-M30K-AZ3X-B3131 2503034		10	10	2-wire AC N.O.	20-250 AC	20	≤500	-25 to +70	IP67	CPB	PA 12- GF30	PA 66-GF25-V0	N/A	YE	B	5	A12
BC10-M30K-RZ3X-B3131 2503023		10	10	2-wire AC N.C.	20-250 AC	20	≤500	-25 to +70	IP67	CPB	PA 12- GF30	PA 66-GF25-V0	N/A	YE	B	6	A12

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 30 mm

## Metal Threaded Barrel with DC or AC Outputs



A11	3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p>		<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>
A12	2-wire AC Capacitive - (AZ, RZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: <math>\leq 500\text{ mA}</math></p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 7.0\text{ V}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 5.0\text{ mA}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.



## Capacitive Sensors | 30 mm


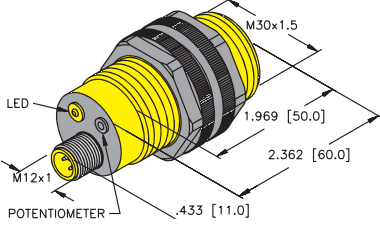
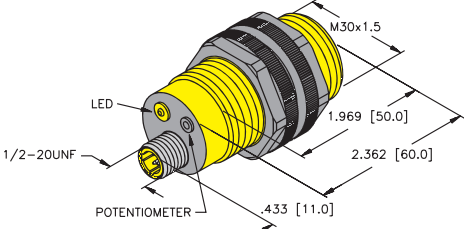
### Metal Threaded Barrel with DC or AC Outputs

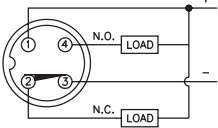
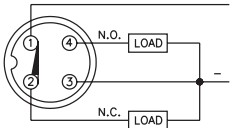
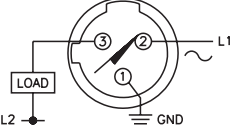
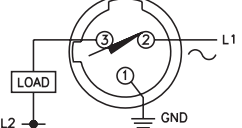
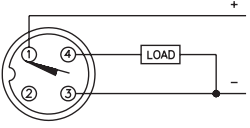
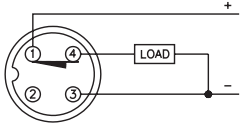
Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	Front Cap/Face	End Cap Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC10-M30K-VN4X 2503024	Comp. Outputs	10	10	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12-GF30	PA 66-GF25-V0	N/A	YE	2M/PVC	A	1	A11
BC10-M30K-VP4X 2503022	Comp. Outputs	10	10	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	CPB	PA 12-GF30	PA 66-GF25-V0	N/A	YE	2M/PVC	A	2	A11
BC10-M30K-AZ3X 2503031		10	10	2-wire AC N.O.	20-250 VAC	20	≤500	-25 to +70	IP67	CPB	PA 12-GF30	PA 66-GF25-V0	N/A	YE	2M/PVC	A	3	A12
BC10-M30K-RZ3X 2503025		10	10	2-wire AC N.C.	20-250 VAC	20	≤500	-25 to +70	IP67	CPB	PA 12-GF30	PA 66-GF25-V0	N/A	YE	2M/PVC	A	4	A12

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 30 mm

## Plastic Threaded Barrels with Connectors and AC/DC Outputs

Housing Style	Dimension Drawings
	<p>A</p>  <p>30 mm - Eurofast Connector</p>
<p>B</p>  <p>30 mm - Microfast Connector</p>	

Wiring Diagrams/Mating Cordsets		
<p>1</p>  <p>Mating Cordset: RK 4.4T-*</p>	<p>2</p>  <p>Mating Cordset: RK 4.4T-*</p>	<p>3</p>  <p>Mating Cordset: KB 3T-*</p>
<p>4</p>  <p>Mating Cordset: KB 3T-*</p>	<p>5</p>  <p>Mating Cordset: RK 4T-*</p>	<p>6</p>  <p>Mating Cordset: RK 4T-*</p>

A11	3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p>		<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>
A12	2-wire AC Capacitive - (AZ, RZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: <math>\leq 500\text{ mA}</math></p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 7.0\text{ V}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math></p> <p>Minimum Load Current: <math>\geq 5.0\text{ mA}</math></p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Capacitive Sensors | 30 mm

### Plastic Threaded Barrels with Connectors and AC/DC Outputs


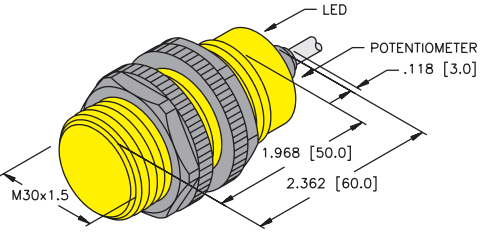
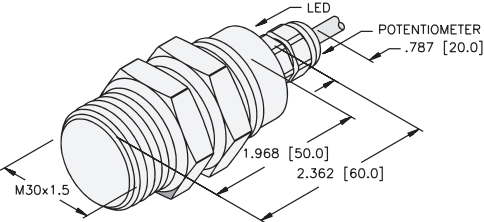
Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BCC10-S30-AP4X-H1141 2503038	Low Dielectric Targets	10	10	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	5	A11
BCC10-S30-RP4X-H1143 1542562	Low Dielectric Targets	10	10	3-wire DC PNP N.C.	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	6	A11
BC10-S30-VN4X-H1141 2506010	Comp. Outputs	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	1	A11
BCF10-S30-VN4X-H1141 2506016	Noise Immune	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	1	A11
BC10-S30-VP4X-H1141 2506100	Comp. Outputs	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	2	A11
BCC10-S30-VP4X-H1141 2503043	Low Dielectric Targets	10	10	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	2	A11
BCF10-S30-VP4X-H1141 2506117	Noise Immune	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	A	2	A11
BC10-S30-AZ3X-B3131 2310710		10	15	2-wire AC N.O.	20-250 VAC	20	≤500	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	B	3	A12
BCF10-S30-AZ3X-B3131 2506012	Noise Immune	10	15	2-wire AC N.O.	20-250 VAC	20	≤500	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	B	3	A12
BC10-S30-RZ3X-B3131 2310810		10	15	2-wire AC N.C.	20-250 VAC	20	≤500	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	B	4	A12
BCF10-S30-RZ3X-B3131 2506014	Noise Immune	10	15	2-wire AC N.C.	20-250 VAC	20	≤500	-25 to +70	IP67	PA12- GF30	PA 66-GF25-V0	N/A	YE	B	4	A12

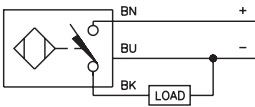
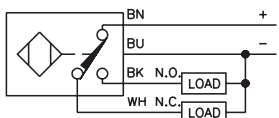
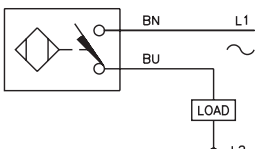
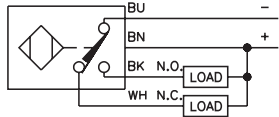
We reserve the right to make technical alterations without prior notice.

Capacitive Sensors

# Capacitive Sensors | 30 mm

## Plastic Threaded Barrel with DC or AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Potted-In Cable</p>
<p><b>B</b></p>  <p>30 mm - Potted-In Cable</p>	

Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p> 	<p><b>4</b></p> 
<p><b>4</b></p> 	<p><b>3</b></p> 

A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: <math>\leq 10\%</math>            Differential Travel (Hysteresis): 2-20% (5% typical)            Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math>            Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math>            Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math>            No-Load Current: <math>\leq 15\text{ mA}</math>            Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated            Wire-Break Protection: Incorporated            Transient Protection: Per EN 60947-5-2            Shock: 30 g, 11 ms            Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes            Repeatability: <math>\leq 2\%</math> of Rated Operating Distance            Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>
A12 2-wire AC Capacitive - (AZ, RZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math>            Differential Travel (Hysteresis): 2-20% (5% typical)            Continuous Load Current: <math>\leq 500\text{ mA}</math>            Voltage Drop Across Conducting Sensor: <math>\leq 7.0\text{ V}</math>            Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math>            Minimum Load Current: <math>\geq 5.0\text{ mA}</math></p>	<p>Power-On Effect: Per IEC 947-5-2            Transient Protection: Per EN 60947-5-2            Shock: 30 g, 11 ms            Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes            Repeatability: <math>\leq 2\%</math> of Rated Operating Distance            Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

## Capacitive Sensors | 30 mm


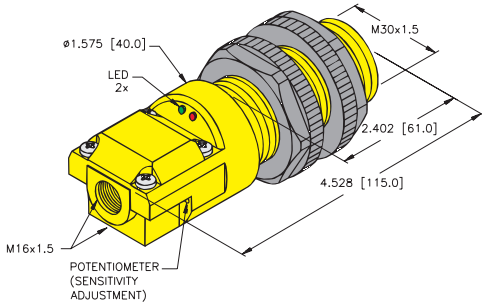
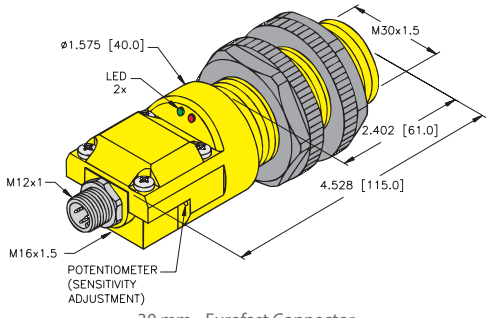
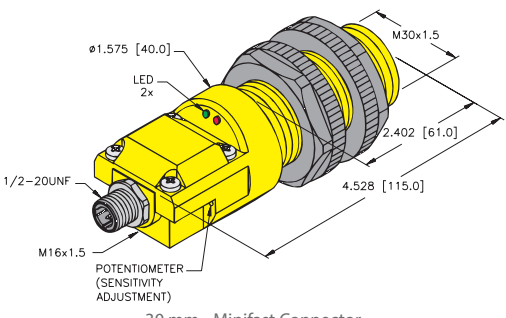
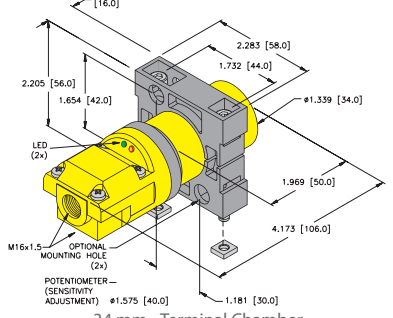
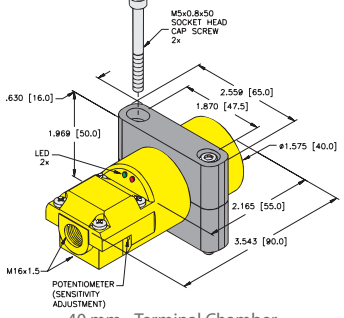
### Plastic Threaded Barrel with DC or AC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BCC10-S30-AP4X 2503037	Low Dielectric Targets	10	10	3-wire DC PNP	10-30 VDC	100	≤200	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	1	A11
BC10-S30-VN4X 2506000	Comp. Outputs	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	4	A11
BCF10-S30-VN4X 2506011	Noise Immune	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	4	A11
BC10-S30-VP4X 2506110	Comp. Outputs	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	2	A11
BCF10-S30-VP4X 2506111	Noise Immune	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	2	A11
BC10-S30-AZ3X 2310700		10	15	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	3	A12
BCF10-S30-AZ3X 2506015	Noise Immune	10	15	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PA 12-GF30	PA 66-GF25-V0	N/A	YE	A	3	A12
BC10-PT30-VN4X2 2507020	Chemical Resistant	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PVDF	PVDF	GN	YE	B	4	A11
BC10-PT30-VP4X2 2507010	Chemical Resistant	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PVDF	PVDF	GN	YE	B	2	A11

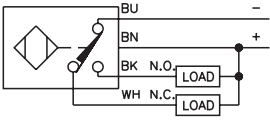
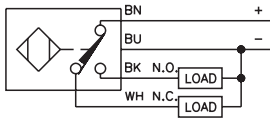
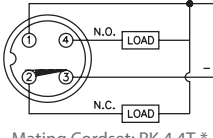
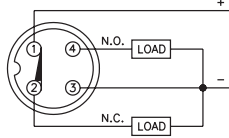
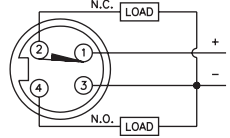
We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 30, 34, & 40 mm

## Large Diameter Plastic Barrels with Terminal Chamber and 4-Wire DC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Terminal Chamber</p>
<p><b>B</b></p>  <p>30 mm - Eurofast Connector</p>	<p><b>C</b></p>  <p>30 mm - Minifast Connector</p>
<p><b>D</b></p>  <p>34 mm - Terminal Chamber</p>	<p><b>E</b></p>  <p>40 mm - Terminal Chamber</p>

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p>  <p>Mating Cordset: RK 4.4T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>5</b></p>  <p>Mating Cordset: RKM 40-*M</p>	

A11 3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>	

# Capacitive Sensors | 30, 34, & 40 mm


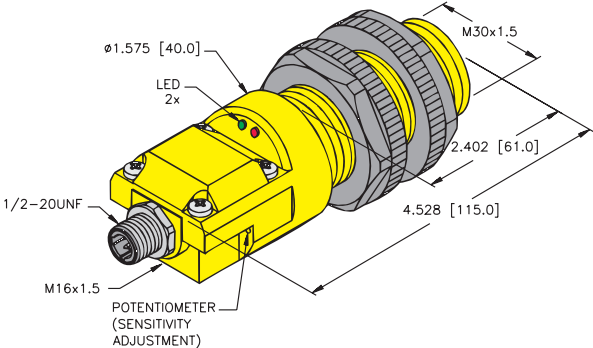
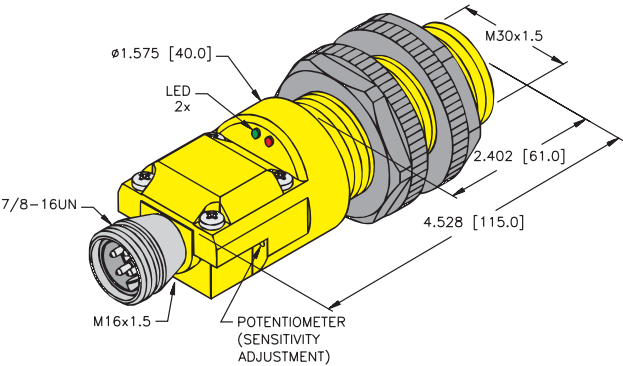
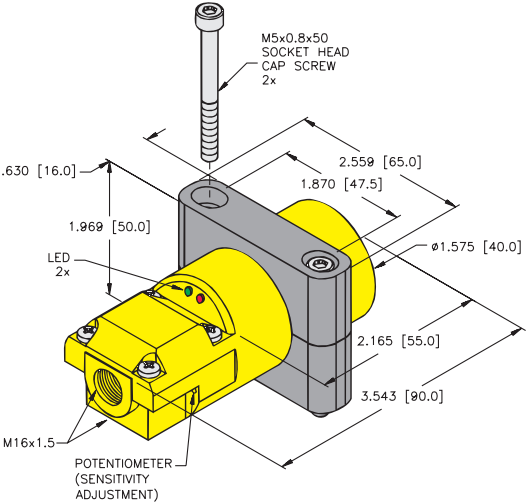
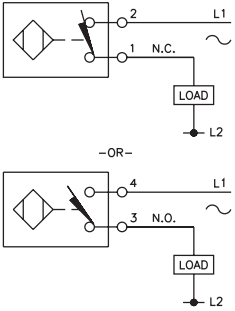
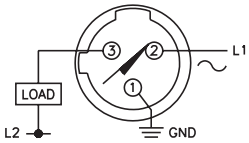
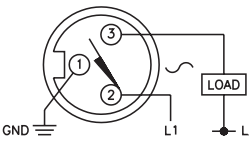
## Large Diameter Plastic Barrels with Terminal Chamber and 4-Wire DC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BC10-P30SR-VN4X2 25051	Comp. Outputs	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	1	A11
BC10-P30SR-VN4X2-H1141 2505192	Comp. Outputs	10	15	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	B	3	A11
BC10-P30SR-VP4X2 25050	Comp. Outputs	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	A	2	A11
BC10-P30SR-VP4X2-H1141 2505094	Comp. Outputs	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	B	4	A11
BC10-P30SR-VP4X2-B1141 2505092	Comp. Outputs	10	15	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	C	5	A11
BC15-K34SR-VN4X2 2502128	Comp. Outputs	15	23	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT-GF30-V0	ABS	GN	YE	D	1	A11
BC20-K40SR-VN4X2 25101	Comp. Outputs	20	30	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	E	1	A11
BC20-K40SR-VP4X2 25100	Comp. Outputs	20	30	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	ABS	ABS	GN	YE	E	2	A11

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | 30 & 40 mm

## Large Diameter Plastic Barrels with Terminal Chamber and AC Outputs

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>30 mm - Microfast Connector</p>	
<p><b>B</b></p>  <p>30 mm - Minifast Connector</p>	<p><b>C</b></p>  <p>40 mm - Terminal Chamber</p>	
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p> 	<p><b>2</b></p>  <p>Mating Cordset: KB 3T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 30-*M; RKM 30-*M</p>
A12	2-wire AC Capacitive - (AZ, RZ)	
<p>Line Frequency: <math>\geq 50 \dots \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: <math>\leq 500</math> mA</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 7.0</math> V</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA</p> <p>Minimum Load Current: <math>\geq 5.0</math> mA</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p> <p>Temperature Drift: <math>&lt; \pm 20\%</math> of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.



## Capacitive Sensors | 30 & 40 mm


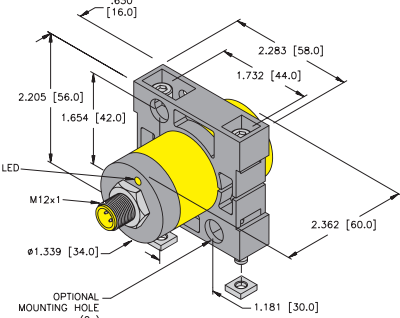
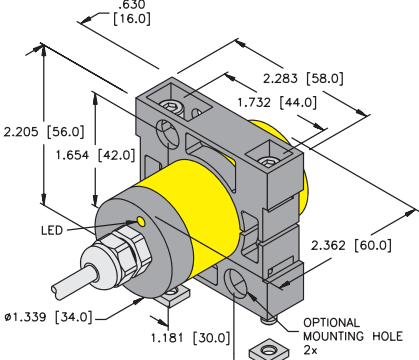
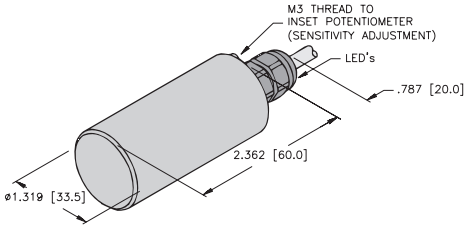
### Large Diameter Plastic Barrels with Terminal Chamber and AC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Dimension Drawings	Wiring Diagrams	Spec List
BC10-P30SR-FZ3X2-B3131 2310491	Comp. Outputs	10	15	2-wire AC	20-250 AC	200	≤500	-25 to +70	IP67	ABS	ABS	GN	YE	A	2	A12
BC10-P30SR-FZ3X2-B1131 2310490	Comp. Outputs	10	15	2-wire AC	20-250 AC	20	≤500	-25 to +70	IP67	ABS	ABS	GN	YE	B	3	A12
BC10-P30SR-FZ3X2-B2131 2310493	Comp. Outputs	10	15	2-wire AC	20-250 AC	20	≤500	-25 to +70	IP67	ABS	ABS	GN	YE	B	3	A12
BC20-K40SR-FZ3X2 23103	Prog. Outputs	20	30	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	ABS	ABS	GN	YE	C	1	A12

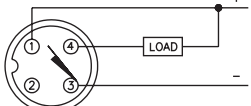
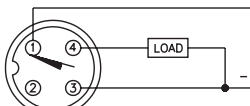
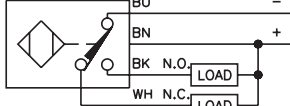
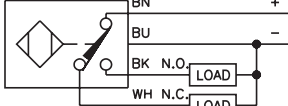
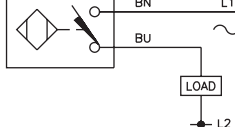
We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | K34

## Smooth Plastic Barrel with DC or AC Outputs

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>34 mm - Eurofast Connector</p>
<p><b>B</b></p>  <p>34 mm - Potted-In Cable</p>	<p><b>C</b></p>  <p>34 mm - Potted-In Cable</p>

We reserve the right to make technical alterations without prior notice.

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p> 
<p><b>4</b></p> 	<p><b>5</b></p> 	

A11	3 and 4-wire DC Capacitive - (AP, RP, AN, RN, VN, VP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>	
A12	2-wire AC Capacitive - (AZ, RZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 2-20% (5% typical)</p> <p>Continuous Load Current: ≤500 mA</p> <p>Voltage Drop Across Conducting Sensor: ≤7.0 V</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥5.0 mA</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p> <p>Temperature Drift: &lt;±20% of Rated Operating Distance</p>	

# Capacitive Sensors | K34

## Smooth Plastic Barrel with DC or AC Outputs

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC15-K34-AN4X-H1141 2502125		15	23	3-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	ABS	N/A	YE	--	A	1	A11
BC15-K34-AP4X-H1141 2502126		15	23	3-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	ABS	N/A	YE	--	A	2	A11
BC15-K34-VN4X 2502127	Comp. Outputs	15	23	4-wire DC NPN	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	ABS	N/A	YE	2M/PVC	B	3	A11
BC15-K34-VP4X 2502124	Comp. Outputs	15	23	4-wire DC PNP	10-65 VDC	100	≤200	-25 to +70	IP67	PBT- GF30-V0	ABS	N/A	YE	2M/PVC	B	4	A11
BC15-K34-AZ3X 2310008		15	23	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PBT- GF30-V0	ABS	N/A	YE	2M/PVC	B	5	A12
BCF15-K34-AZ3X 2502136	Noise Immune	15	15	2-wire AC	20-250 VAC	20	≤500	-25 to +70	IP67	PBT- GF30-V0	ABS	N/A	YE	2M/PVC	B	5	A12
NC20-KT34-VP4X2 2550300	Chemical Resistant Comp. Output	N/A	20	4-wire DC PNP	10-65 VDC	200	≤200	-25 to +70	IP67	PVDF	PVDF	GN	YE	2M/ PVDF	C	4	A11

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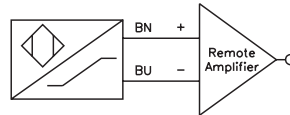
# Capacitive Sensors | Namur

Intrinsically Safe 

Housing Style	Dimension Drawings
<p><b>A</b></p> <p>5.5 mm - Potted-In Cable</p>	<p><b>B</b></p> <p>18 mm - Potted-In Cable</p>
<p><b>C</b></p> <p>30 mm - Potted-In Cable</p>	<p><b>D</b></p> <p>30 mm - Potted-In Cable</p>

## Wiring Diagrams/Mating Cordsets

1



A19	2-wire DC NAMUR Capacitive- (Y0 and Y1)	
<p>Differential Travel (Hysteresis): 1-20%</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Non-activated Current Consumption: <math>\leq 1.2</math> mA</p> <p>Activated Current Consumption: <math>\geq 2.1</math> mA</p> <p>Recommended Switching Point for Remote Amplifier: <math>&gt; 1.2</math> to <math>&lt; 2.1</math> mA, typ. 1.55 mA ON/1.75 mA OFF</p>		<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

### Amplifier Note:

Inductive sensors with Namur outputs are typically used in hazardous locations and the approval agencies require the use of an amplifier to regulate the signals in the hazardous area. Due to the wide variety of approvals, output options, and amplifier designs, it is not possible to incorporate all of the choices in this catalog. For the most up to date information, please either search for these products under our interface technology product category ([www.turck.us](http://www.turck.us)) or contact us by phone.

We reserve the right to make technical alterations without prior notice.

# Capacitive Sensors | Namur

Intrinsically Safe

Part Number/ ID Number	Features	Embeddable Range (mm)	Nonembeddable Range (mm)	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing Material	End Cap Material	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BC5-QF5.5-Y1X/S250 2030000		5	5	2-wire DC NAMUR	5-30 VDC	100	Remote	-25 to +70	IP67	PP	--	N/A	YE	2M/TPU	A	1	A19
BC5-S18-Y1X 20060		5	7.5	2-wire DC NAMUR	5-30 VDC	100	Remote	-25 to +70	IP67	PA 12- GF30	PUR	N/A	YE	2M/PVC	B	1	A19
BC10-S30-Y1X 20100		10	15	2-wire DC NAMUR	5-30 VDC	100	Remote	-25 to +70	IP67	PA 12- GF30	PA 66-GF25-V0	N/A	YE	2M/PVC	C	1	A19
BC10-PT30-Y0X 2020000	Chemical Resistant	10	15	2-wire DC NAMUR	5-30 VDC	100	Remote	-25 to +70	IP67	PVDF	PVDF	N/A	YE	2M/ PVDF	D	1	A19

**Notes:**

/S250: Without switch point adjustment potentiometer

We reserve the right to make technical alterations without prior notice.




# Notes






Notes



# Ultrasonics Sensor Selection Guide

Threaded Metal Barrel			
			
Housing	18 mm	18 mm	30 mm
Rated Operating Distance	40 - 130 cm	40 - 130 cm	40 - 600 cm
Pages	F3 - 6	F7 - 10	F11

	Hazardous ATEX and IECEx Approval	Rectangular	
			
Housing	18 and 30 mm	40 mm	40 mm
Rated Operating Distance	40 - 600 cm	200 cm	200 cm
Pages	F13	F15	F15

We reserve the right to make technical alterations without prior notice.



## Ultrasonic Sensors

The M18 and M30 ultrasonic sensors feature smooth transducer faces, short blind zones, adjustable sensing fields, and robust chrome plated brass barrels, along with multiple options for outputs and configurations that enable users to select the best design for their application.

Output configurations range from a single output with an adjustable set point to versions with configurable outputs either as dual set point, analog, window, retroreflective, or IO-Link. Sensors can be taught via wire, integral buttons, or IO-Link.

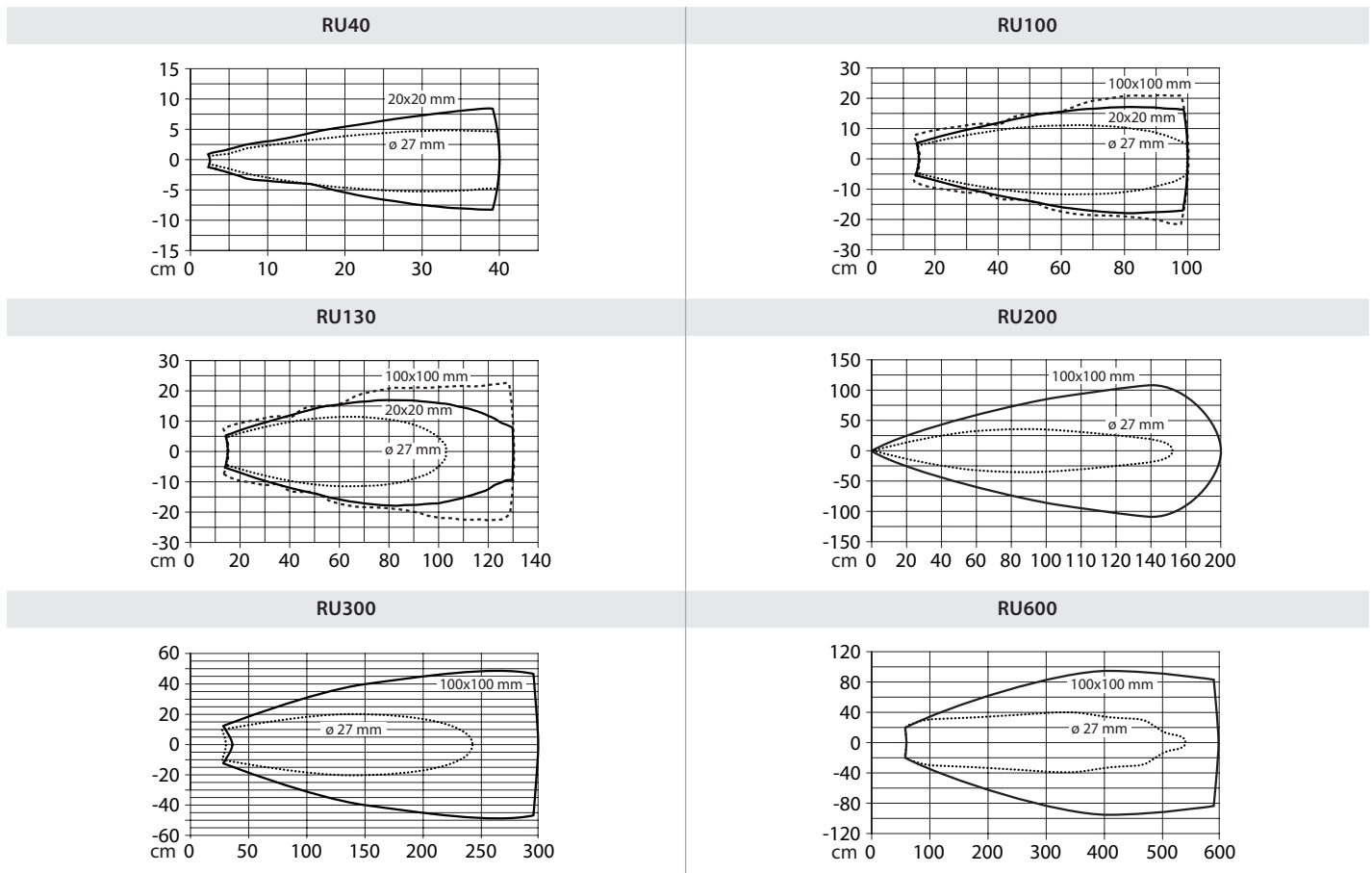
Certain M18 and M30 versions are available with ATEX and IECEx approvals for environments that have dust or gases which could be ignited and cause a fire or explosion.

The CK40 and CP40 rectangular ultrasonic sensor family uses separate transducers for the transmitter and receiver, giving these sensors a 60° sonic cone angle for detecting targets, which is much larger than what is possible with the M18 or M30 barrels.

### Performance Curves


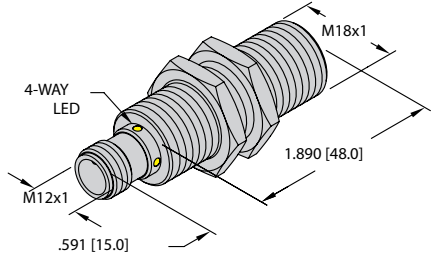
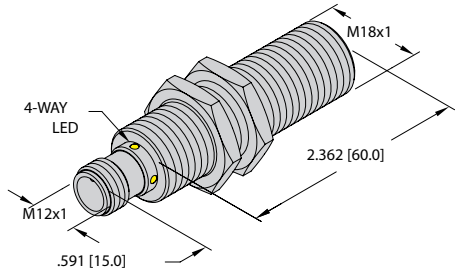
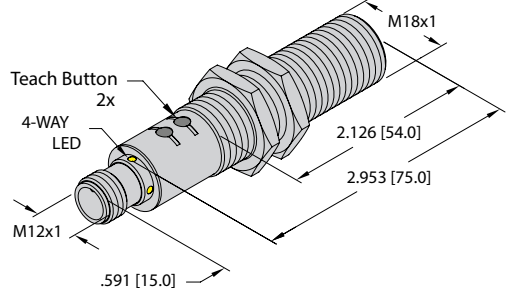
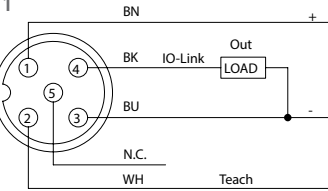
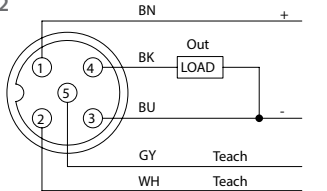
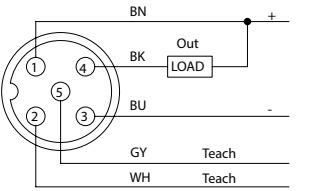
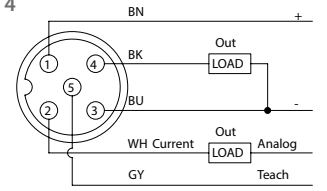
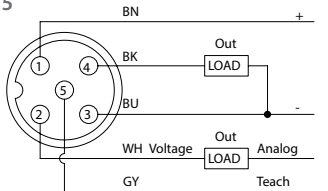
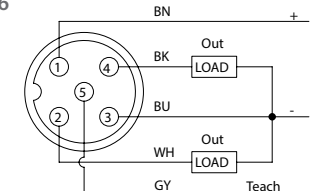
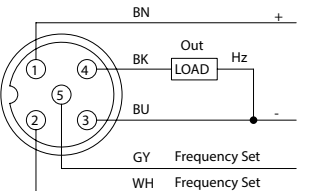
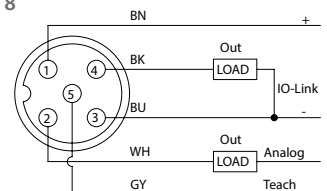
The diagrams show the detection ranges of the individual ultrasonic sensors, covering ranges of 40 to 600 cm. Different targets are used in sizes 20 x 20 mm, and 100 x 100 mm according to the EN standard 60947-5-2, as well as a round rod with a diameter of 27 mm in order to compare the detection ranges of different ultrasonic sensors. When using other targets than the standard ones, the detection ranges may vary due to different reflection properties and geometries.

We reserve the right to make technical alterations without prior notice.



# Ultrasonics Sensors | 18 mm

## Front Sensing Transducer

Housing Style	Dimension Drawings		
	<p><b>A</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>		
<p><b>B</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>	<p><b>C</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>		
Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
<p><b>5</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>6</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>7</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>8</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
A30 Ultrasonic Barrels			
<p>Operating Voltage: 15-30 VDC</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Continuous Switching Current: ≤150 mA</p> <p>No-Load Current: ≤50 mA</p> <p>Residual Current: ≤0.1 mA</p> <p>Load Resistance: ≤1000 Ω</p> <p>Readiness Delay: ≤300 ms</p> <p>Repeatability: 0.15% of full scale</p> <p>Switching Output: Programmable NO or NC</p>	<p>Frequency Output (where applicable): 240-1600 Hz or 0-400 Hz Selectable</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Yes</p> <p>Operating Temp: -25 to +70 °C</p> <p>Temperature Drift: 1.5% of full scale</p> <p>Internal Protection Rating: IP67</p> <p>Housing Material: CPB</p> <p>Transducer Material: PET/PU/Epoxy</p> <p>LED: Yellow/Green</p>		

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 18 mm

## Front Sensing Transducer

Part Number/ ID Number	Rated Operating Distance (cm)	1 X PNP Output	1 X NPN Output	2 X PNP Output	2X PNP/NPN or Programmable 4-20 mA/0-10v Analog & 1 X PNP/NPN output	Analog 0-10v	Analog 4-20mA	Frequency Output	Retroreflective Programmable	Retroreflective Only	Window Mode Programmable	IO-Link V1.1	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU40U-M18M-AP8X2-H1151 1610094	40	●							●	●	●		2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	1	A30
RU40U-M18M-UP8X2-H1151 1610008	40	●											2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	2	A30
RU40U-M18M-UN8X2-H1151 1610080	40		●										2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	3	A30
RU40U-M18E-LI8X2-H1151 1610069	40	● 1					●						2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	B	4	A30
RU40U-M18E-LU8X2-H1151 1610109	40	● 1				●							2.5	9°	0.5	5	≤ 4 m/s	≤ 1.5 m/s	10.4	B	5	A30
RU40U-M18E-2UP8X2-H1151 1610012	40			●					●	●			2.5	9°	0.5	5	≤ 4 m/s	≤ 1.5 m/s	10.4	B	6	A30
RU40U-M18E-2UP8X2T-H1151 1610016	40			●					●	●			2.5	9°	0.5	5	≤ 4 m/s	≤ 1.5 m/s	10.4	C	6	A30
RU40U-M18M-LFX-H1151 1610021	40							●					2.5	15°	0.5	-	≤ 3 m/s	≤ 1.3 m/s	-	A	7	A30
RU40L-M18M-UP8X2-H1151 1610076	40	●								●			2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	5.2	A	2	A30
RU40L-M18M-UN8X2-H1151 1610084	40		●							●			2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	5.2	A	3	A30
RU40U-M18E-LIU2PN8X2T-H1151 1610024	40				●				●	●	● <sup>2</sup>		2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	C	8	A30


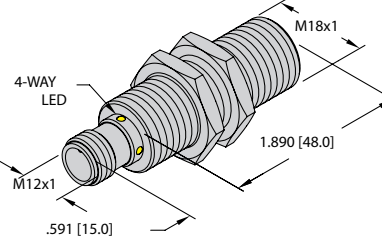
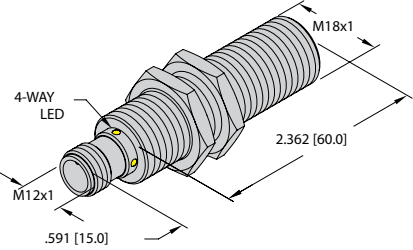
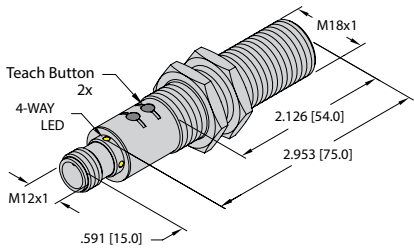
<sup>1</sup> Switching output is not adjustable

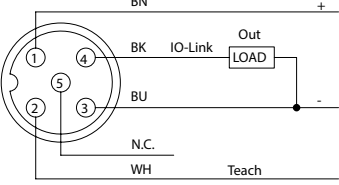
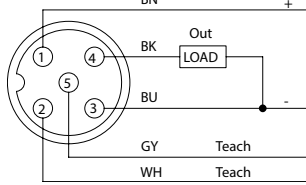
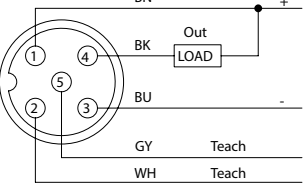
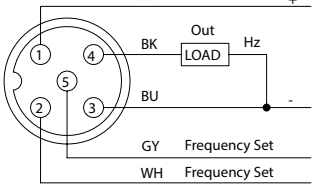
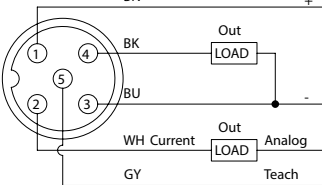
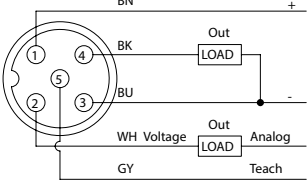
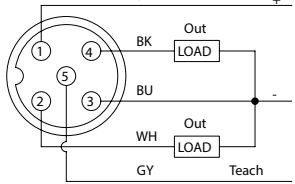
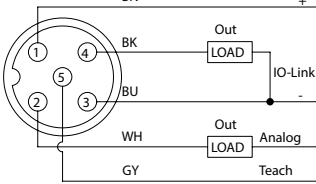
<sup>2</sup> Multiplexing and synchronization modes supported

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 18 mm

## Front Sensing Transducer

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>
<p><b>B</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>	<p><b>C</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
<p><b>4</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>5</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>6</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
<p><b>7</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>8</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	

A30 Ultrasonic Barrels	
<p>Operating Voltage: 15-30 VDC</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Continuous Switching Current: ≤150 mA</p> <p>No-Load Current: ≤50 mA</p> <p>Residual Current: ≤0.1 mA</p> <p>Load Resistance: ≤1000 Ω</p> <p>Readiness Delay: ≤300 ms</p> <p>Repeatability: 0.15% of full scale</p> <p>Switching Output: Programmable NO or NC</p>	<p>Frequency Output (where applicable): 240-1600 Hz or 0-400 Hz Selectable</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Yes</p> <p>Operating Temp: -25 to +70 °C</p> <p>Temperature Drift: 1.5% of full scale</p> <p>Internal Protection Rating: IP67</p> <p>Housing Material: CPB</p> <p>Transducer Material: PET/PU/Epoxy</p> <p>LED: Yellow/Green</p>

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 18 mm

## Front Sensing Transducer

Part Number/ ID Number	Rated Operating Distance (cm)	1 X PNP Output	1 X NPN Output	2 X PNP Output	2X PNP/NPN or Programmable 4-20 mA/0-10v Analog & 1 X PNP/NPN output	Analog 0-10v	Analog 4-20mA	Frequency Output	Retroreflective Programmable	Retroreflective Only	Window Mode Programmable	IO-Link V1.1	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU100U-M18M-AP8X2-H1151 1610095	100	●							●		●	●	15	16°	1	5	≤ 8 m/s	≤ 2 m/s	6.9	A	1	A30
RU100U-M18M-UP8X2-H1151 1610010	100	●											15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	2	A30
RU100U-M18M-UN8X2-H1151 1610081	100		●										15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	3	A30
RU100U-M18M-LFX-H1151 1610022	100						●						15	16°	1	-	≤ 8 m/s	≤ 2 m/s	-	A	4	A30
RU100L-M18M-UP8X2-H1151 1610077	100	●								●			15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	2	A30
RU100L-M18M-UN8X2-H1151 1610085	100		●							●			15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	3	A30
RU130U-M18E-LI8X2-H1151 1610089	130	● <sup>1</sup>					●						15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	B	5	A30
RU130U-M18E-LU8X2-H1151 1610110	130	● <sup>1</sup>				●							15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	B	6	A30
RU130U-M18E-2UP8X2-H1151 1610014	130			●					●		●		15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	B	7	A30
RU130U-M18E-2UP8X2T-H1151 1610018	130			●					●		●		15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	C	7	A30
RU130U-M18E-LIU2PN8X2T-H1151 1610026	130				●				●		●	● <sup>2</sup>	15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	C	8	A30

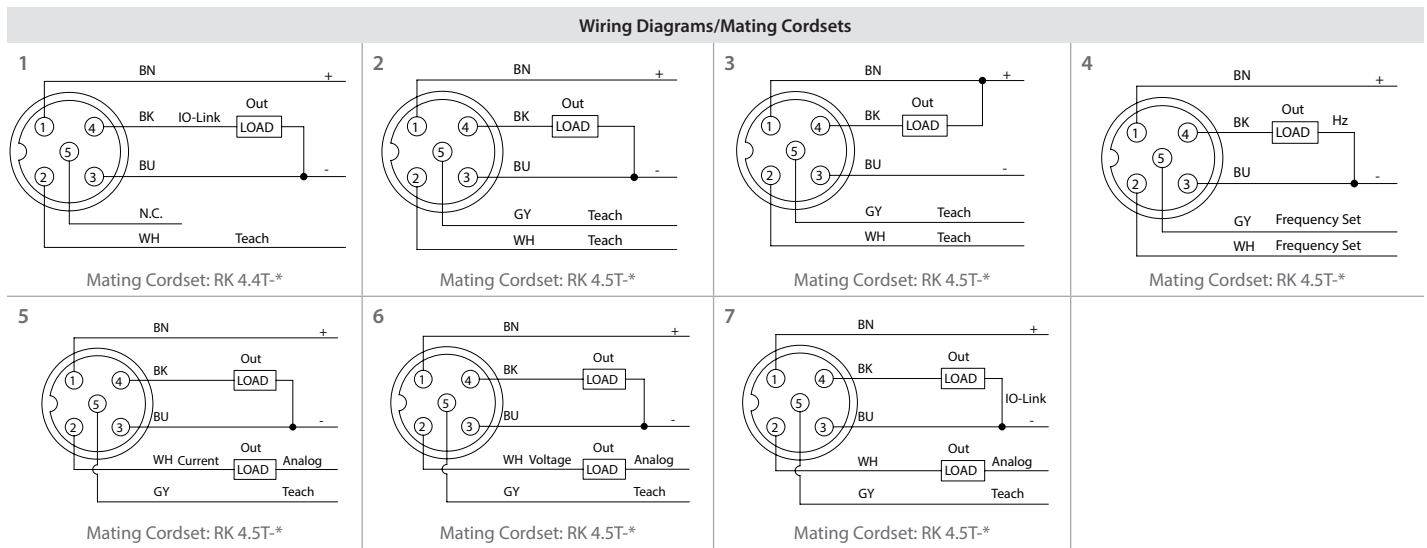
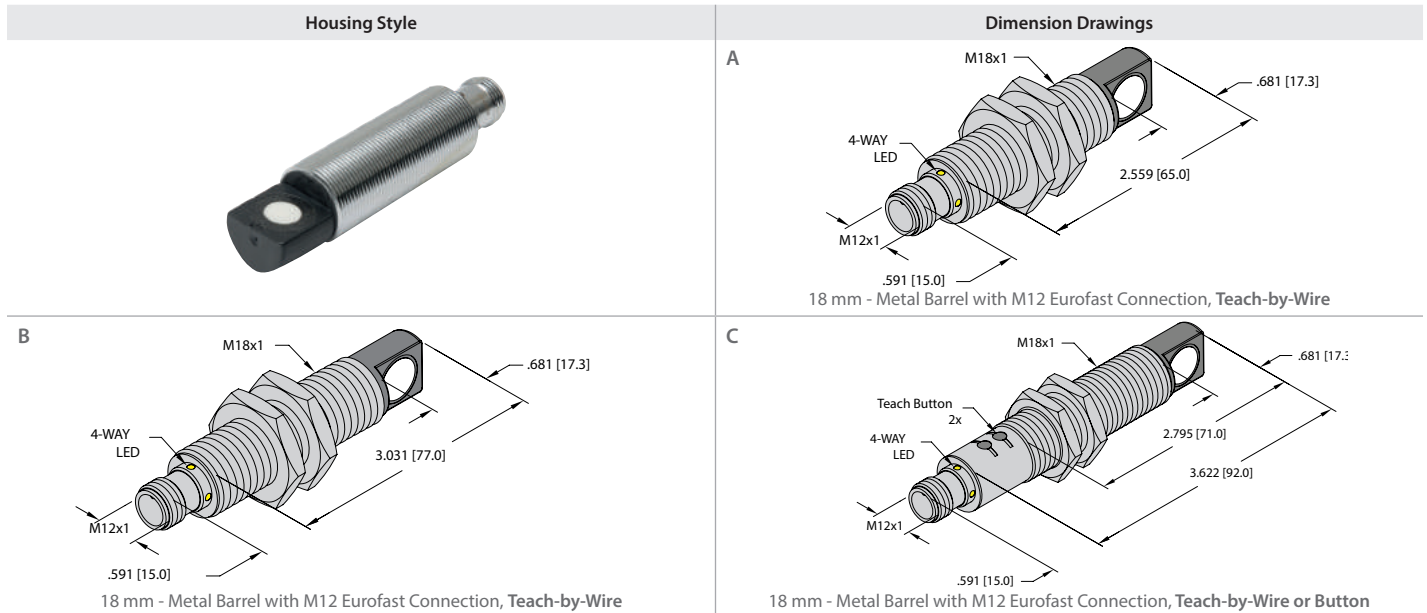
<sup>1</sup> Switching output is not adjustable

<sup>2</sup> Multiplexing and synchronization modes supported

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 18 mm

## Side Sensing Transducer



A30 Ultrasonic Barrels	
<p>Operating Voltage: 15-30 VDC</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Continuous Switching Current: ≤150 mA</p> <p>No-Load Current: ≤50 mA</p> <p>Residual Current: ≤0.1 mA</p> <p>Load Resistance: ≤1000 Ω</p> <p>Readiness Delay: ≤300 ms</p> <p>Repeatability: 0.15% of full scale</p> <p>Switching Output: Programmable NO or NC</p>	<p>Frequency Output (where applicable): 240-1600 Hz or 0-400 Hz Selectable</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Yes</p> <p>Operating Temp: -25 to +70 °C</p> <p>Temperature Drift: 1.5% of full scale</p> <p>Internal Protection Rating: IP67</p> <p>Housing Material: CPB</p> <p>Transducer Material: PET/PU/Epoxy</p> <p>LED: Yellow/Green</p>

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 18 mm

## Side Sensing Transducer

Part Number/ ID Number	Rated Operating Distance (cm)	1 X PNP Output	1 X NPN Output	2X PNP/NPN or Programmable 4-20 mA/0-10 v Analog & 1 X PNP/NPN output	Analog 0-10v	Analog 4-20mA	Frequency Output	Retroreflective Programmable	Retroreflective Only	Window Mode Programmable	IO-Link V1.1	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU40U-M18MS-AP8X2-H1151 1610105	40	●						●		●	●	2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	1	A30
RU40U-M18MS-UP8X2-H1151 1610009	40	●										2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	2	A30
RU40U-M18MS-UN8X2-H1151 1610082	40		●									2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	3	A30
RU40U-M18MS-LFX-H1151 1610019	40						●					2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	4	A30
RU40U-M18ES-LI8X2-H1151 1610097	40	● <sup>1</sup>				●						2.5	15°	0.5	-	≤ 3 m/s	≤ 1.3 m/s	-	B	5	A30
RU40U-M18ES-LU8X2-H1151 1610111	40	● <sup>1</sup>			●							2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	B	6	A30
RU40L-M18MS-UP8X2-H1151 1610078	40	●							●			2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	5.2	A	2	A30
RU40L-M18MS-UN8X2-H1151 1610086	40		●						●			2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	5.2	A	3	A30
RU40U-M18ES-LIU2PN8X2T-H1151 1610025	40			●				●		● <sup>2</sup>	● <sup>2</sup>	2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	C	7	A30


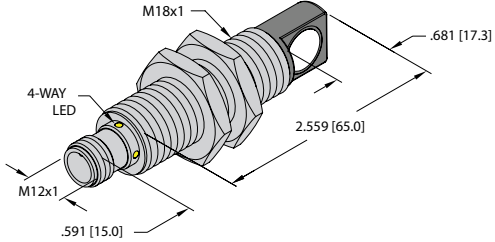
<sup>1</sup> Switching output is not adjustable

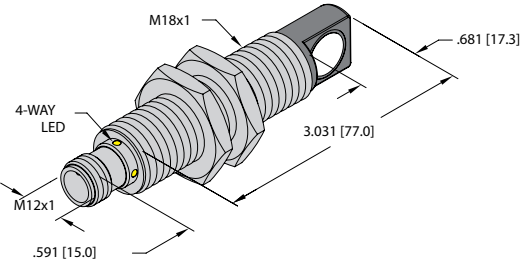
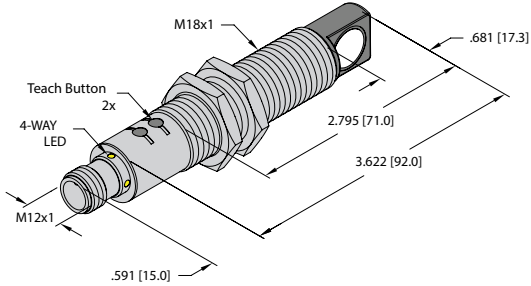
<sup>2</sup> Multiplexing and synchronization modes supported

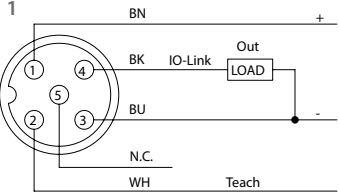
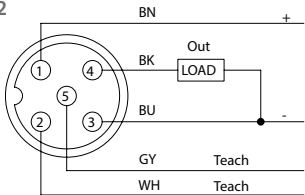
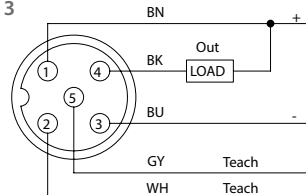
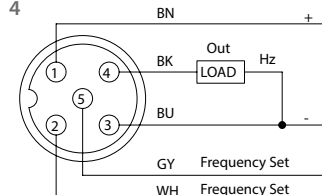
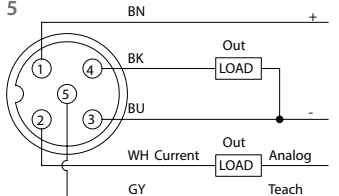
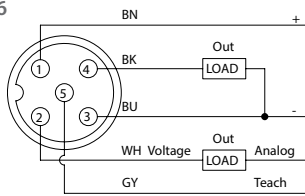
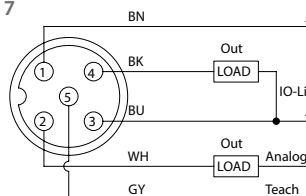
We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 18 mm

## Side Sensing Transducer

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>

<p><b>B</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>	<p><b>C</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>
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Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
<p><b>5</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>6</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>7</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	

A30 Ultrasonic Barrels	
Operating Voltage:	15-30 VDC
Voltage Drop Across Conducting Sensor:	≤2.5 V
Continuous Switching Current:	≤150 mA
No-Load Current:	≤50 mA
Residual Current:	≤0.1 mA
Load Resistance:	≤1000 Ω
Readiness Delay:	≤300 ms
Repeatability:	0.15% of full scale
Switching Output:	Programmable NO or NC
Frequency Output (where applicable):	240-1600 Hz or 0-400 Hz Selectable
Short-Circuit Protection:	Yes
Reverse Polarity Protection:	Yes
Operating Temp:	-25 to +70 °C
Temperature Drift:	1.5% of full scale
Internal Protection Rating:	IP67
Housing Material:	CPB
Transducer Material:	PET/PU/Epoxy
LED:	Yellow/Green

We reserve the right to make technical alterations without prior notice.



# Ultrasonics Sensors | 18 mm

## Side Sensing Transducer

Part Number/ ID Number	Rated Operating Distance (cm)	1 X PNP Output	1 X NPN Output	2X PNP/NPN or Programmable 4-20 mA/0-10 v Analog & 1 X PNP/NPN output	Analog 0-10v	Analog 4-20mA	Frequency Output	Retroreflective Programmable	Retroreflective Only	Window Mode Programmable	IO-Link V1.1	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU100U-M18MS-AP8X2-H1151 1610106	100	•						•		•	•	15	16°	1	5	≤ 8 m/s	≤ 2 m/s	6.9	A	1	A30
RU100U-M18MS-UP8X2-H1151 1610011	100	•										15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	2	A30
RU100U-M18MS-UN8X2-H1151 1610083	100		•									15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	3	A30
RU100U-M18MS-LFX-H1151 1610020	100						•					15	16°	1	-	≤ 8 m/s	≤ 2 m/s	-	A	4	A30
RU100L-M18MS-UP8X2-H1151 1610079	100	•							•			15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	2	A30
RU100L-M18MS-UN8X2-H1151 1610087	100		•						•			15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	3	A30
RU130U-M18ES-LI8X2-H1151 1610098	130	• <sup>1</sup>					•					15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	B	5	A30
RU130U-M18ES-LU8X2-H1151 1610112	130	• <sup>1</sup>			•							15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	B	6	A30
RU130U-M18ES-LIU2PN8X2T-H1151 1610027	130			•				•	•	• <sup>2</sup>		15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	C	7	A30


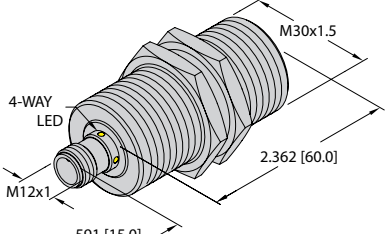
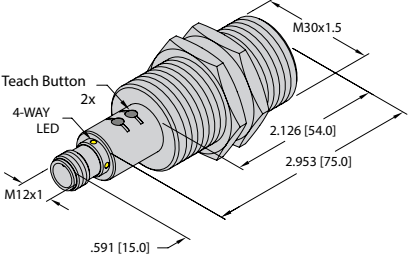
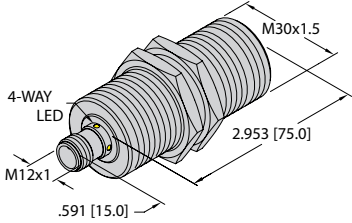
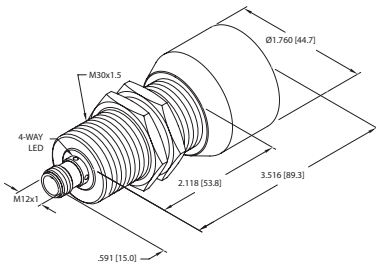
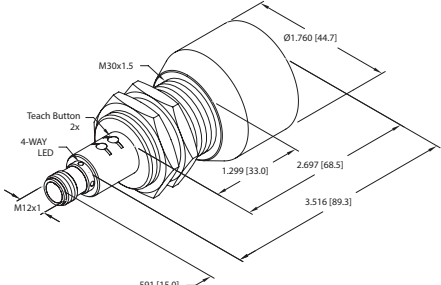
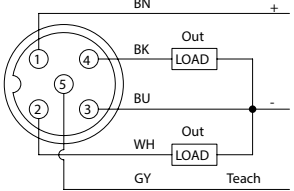
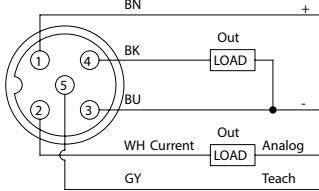
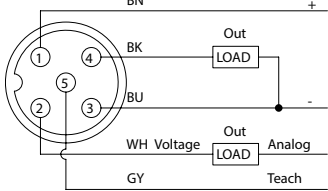
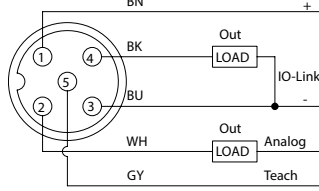
<sup>1</sup> Switching output is not adjustable

<sup>2</sup> Multiplexing and synchronization modes supported

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 30 mm

## Front Sensing Transducer

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>
<p><b>B</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>	<p><b>C</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>
<p><b>D</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire</p>	<p><b>E</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
<p><b>3</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
A30 Ultrasonic Barrels	
<p>Operating Voltage: 15-30 VDC</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Continuous Switching Current: ≤150 mA</p> <p>No-Load Current: ≤50 mA</p> <p>Residual Current: ≤0.1 mA</p> <p>Load Resistance: ≤1000 Ω</p> <p>Readiness Delay: ≤300 ms</p> <p>Repeatability: 0.15% of full scale</p> <p>Switching Output: Programmable NO or NC</p>	<p>Frequency Output (where applicable): 240-1600 Hz or 0-400 Hz Selectable</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Yes</p> <p>Operating Temp: -25 to +50 °C</p> <p>Temperature Drift: 1.5% of full scale</p> <p>Internal Protection Rating: IP67</p> <p>Housing Material: CPB</p> <p>Transducer Material: PET/PU/Epoxy</p> <p>LED: Yellow/Green</p>

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | 30 mm

## Front Sensing Transducer

Part Number/ ID Number	Rated Operating Distance (cm)	1 X PNP Output	2 X PNP Output	2X PNP/NPN or Programmable 4-20 mA/0-10 V Analog & 1 X PNP/NPN output	Analog 0-10v	Analog 4-20mA	Retroreflective Programmable	Window Mode Programmable	IO-Link V1.1	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU40U-M30M-2UP8X2-H1151 1610032	40		●				●	●		2.5	15°	0.5	5	≤ 4 m/s	≤ 1.2 m/s	10.4	A	1	A30
RU130U-M30M-2UP8X2-H1151 1610034	130		●				●	●		15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	A	1	A30
RU130U-M30E-2UP8X2T-H1151 1610038	130		●				●	●		15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	B	1	A30
RU130U-M30E-LIU2PN8X2T-H1151 1610046	130			●			●	●	● <sup>2</sup>	15	16°	1	10	≤ 8 m/s	≤ 2 m/s	6.9	B	4	A30
RU300U-M30M-2UP8X2-H1151 1610036	300		●				●	●		30	15°	1	25	≤ 11 m/s	≤ 4.2 m/s	3.3	C	1	A30
RU300U-M30E-LI8X2-H1151 1610099	300	● <sup>1</sup>				●				30	15°	1	25	≤ 11 m/s	≤ 4.2 m/s	3.3	A	2	A30
RU300U-M30E-LU8X2-H1151 1610113	300	● <sup>1</sup>			●					30	15°	1	25	≤ 11 m/s	≤ 4.2 m/s	3.3	A	3	A30
RU300U-M30E-2UP8X2T-H1151 1610040	300		●				●	●		30	15°	1	25	≤ 11 m/s	≤ 4.2 m/s	3.3	B	1	A30
RU300U-M30E-LIU2PN8X2T-H1151 1610048	300			●			●	●	● <sup>2</sup>	30	15°	1	25	≤ 11 m/s	≤ 4.2 m/s	3.3	B	4	A30
RU600U-M30M-2UP8X2-H1151 1610037	600		●				●	●		60	15°	1	50	≤ 11 m/s	≤ 3.7 m/s	1.6	D	1	A30
RU600U-M30E-LI8X2-H1151 1610100	600	● <sup>1</sup>				●				60	15°	1	50	≤ 11 m/s	≤ 3.7 m/s	1.6	D	2	A30
RU600U-M30E-LU8X2-H1151 1610114	600	● <sup>1</sup>			●					60	15°	1	50	≤ 11 m/s	≤ 3.7 m/s	1.6	D	3	A30
RU600U-M30E-2UP8X2T-H1151 1610041	600		●				●	●		60	15°	1	50	≤ 11 m/s	≤ 3.7 m/s	1.6	E	1	A30
RU600U-M30E-LIU2PN8X2T-H1151 1610049	600			●			●	●	● <sup>2</sup>	60	15°	1	50	≤ 11 m/s	≤ 3.7 m/s	1.6	E	4	A30


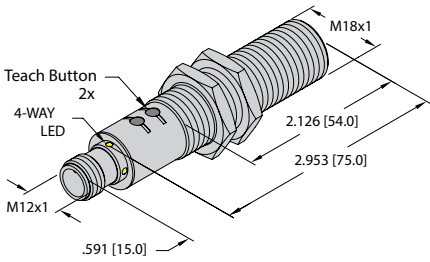
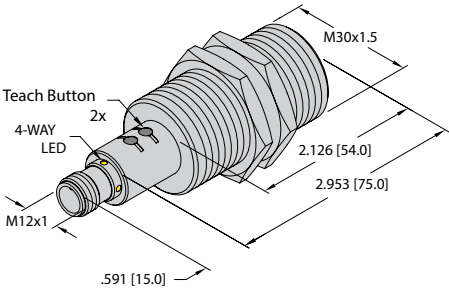
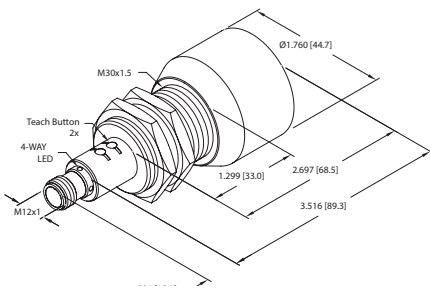
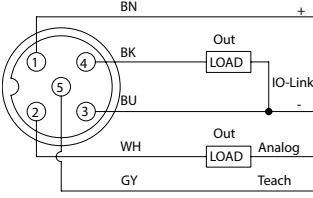
We reserve the right to make technical alterations without prior notice.

<sup>1</sup> Switching output is not adjustable

<sup>2</sup> Multiplexing and synchronization modes supported

# Ultrasonics Sensors | Hazardous Area

## ATEX and IECEx Approval

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>18 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>
<p><b>B</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>	<p><b>C</b></p>  <p>30 mm - Metal Barrel with M12 Eurofast Connection, Teach-by-Wire or Button</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	
A31	Ultrasonic Barrel w/ ATEX Approval
<p>Operating Voltage: 15-30 VDC</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Continuous Switching Current: ≤150 mA</p> <p>No-Load Current: ≤50 mA</p> <p>Residual Current: ≤0.1 mA</p> <p>Load Resistance: ≤1000 Ω</p> <p>Readiness Delay: ≤300 ms</p> <p>Repeatability: 0.15% of full scale</p> <p>Switching Output: Programmable NO or NC</p> <p>Short-Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Yes</p>	<p>Operating Temp: -25 to +70 °C</p> <p>Temperature Drift: 1.5% of full scale</p> <p>Internal Protection Rating: IP67</p> <p>Housing Material: SS</p> <p>Transducer Material: PET/PU/Epoxy</p> <p>LED: Yellow/Green</p> <p>Approval with Teach Button: II 3G Ex nA nC IIC T6 Gc II 3D Ex tc IIIC T70°C Dc</p> <p>Approval without Teach Button: II 3G Ex nA IIC T6 Gc II 3D Ex tc IIIC T70°C Dc</p>

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | Hazardous Area

## ATEX and IECEx Approval


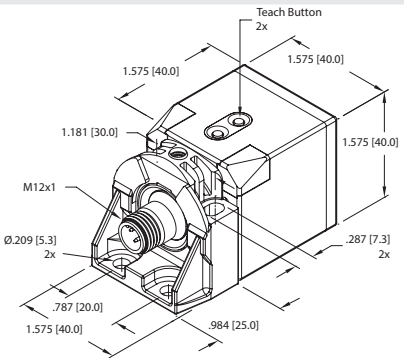
Part Number/ ID Number	Rated Operating Distance (cm)	2X PNP/NPN or Programmable 4-20 mA/0-10 V Analog & 1 X PNP/NPN output	Retroreflective Programmable	Window Mode Programmable	IO-Link V1.1	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU40U-EM18E-LIU2PN8X2T-H1151/3GD 1610071	40	●	●	●	● <sup>1</sup>	2.5	15°	0.5	5	≤ 3 m/s	≤ 1.3 m/s	10.4	A	1	A31
RU130U-EM18E-LIU2PN8X2T-H1151/3GD 1610072	130	●	●	●	● <sup>1</sup>	15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	A	1	A31
RU130U-EM30E-LIU2PN8X2T-H1151/3GD 1610073	130	●	●	●	● <sup>1</sup>	15	16°	1	10	≤ 10 m/s	≤ 2 m/s	6.9	B	1	A31
RU300U-EM30E-LIU2PN8X2T-H1151/3GD 1610074	300	●	●	●	● <sup>1</sup>	30	15°	1	25	≤ 11 m/s	≤ 4.2 m/s	3.3	B	1	A31
RU600U-EM30E-LIU2PN8X2T-H1151/3GD 1610075	600	●	●	●	● <sup>1</sup>	60	15°	1	50	≤ 11 m/s	≤ 3.7 m/s	1.6	C	1	A31

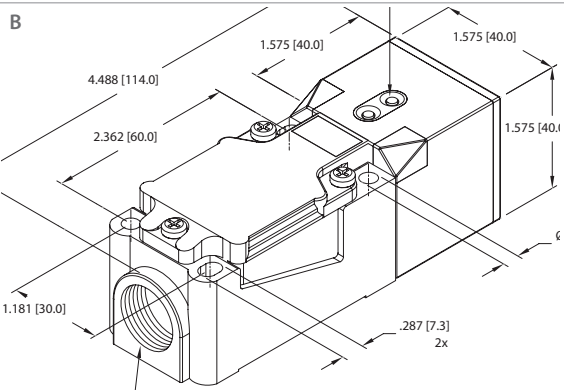
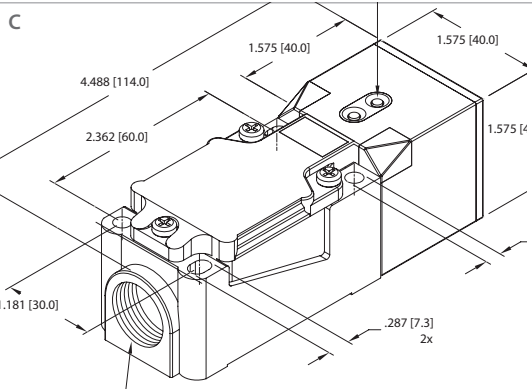
<sup>1</sup> Multiplexing and synchronization modes supported.

We reserve the right to make technical alterations without prior notice.

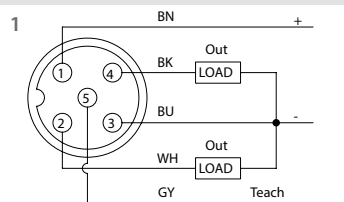
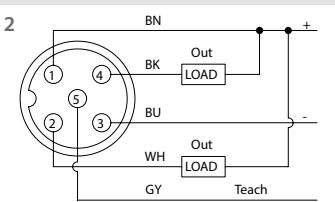
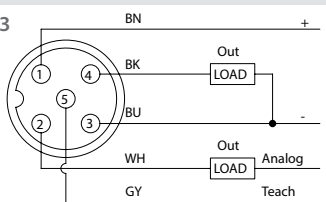
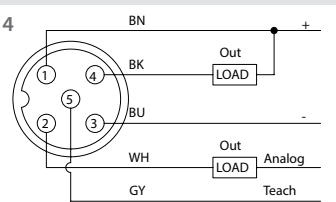
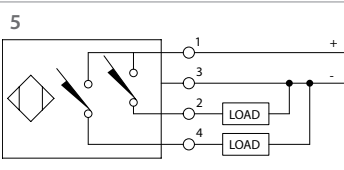
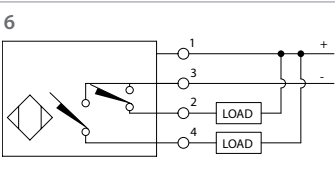
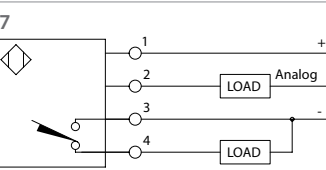
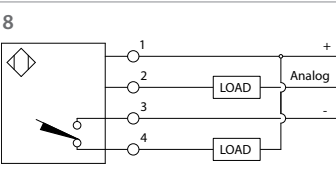
# Ultrasonics Sensors | CK40 & CP40

## 5 Way Rotatable Sensing Head

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CK40 - M12 Eurofast Connection, Teach-by-Wire or Button</p>

<p><b>B</b></p>  <p>CP40 - Terminal Chamber with M20x1.5 Conduit Connection, Teach-by-Button</p>	<p><b>C</b></p>  <p>CP40 - Terminal Chamber with 1/2 NPT Conduit Connection, Teach-by-Button</p>
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**Wiring Diagrams/Mating Cordsets**

<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: RK 4.5T-*</p>	<p><b>4</b></p>  <p>Mating Cordset: RK 4.5T-*</p>
<p><b>5</b></p> 	<p><b>6</b></p> 	<p><b>7</b></p> 	<p><b>8</b></p> 

A32	Ultrasonic Rectangular
<p>Operating Voltage: 15-30 VDC</p> <p>Voltage Drop Across Conducting Sensor: ≤2.5 V</p> <p>Continuous Switching Current: ≤150 mA</p> <p>No-Load Current: ≤50 mA</p> <p>Residual Current: ≤0.1 mA</p> <p>Load Resistance: ≤1000 Ω</p> <p>Readiness Delay: ≤300 ms</p> <p>Repeatability: 0.25% of full scale</p> <p>Switching Output: Programmable NO or NC</p>	<p>Analog Output: 4-20 mA or 0-10 V Programmable</p> <p>Short Circuit Protection: Yes</p> <p>Reverse Polarity Protection: Yes</p> <p>Operating Temp: 0 to +70 °C</p> <p>Temperature Drift: 1.5% of full scale</p> <p>Internal Protection Rating: IP40</p> <p>Housing Material: PBT-GF30</p> <p>Transducer Material: AL/Ceramic</p> <p>LED: Yellow/Green</p>

We reserve the right to make technical alterations without prior notice.

# Ultrasonics Sensors | CK40 & CP40

## 5 Way Rotatable Sensing Head

Part Number/ ID Number	Rated Operating Distance (cm)	2 X PNP Output	2 X NPN Output	Programmable 4-20 mA/0-10 v Analog & 1 X PNP output	Programmable 4-20 mA/0-10 v Analog & 1 X NPN output	Retroreflective Programmable	Window Mode Programmable	Blind Zone (cm)	Sonic Cone Angle	Resolution (mm)	Switching Hyst. (mm)	Max Approach Speed	Max Pass Speed	Switching Freq. (Hz)	Dimension Drawings	Wiring Diagrams	Spec List
RU200-CK40-2UP8X2T-H1151 1610051	200	●				●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	A	1	A32
RU200-CK40-2UN8X2T-H1151 1610057	200		●			●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	A	2	A32
RU200-CK40-LIU2P8X2T-H1151 1610053	200			●		●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	A	3	A32
RU200-CK40-LIU2N8X2T-H1151 1610058	200				●	●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	A	4	A32
RU200-CP40-2UP8X2T 1610052	200	●				●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	B	5	A32
RU200-CP40-2UN8X2T 1610055	200		●			●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	B	6	A32
RU200-CP40-2UP8X2T/S10 1610092	200	●				●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	C	5	A32
RU200-CP40-2UN8X2T/S10 1610090	200		●			●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	C	6	A32
RU200-CP40-LIU2P8X2T 1610054	200			●		●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	B	7	A32
RU200-CP40-LIU2N8X2T 1610056	200				●	●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	B	8	A32
RU200-CP40-LIU2P8X2T/S10 1610093	200			●		●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	C	7	A32
RU200-CP40-LIU2NP8X2T/S10 1610091	200				●	●	●	5	60°	1	20	≤ 3 m/s	≤ 3 m/s	3	C	8	A32

We reserve the right to make technical alterations without prior notice.

# Notes

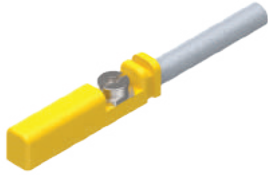






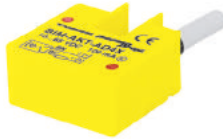







Notes


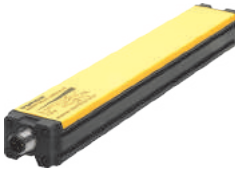



# Cylinder Position Sensor Selection Guide

Cylinder Position Sensors			
			
Housing	UNT	UNTK	UNR
Pages	G13	G15	G17
Style of Cylinder	□ ○ ○ ⊚	□ ○ ○ ⊚	⊚ ○

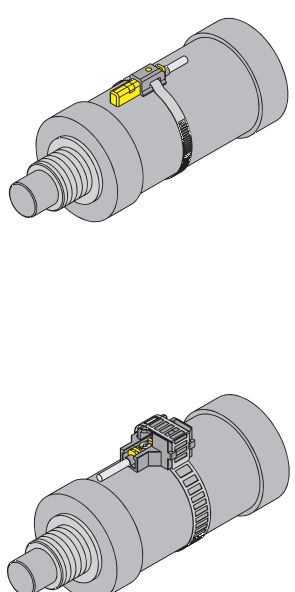
Cylinder Position Sensors				
				
Housing	PST	KST	AKT	IKE/IKT
Pages	G19	G21	G23	G25
Style of Cylinder	○	○	○	○

Cylinder Position Sensors		Inductive		World Clamp Sensors	
					
Housing	IKM	NST	CRS	Variable	
Pages	G27	G29	G31 - 34	G35 - 40	
Style of Cylinder	○	□			

Magnetic Analog			
			
Housing	UNT	25 mm	Variable
Pages	G41	G43	G45
Style of Cylinder	□ ○		□ ○ ○ ⊚

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors

Drawing	Manufacturer	Cylinder Series	Turck Sensor	Turck Bracket	
				KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
	Parker	P, SRM, SRDM, XLT, XLR, XKB, (S, SRD) <sup>3</sup>	UNT Style	KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
			UNR Style	KLR-2 UNR with ASB Clamp <sup>2</sup>	
	Festo	CRDG, CRDSNU, CRDSW, DSNU, SDNUL, DSEU, ESEU, ESNU, ESW, (DSN) <sup>3</sup>	UNT Style	KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
			UNR Style	KLR-2 UNR with ASB Clamp <sup>2</sup>	
	Bimba	Original Line II (0L2), Original Line (M, MH, MNR, MC, MRS), Double Wall (DW, DWD, DWN, DWM), PC, Z Series (M04, M09, M17, M31), Linear Thrusters (T, TE)	UNT Style	KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
			UNR Style	KLR-2 UNR with ASB Clamp <sup>2</sup>	
	SMC	NCM, NCJ2, NCG, NCA1, CJ2, CM2, CG1, MGG	UNT Style	KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
			UNR Style	KLR-2 UNR with ASB Clamp <sup>2</sup>	
	Norgren	Round Line (RL)	UNT Style	KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
			UNR Style	KLR-2 UNR with ASB Clamp <sup>2</sup>	
	Fabco-Air	Pancake (X, XK, O, OP, XDR, XDRK, ODR), Linear Slide (L, S, E)	UNT Style	KLRC-UNT* <sup>4</sup>	KLDT with ASB Clamp <sup>2</sup>
			UNR Style	KLR-2 UNR with ASB Clamp <sup>2</sup>	

1. This Mounting is to be used only when "Switch Rail" is present on the cylinder.
2. ASB size is determined by the cylinder diameter. See Table 1. KLDT is required when the UNT sensor has integral quick disconnect.
3. These styles are not usually available with magnets.
4. Bracket size determined by the cylinder diameter. See Table 2.

UNT Housing with KLDT-UNT and ASB Style Strap		
Cylinder Diameter		Clamp (Stainless Steel)
Inches	Millimeters	
.276 - .433	7 - 11	ASB-1
.433 - .748	11 - 19	ASB-2
.709 - 1.142	18 - 29	ASB-3
1.102 - 1.535	28 - 39	ASB-4
1.496 - 1.929	38 - 49	ASB-5
1.890 - 2.323	48 - 59	ASB-6
2.283 - 2.717	58 - 69	ASB-7
2.677 - 3.110	68 - 79	ASB-8

Table 1

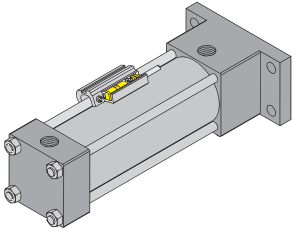
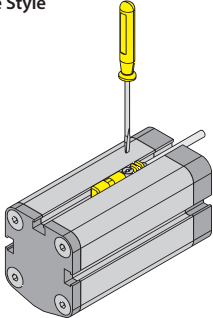
UNT Housing with KLRC-UNT*		
Part Number	Cylinder Diameter	
	Inches	Millimeters
KLRC-UNT1	.315 - .984	8 - 25
KLRC-UNT2	.984 - 2.480	25 - 63
KLRC-UNT3	2.480 - 5.118	63 - 130
KLRC-UNT4	5.118 - 9.843	130 - 250

Table 2

We reserve the right to make technical alterations without prior notice.

Cylinder Position Sensors

# Cylinder Position Sensors

Drawing	Manufacturer	Cylinder Series	Turck Sensor	Turck Bracket
<b>Tie Rod Style</b>  KLZ* (Table 3)	Numatics	A, E, S, L, B Square, VDMA-Z	UNT Style	KLZ Series Clamp <sup>1</sup>
	Parker	P5E, HBT, LPM, (S, C, LP) <sup>2</sup>	UNT Style	KLZ Series Clamp <sup>1</sup>
	PHD	A2, A3, AS, AV, AV2, A3V, AVS, HV, HV2, H3V, HVS, DAV, DHV, EA, EL, EH, ES, NPG, NHG, NEAG, NEHG, TD, (A) <sup>2</sup>	UNT Style	KLZ Series Clamp <sup>1</sup>
	Festo	DNGU, DNGUL, DNGUT, DNU, DNUL, CRDNG, CRDNGS, DNG, DNGL, DNGZK, DNGZL, DNGZS, DKE	UNT Style	KLZ Series Clamp <sup>1</sup>
	Bimba	Flat-I (FO, FOD, FOP, FOR, FOS, FS, FSD, FSR, FSS, F02, F03, F04), Flat-II (FT, FST)	UNT Style	KLZ Series Clamp <sup>1</sup>
	SMC	ECQ2, MB, C95	UNT Style	KLZ Series Clamp <sup>1</sup>
	Norgren	A, EA, SS, N, J, EJ, 8000/M	UNT Style	KLZ Series Clamp <sup>1</sup>
	Turn-Act	NFPA Series	UNT Style	KLZ Series Clamp <sup>1</sup>
	Fabco-Air	Long Stroke (321, 521, 721, 1221, S321, S521, S721, S1221), Hi-Power (HP, THP, UHP), Multi-Power (MP, BA, BP), Linear Slide <sup>3</sup> (SE, EZ, TS)	UNT Style	KLZ Series Clamp <sup>1</sup>
<b>T-Groove Style</b> 	Parker	P1M, P5T, SST	UNT Style	No Additional Bracket Required
	Festo	DNC, DNCT, DFM, DPZ, DPZJ, DZF, EZH, ADVU, ADVULQ, ADVUL	UNT Style	No Additional Bracket Required
	SMC	CUJ, CXS, MGQ, MY1B, MHC, MHL2	UNT Style	No Additional Bracket Required

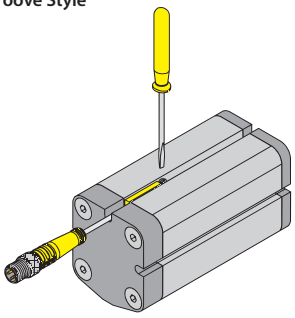
1. When using KLZ Series Clamps, user must determine clamp size best suited for application.
2. These styles are usually not available with magnets.
3. Some of these may be equipped to handle 5, 8, or 12 mm inductive proximity sensors.

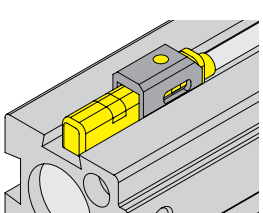
UNT Sensor with KLZ* Mounting		
Part Number	Tie Rod Diameter Maximum	
	Inches	Millimeters
KLZ1A-INT	.236	6.0
KLZ1M-UNT	.290	7.37
KLZ2M-UNT	.351	8.93
KLZ3M-UNT	.482	12.25

Table 3

We reserve the right to make technical alterations without prior notice.

## Cylinder Position Sensors

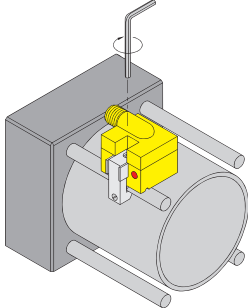
Drawing	Manufacturer	Cylinder Series	Turck Sensor	Turck Bracket
<b>C-groove Style</b> 	Numatics	K	UNR Style	No Additional Bracket Required
	Festo	ADVC	UNR Style	No Additional Bracket Required
	Bimba	Twin Bore (TB, TBA, TBD), EF1 Series (EF, EFD, EFS, EFR), EF2 Series (EFT), PneuMoment Series (PM)	UNR Style	No Additional Bracket Required
	SMC	(CQ2, CQs, NCDQ2, NCQ2) <sup>1</sup> , (CDQ2) <sup>1</sup> , CU, CUK, CUW, MU, MHF2, Air Slides (MXQ)	UNR Style	No Additional Bracket Required
	Compact Air	B, C	UNR Style	No Additional Bracket Required
	PHD	CRH O-groove	UNR Style	No Additional Bracket Required

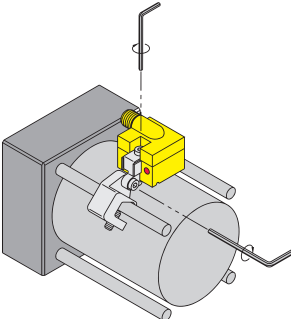
Drawing	Manufacturer	Cylinder Series	Turck Sensor	Turck Bracket
<b>Dovetail Style</b> 	Numatics	B,F, Compact C, Short Stroke, Rotary Actuator, Pee Wee (O, P, Q), VDMA-V, Ring Series	UNT Style	KLDT-UNT3
	Norgren	90000, 91000, 92000, 93000, Lite (A44000)	UNT Style	KLDT-UNT3
	Fabco-Air	Square 1 (SQ, SQF, SQL) Pancake (X,XK, O, OP, XDR, XDRK, ODR) Linear Slide1 (GB, L, S, E, SE, EZ, TS) <sup>2</sup>	UNR Style	KLFA-2UNR
	Compact Air	Inch Series (AB, AS, AR, AT) Inch Series (B, R, S, T) <sup>3</sup> Ball Slide (BSC) GC, CD, ACLA, ACLAD, (CLA, CLAD) <sup>3</sup> Metric Series (AWS, AWB, AWT) Metric Series (WS, WB, WT) <sup>3</sup> B/Base Mount, S/End Mount R/ End Mount, (CSC, PSC, TCL) <sup>4</sup>	UNT Style	KLDT-UNT4
	SMC	CP95	UNT Style	KLDT-UNT6

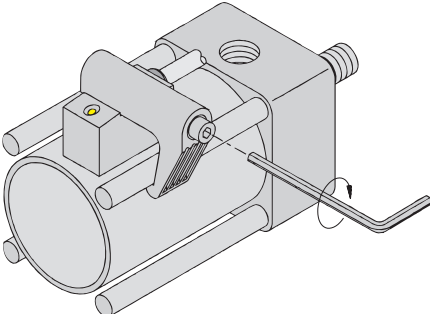
We reserve the right to make technical alterations without prior notice.

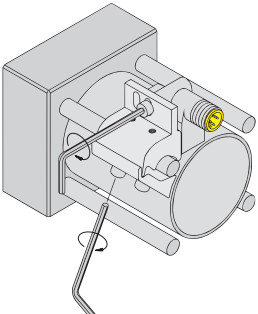
1. CQ2, NC(D) Q2, CQS, NCQ2 cylinders may have multiple grooves and may not be suited for the UNR style sensor.
2. This mounting is to be used only when dovetail style mounting rail is present on the cylinder.
3. These styles are usually not available with magnets.
4. This mounting is to be used only when sensor mounting rail is present on collet.

# Cylinder Position Sensors

Drawing	AKT Housing with KLA1 Clamp	
	Cylinder Diameter	1.26 - 1.97 inches 32 - 50 mm
	Rod Diameter	0.16 - 0.31 inches 4 - 8 mm
	Clamp	KLA1 (Aluminum)

Drawing	AKT Housing with KLA2 Clamp	
	Cylinder Diameter	1.57 - 4.92 inches 40 - 125 mm
	Rod Diameter	0.28 - 0.51 inches 7 - 13 mm
	Clamp	KLA2 (Die-cast Zinc)

Drawing	IKE, IKT, and IKM Housing with KLI1 or KLI3 Clamp		
	Cylinder Diameter	1.26 - 3.94 inches 32 - 100 mm	2.48 - 6.30 inches 63 - 160 mm
	Rod Diameter	0.16 - 0.51 inches 4 - 13 mm	0.24 - 0.63 inches 6 - 16 mm
	Clamp	KLI1 (Die-cast Zinc)	KLI3 (Die-cast Zinc)

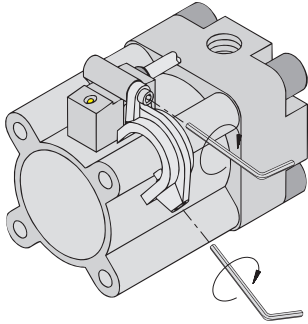
Drawing	IKE, IKT, and IKM Housing with KLI5Z or KLI6Z Clamp		
	Cylinder Diameter	1.26 - 2.48 inches 32 - 63 mm	1.97 - 4.92 inches 50 - 125 mm
	Rod Diameter	0.16 - 0.31 inches 4 - 8 mm	0.24 - 0.51 inches 6 - 13 mm
	Clamp	KLI5Z (Aluminum)	KLI6Z (Aluminum)

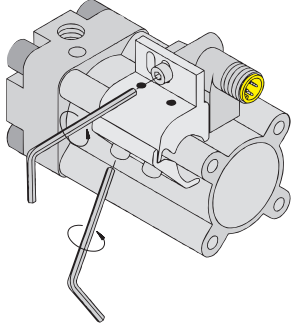
We reserve the right to make technical alterations without prior notice.

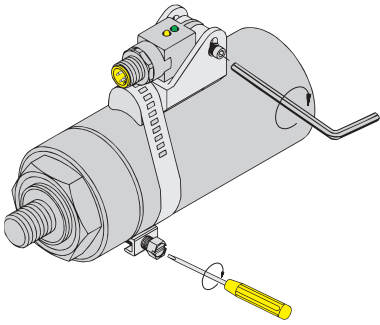
# Cylinder Position Sensors

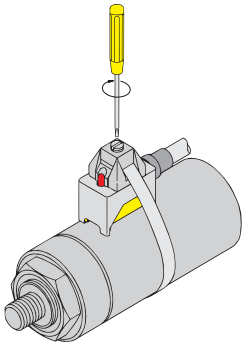
We reserve the right to make technical alterations without prior notice.

Cylinder Position Sensors

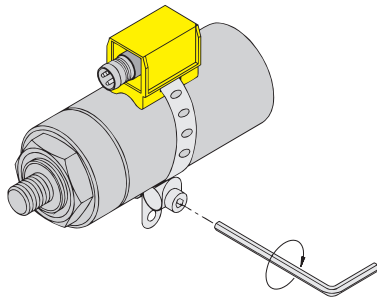
Drawing	IKE, IKT, and IKM Housing with KLI2 Clamp	
	<b>Cylinder Diameter</b>	1.26 - 3.94 inches 32 - 100 mm
	<b>Rod Diameter</b>	0.35 - 0.79 inches 9 - 20 mm
	<b>Clamp</b>	KLI2 (Die-cast Zinc)

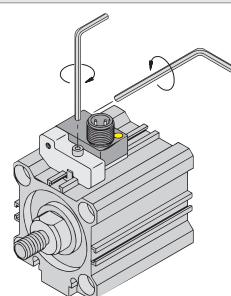
Drawing	IKE, IKT, and IKM Housing with KLI5 or KLI6 Clamp		
	<b>Cylinder Diameter</b>	1.26 - 1.97 inches 32 - 50 mm	1.97 - 3.94 inches 50 - 100 mm
	<b>Rod Diameter</b>	0.31 - 0.55 inches 8 - 14 mm	0.43 - 0.75 inches 11 - 19 mm
	<b>Clamp</b>	KLI5 (Aluminum)	KLI6 (Aluminum)

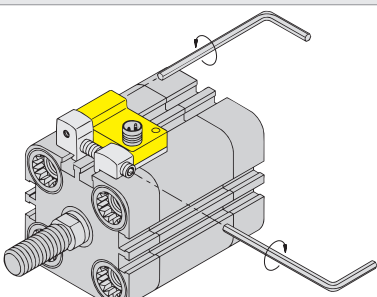
Drawing	IKE, IKT, and IKM Housing with KLI-CB64 or KLI-CB124 Clamp		
	<b>Cylinder Diameter</b>	0.79 - 2.52 inches 20 - 64 mm	0.79 - 4.88 inches 20 - 124 mm
	<b>Rod Diameter</b>	0.31 - 0.55 inches 8 - 14 mm	0.43 - 0.75 inches 11 - 19 mm
	<b>Clamp</b>	KLI-CB64 (Stainless Steel/Steel)	KLI-CB124 (Stainless Steel/Steel)

Drawing	KST Housing with KST-SB170 and KST-SB335 Clamps		
	<b>Cylinder Diameter</b>	0.31 - 0.99 inches 8 - 25 mm	0.31 - 3.15 inches 8 - 80 mm
	<b>Strap</b>	KST-SB170 (Stainless Steel)	KST-SB335 (Stainless Steel)
	<b>Mount</b>	KST-MG (Die-cast Zinc)	
	<b>Screw Plate</b>	KST-SE (Die-cast Zinc)	

# Cylinder Position Sensors

Drawing	PST Housing with KLP80-VA and KLP200-VA Clamps	
	<b>Cylinder Diameter</b>	0.31 - 3.15 inches 8 - 80 mm
	<b>Clamp</b>	KLP80-VA (Stainless steel band, brass nuts)

Drawing	NST Housing with KLQ-1 or KLQ-2 Clamps	
	<b>Cylinder Diameter</b>	0.47 - 3.94 inches 12 - 100 mm
	<b>Cylinder Manufacturer</b>	SMC
	<b>Cylinder Family</b>	NCDQ2
	<b>Clamp</b>	SMC-325 (Anodized Aluminum)

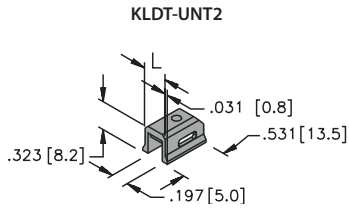
Drawing	NST Housing with KLN3 Clamp	
	<b>Cylinder Diameter</b>	0.47 - 3.94 inches 12 - 100 mm
	<b>Groove Diameter</b>	0.20 - 0.53 (0.83) inches 5.2 - 13.5 (21)* mm
	<b>Clamp</b>	KLN3 (Anodized Aluminum)
	<b>*Accessory</b>	Longer M5 x 35 set screw (A0050)

We reserve the right to make technical alterations without prior notice.



## Cylinder Position Sensors

### UNT Mounting Clamps

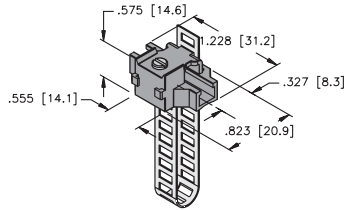


Part Number	"L" inches	"L" mm
KLDT-UNT2	.276	7
KLDT-UNT3	.370	9.4
KLDT-UNT4	.453	11.5
KLDT-UNT5	.496	12.6
KLDT-UNT6	.413	10.5
KLDT-UNT7	.260	6.6

**Note:** For outside dimension of beveled ears add 1.6 mm to bracket width listed.

UNT Housing with KLDT-UNT and ASB Style Strap		
Cylinder Diameter		Clamp (Stainless Steel)
Inches	Millimeters	
.276 - .433	7 - 11	ASB-1
.433 - .748	11 - 19	ASB-2
.709 - 1.142	18 - 29	ASB-3
1.102 - 1.535	28 - 39	ASB-4
1.496 - 1.929	38 - 49	ASB-5
1.890 - 2.323	48 - 59	ASB-6

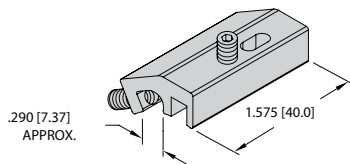
### KLRC-UNT2



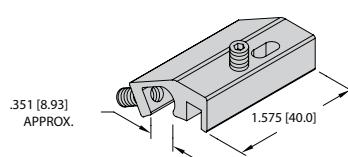
Part Number	Inches	Millimeters
KLRC-UNT1	.315 - .984	8 - 25
KLRC-UNT2	.984 - 2.480	25 - 63
KLRC-UNT3	2.480 - 5.118	63 - 130
KLRC-UNT4	5.118 - 9.843	130 - 250

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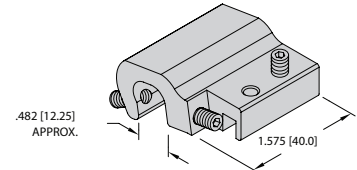
### KLZ1M-UNT (A9927)



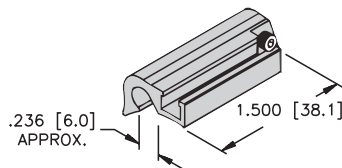
### KLZ2M-UNT (A9929)



### KLZ3M-UNT (A9640)

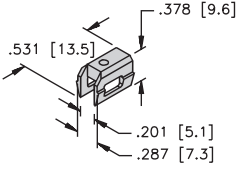
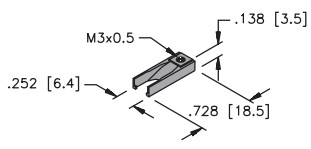
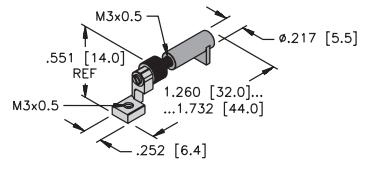



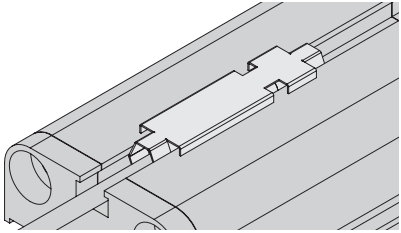
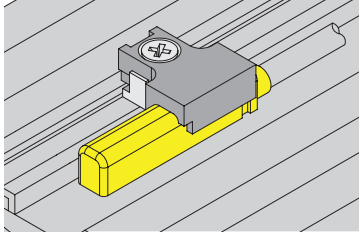


### KLZ1A-INT (A0806)



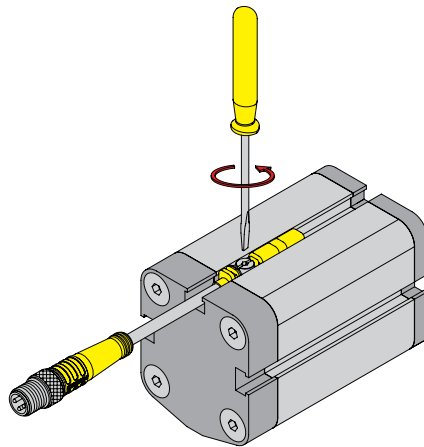
# Cylinder Position Sensors

## UNT Mounting Accessories

<p><b>KLDT-UNT6 (6913355)</b></p> 	<p><b>UNT-Stopper (4685751)</b></p> 	<p><b>UNT-Adjusting Bracket (4685750)</b></p> 
<p><b>UNT Mounting Screw, 2.5 mm (6901056)</b></p>	<p><b>UNT-SCREW 1.5 mm (6901050)</b></p>	<p><b>UNT-Cable Clip (6900456)</b></p>
		<p>.280 [7.1] REF</p> 
<p><b>SG-UNT (A9800)</b></p> 	<p><b>KLT-UNT1 (6913377)</b></p>  <p>For use with SMC 325 Rail</p>	

## UNT Sensor Mounting

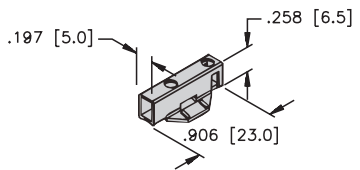
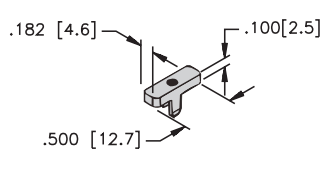
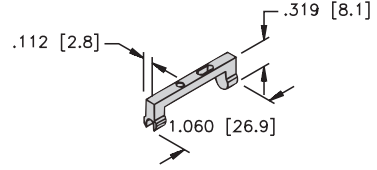
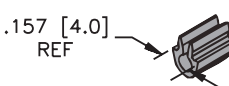

**Note:** Turn screw counter-clockwise to tighten.



We reserve the right to make technical alterations without prior notice.

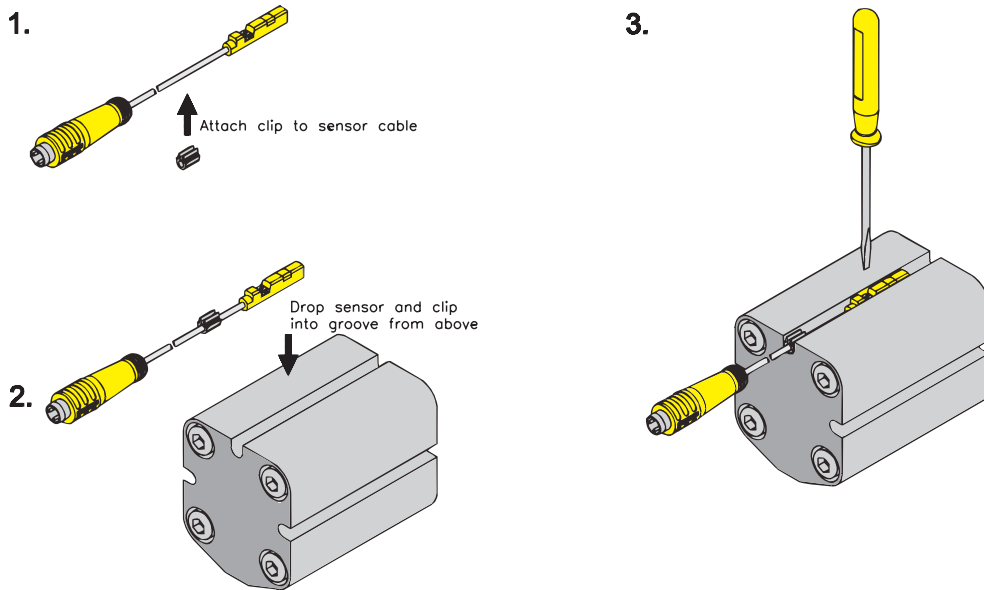
# Cylinder Position Sensors

## UNR Mounting Accessories

KLR2 UNR (10000596)	KLFA-UNR (A9683)	KLTR-2 UNR (A9664)
		
<p data-bbox="272 632 431 678">INR/UNR Cable Clip (6900428)</p> 	<p data-bbox="748 632 911 678">UNR-SCREW 1.3 mm (6901055)</p> 	

We reserve the right to make technical alterations without prior notice.

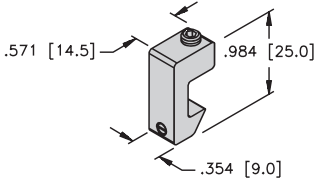
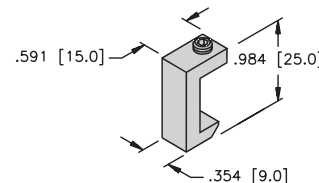
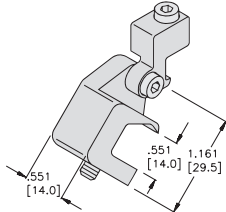
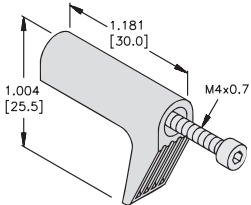
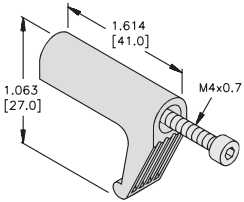
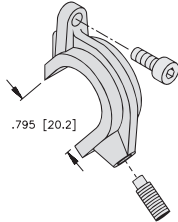
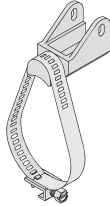
## UNR Sensor Mounting



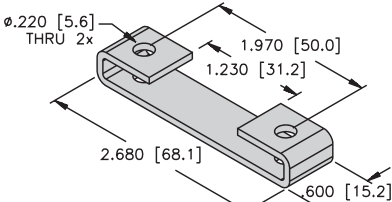
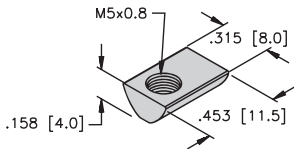
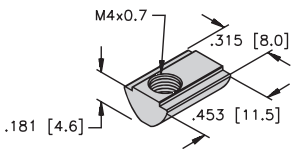
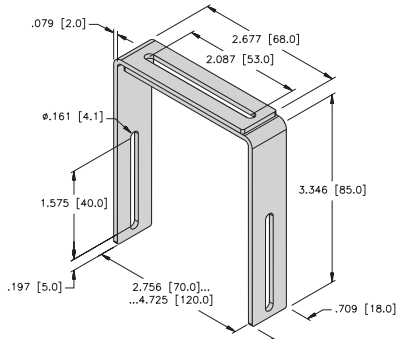
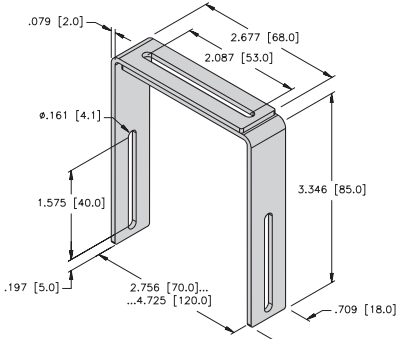
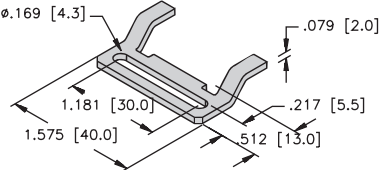
**Note:** Turn screw counter-clockwise to tighten. Use of mounting clip is optional.

# Cylinder Position Sensors

## Mounting Clamps

KLA1 (69700)	KLA3M (A3086)	KLA2 (69701)	KLI1 (69710)
			
KLI3 (69712)	KLI2 (69711)	KLI-CB64 (A3084) and KLI-CB124 (A3085)	
			

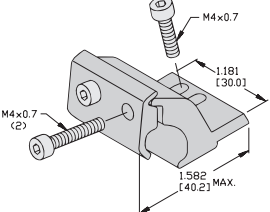
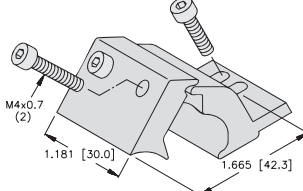
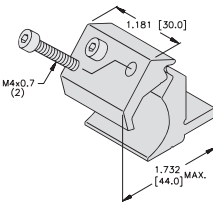
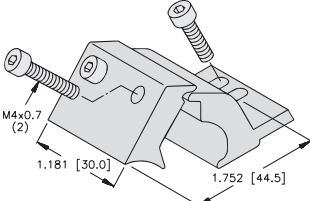
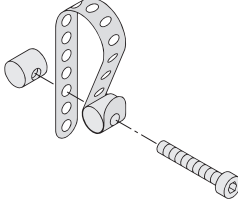
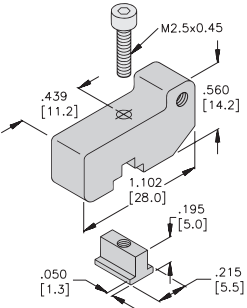
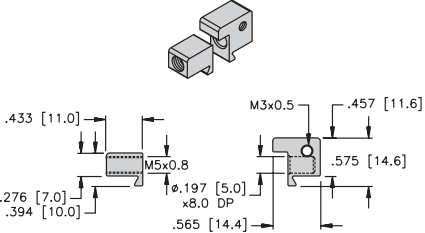

## Mounting Brackets for Q25L Sensor

MBQ21 (A5700)	MNM5Q25 (6901039)	MNM4Q25 (6901025)
 <p>Mounting Bracket</p>	 <p>Sliding block with M5 thread for the backside profile</p>	 <p>Sliding block with M4 thread for the backside profile</p>
MB2.1Q25 (6901027)	MB2.2Q25 (6901028)	MB1Q25 (6901026)
 <p>Mounting bracket for cylinders 40-60 mm</p>	 <p>Mounting bracket for cylinders 70-120 mm</p>	 <p>Mounting Clip</p>

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors


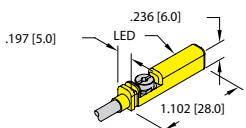
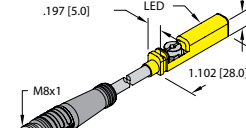
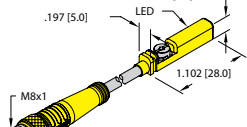
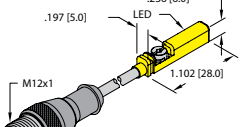
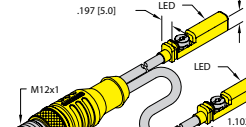
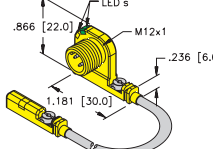
## Mounting Clamps

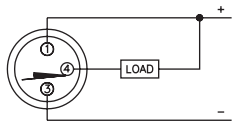
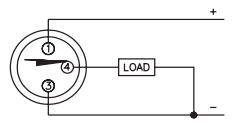
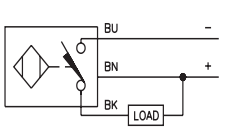
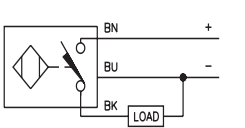
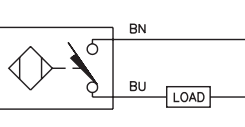
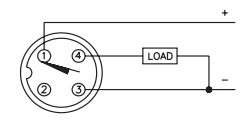
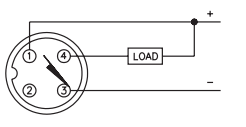
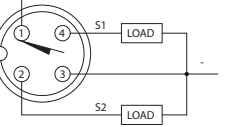
KLI5 (6971802)	KLI5Z (6971803)	KLI6 (6971805)
		
KLI6Z (6971806)	KLP 80-VA (69654)	SMC325 (A3106)
		
KLN3 (6970504)	KST-SB170 (46737) and KST-SB335 (46739)	
		

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-UNT

## T-groove, C-groove, Tie-rod, and Round Cylinder Style

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>UNT - Potted-In Cable</p>	<p><b>B</b></p>  <p>UNT - Picofast® Quick Disconnect</p>
<p><b>C</b></p>  <p>UNT - Picofast Quick Disconnect</p>	<p><b>D</b></p>  <p>UNT - Eurofast® Quick Disconnect</p>	<p><b>E</b></p>  <p>UNT - Eurofast Quick Disconnect</p>
<p><b>F</b></p>  <p>UNT - Eurofast Quick Disconnect</p>		

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3Z-*; PKG 3M-*</p>	<p><b>3</b></p> 	<p><b>4</b></p> 
<p><b>5</b></p> 	<p><b>6</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>7</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>8</b></p>  <p>Mating Cordset: RK 4.4T-*; RKC 4.4T-*</p>

A13	3-wire DC - Magnetic (AN, RN, AP, RP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA;</p> <p>Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>	
A14	2-wire DC - Magnetic (AD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: Non-Polarized (AD) <math>\leq 4</math> V  Polarized (AG) <math>\leq 3.5</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120</math> mA</p> <p>Pass Speed: <math>\leq 3</math> ms, <math>\leq 10</math> ms (UNT)</p>	<p>Off-State (Leakage) Current: <math>\leq 0.8</math> mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm</p>	

Additional Specifications
<b>Magnetic Actuation Strength (Gauss): 20-350</b>

We reserve the right to make technical alterations without prior notice.

## Cylinder Position Sensors | BIM-UNT

### T-groove, C-groove, Tie-rod, and Round Cylinder Style

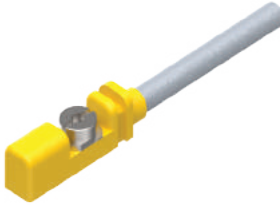
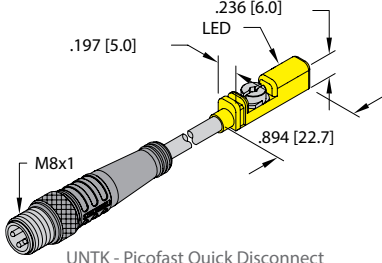
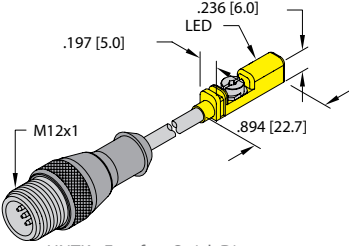
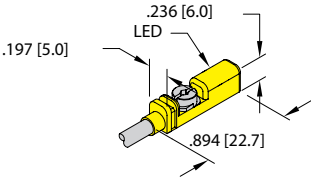
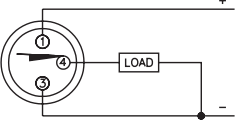
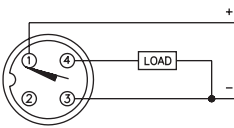
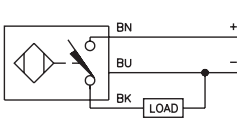
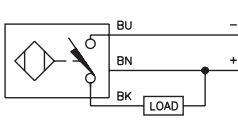
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-UNT-AN6X 4685702		3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	2M/TPU	A	3	A13
BIM-UNT-AP6X 4685720		3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	2M/TPU	A	4	A13
BIM-UNT-AG41X/S1139/S1160 4685766	Irradiated TPU Cable, Wider Range	2-wire DC	10-55 VDC	300	≤ 100	-25 to +70	IP68	PP	2M/TPU	A	5	A14
BIM-UNT-AN6X-0.3-PSG3S 4685705	Fixed Coupling Nut	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	0.3M/TPU	B	1	A13
BIM-UNT-AP6X-0.3-PSG3S 4685722	Fixed Coupling Nut	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	0.3M/TPU	B	2	A13
BIM-UNT-AP6X-0.3-PSG3M 4685723	Rotating Coupling Nut	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	0.3M/TPU	C	2	A13
BIM-UNT-AP6X-0.3-RS4T 46857260		3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	0.3M/TPU	D	6	A13
BIM-UNT-AN6X-0.3-RS4T 4685792		3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP68	PP	0.3M/TPU	D	7	A13
BIM-UNT-0.3-UNT-2AP6X3-H1141 4685730	Dual Switch	4-wire DC, PNP	10-30 VDC	1000	≤ 150	-25 to +70	IP67	PP	0.3M/TPU	F	8	A13
BIM-UNT-AP6X/S991 4685728	Radial Magnetic Fields	3-wire DC, PNP	10-30 VDC	1000	≤ 150	-25 to +70	IP68	PP	2M/TPU	B	4	A13
BIM-UNT-2AP6X-0.2-RSC4.4T 4685891	Dual Switch	4-wire DC, PNP	10-30 VDC	1000	≤ 150	-25 to +70	IP68	PP	0.2M/TPU	E	8	A13

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-UNTK



## T-groove Short Cylinder Style

Housing Style	Dimension Drawings		
	<p>A</p>  <p>UNTK - Picofast Quick Disconnect</p>		
<p>B</p>  <p>UNTK - Eurofast Quick Disconnect</p>	<p>C</p>  <p>UNTK - Potted-In Cable</p>		
Wiring Diagrams/Mating Cordsets			
<p>1</p>  <p>Mating Cordset: PKG 3Z-*</p>	<p>2</p>  <p>Mating Cordset: RK 4T-*</p>	<p>3</p> 	<p>4</p> 
A13 3-wire DC - Magnetic (AN, RN, AP, RP)			
<p>Ripple: <math>\leq 10\%</math>                  Differential Travel (Hysteresis): <math>\leq 1</math> mm                  Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V                  Trigger Current for Short Circuit Protection:  <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current                  Off-State (Leakage) Current: <math>\leq 0.1</math> mA                  No-Load Current: <math>\leq 15</math> mA;                  Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>	<p>Power-On Effect: Per IEC 947-5-2                  Reverse Polarity Protection: Incorporated                  Wire-Break Protection: Incorporated                  Transient Protection: Per EN 60947-5-2                  Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)                  Shock: 30 g, 11 ms                  Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes                  Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>		
A17 3-wire DC - Magnetic w/o Short Circuit Protection (AP7)			
<p>Ripple: <math>\leq 10\%</math>                  Differential Travel (Hysteresis): <math>\leq 1</math> mm                  Voltage Drop Across Conducting Sensor: <math>\leq 1.4</math> V                  Short Circuit Protection: No                  Off-State (Leakage) Current: <math>\leq 0.1</math> mA                  No-Load Current: <math>\leq 10</math> mA;                  Pass Speed: <math>\leq 3</math> ms                  Power-On Effect: Per IEC 947-5-2</p>	<p>Reverse Polarity Protection: Incorporated                  Wire-Break Protection: Incorporated                  Transient Protection: Per EN 60947-5-2                  Temperature Drift: <math>\leq 0.3</math> mm                  Shock: 30 g, 11 ms                  Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes                  Repeatability: <math>\geq \pm 0.3</math> mm</p>		
Additional Specifications			
<b>Magnetic Actuation Strength (Gauss): 20-350</b>			

We reserve the right to make technical alterations without prior notice.



# Cylinder Position Sensors | BIM-UNTK


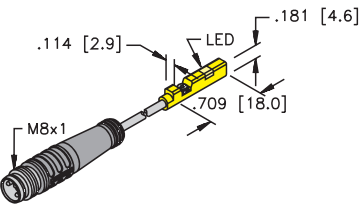
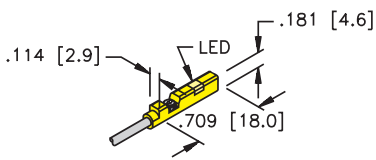
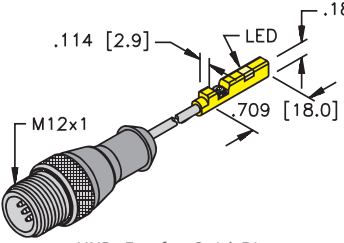
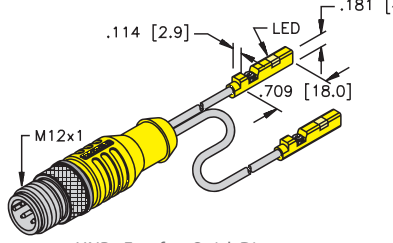
## T-groove Short Cylinder Style

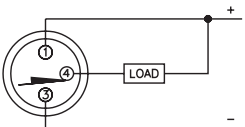
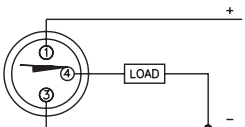
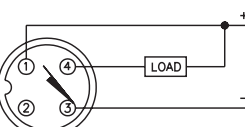
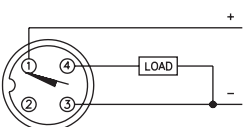
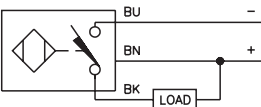
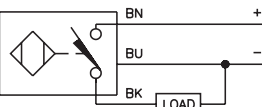
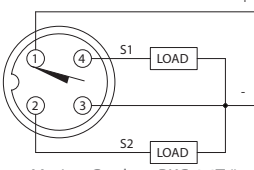
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-UNTK-AP7X-0.3-PSG3M 4686011	Short Body	3-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP68	PP	0.3M/TPU	A	1	A17
BIM-UNTK-AP7X-0.3-RS4T 4686021	Short Body	3-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP68	PP	0.3M/TPU	B	2	A17
BIM-UNTK-AP7X 4686001	Short Body	3-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP68	PP	2M TPU	C	3	A17
BIM-UNTK-AP6X 4686005	short Body	3-wire DC, PNP	10-30 VDC	300	≤ 150	-25 to +70	IP68	PP	2M TPU	C	3	A13
BIM-UNTK-AN6X 4686006	Short Body	3-wire DC, PNP	10-30 VDC	300	≤ 150	-25 to +70	IP68	PP	2M TPU	C	4	A13

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-UNR

## C-groove Cylinder Style

Housing Style	Dimension Drawings	
	<p>A</p>  <p>UNR - Picofast Quick Disconnect</p>	<p>B</p>  <p>UNR - Potted-In Cable</p>
<p>C</p>  <p>UNR - Eurofast Quick Disconnect</p>	<p>D</p>  <p>UNR - Eurofast Quick Disconnect</p>	

Wiring Diagrams/Mating Cordsets			
<p>1</p>  <p>Mating Cordset: PKG 3Z-*</p>	<p>2</p>  <p>Mating Cordset: PKG 3Z-*</p>	<p>3</p>  <p>Mating Cordset: RK 4T-*</p>	<p>4</p>  <p>Mating Cordset: RK 4T-*</p>
<p>5</p> 	<p>6</p> 	<p>7</p>  <p>Mating Cordset: RKC 4.4T-*</p>	

A13 3-wire DC - Magnetic (AN, RN, AP, RP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA;</p> <p>Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>

Additional Specifications
Magnetic Actuation Strength (Gauss): 20-350

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-UNR


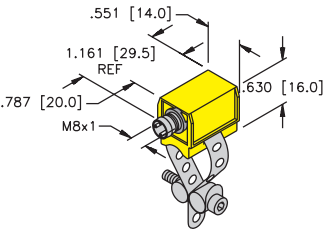
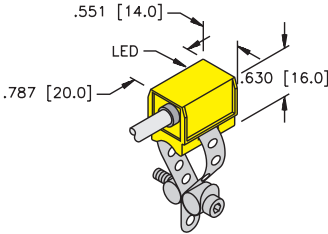
## C-groove Cylinder Style

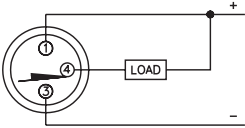
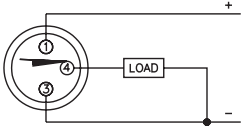
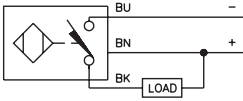
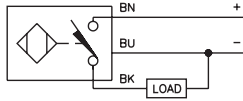
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-UNR-AN6X-0.3-PSG3S W/M 4685848	Fixed Coupling Nut	3-wire DC, NPN	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	0.3M/TPU	A	1	A13
BIM-UNR-AP6X-0.3-PSG3S W/M 4685843	Fixed Coupling Nut	3-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	0.3M/TPU	A	2	A13
BIM-UNR-AN6X-0.3-RS4 W/M 4685850		3-wire DC, NPN	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	0.3M/TPU	C	3	A13
BIM-UNR-AP6X-0.3-RS4 W/M 4685845		3-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	0.3M/TPU	C	4	A13
BIM-UNR-AN6X W/M 4685847		3-wire DC, NPN	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	2M/TPU	B	5	A13
BIM-UNR-AP6X W/M 4685842		3-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	2M/TPU	B	6	A13
BIM-UNR-2AP6X-0.2-RSC4.4T 4685899	Dual Switch	4-wire DC, PNP	10-30 VDC	300	≤ 100	-25 to +70	IP67	PP	0.2M/TPU	D	7	A13

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-PST ○

## Round Cylinder Style

Housing Style	Dimension Drawings	
	<p>A</p>  <p>KST - Picofast Quick Disconnect</p>	<p>B</p>  <p>KST - Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets			
<p>1</p>  <p>Mating Cordset: PKG 3Z-*</p>	<p>2</p>  <p>Mating Cordset: PKG 3Z-*</p>	<p>3</p> 	<p>4</p> 

A13 3-wire DC - Magnetic (AN, RN, AP, RP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA;</p> <p>Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>

Additional Specifications
Magnetic Actuation Strength (Gauss): 20-350

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-PST


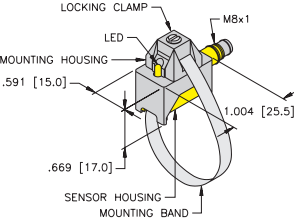
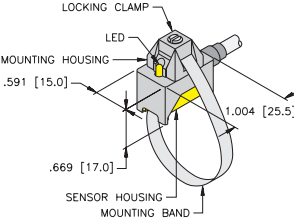
## Round Cylinder Style

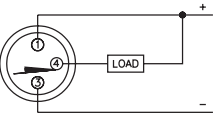
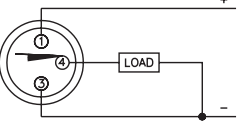
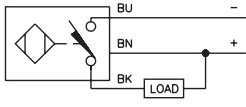
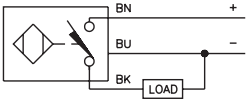
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-PST-AN6X-V1131 W/KLP80 4625190	KLP80 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	--	A	1	A13
BIM-PST-AP6X-V1131 W/KLP80 4625090	KLP80 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	--	A	2	A13
BIM-PST-AN6X W/KLP80 4624191	KLP80 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	2M/PVC	B	3	A13
BIM-PST-AP6X W/KLP80 4624090	KLP80 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	2M/PVC	B	4	A13

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-KST ○

## Round Cylinder Style

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>KST - Picofast Quick Disconnect</p>	<p><b>B</b></p>  <p>KST - Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>2</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>3</b></p> 	<p><b>4</b></p> 

A13		3-wire DC - Magnetic (AN, RN, AP, RP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA;</p> <p>Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>	

Additional Specifications	
Magnetic Actuation Strength (Gauss): 20-350	

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-KST

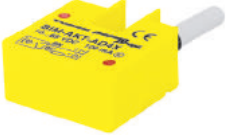
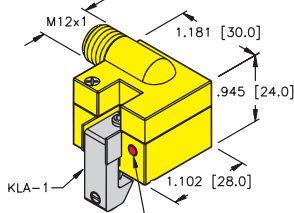
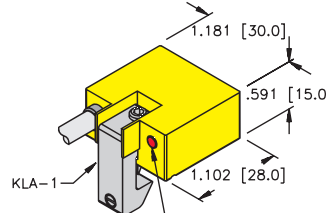
## Round Cylinder Style

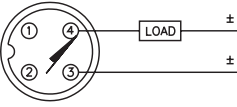
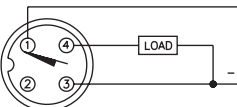
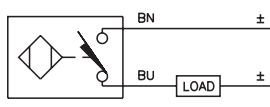
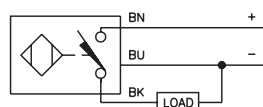
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-KST-AN6X-V1131 46743	KST SB170 and KST SB335 Straps Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	A	1	A13
BIM-KST-AP6X-V1131 46742	KST SB170 and KST SB335 Straps Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	A	2	A13
BIM-KST-AN6X 46741	KST SB170 and KST SB335 Straps Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	2M/ PVC	B	3	A13
BIM-KST-AP6X 46740	KST SB170 and KST SB335 Straps Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	2M/ PVC	B	4	A13

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-AKT

## Tie-rod Cylinder Style

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>AKT - Eurofast Connector</p>	<p><b>B</b></p>  <p>AKT - Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p>  <p>Mating Cordset: RK 4.2T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>3</b></p> 	<p><b>4</b></p> 

A13	3-wire DC - Magnetic (AN, RN, AP, RP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA;</p> <p>Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>
A14	2-wire DC - Magnetic (AD, AG)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: Non-Polarized (AD) <math>\leq 4</math> V  Polarized (AG) <math>\leq 3.5</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 120</math> mA</p> <p>Pass Speed: <math>\leq 3</math> ms, <math>\leq 10</math> ms (UNT)</p>		<p>Off-State (Leakage) Current: <math>\leq 0.8</math> mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm</p>

Additional Specifications
<b>Magnetic Actuation Strength (Gauss): 20-350</b>

We reserve the right to make technical alterations without prior notice.



# Cylinder Position Sensors | BIM-AKT

## Tie-rod Cylinder Style


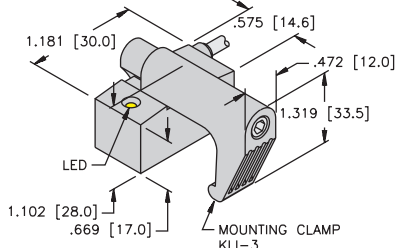
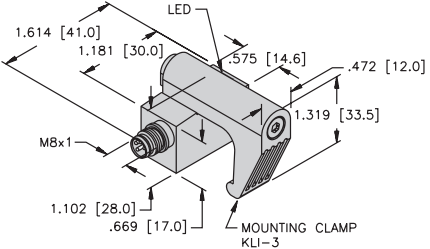
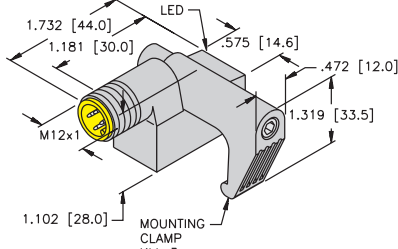
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-AKT-AD4X-H1141 W/KLA1 4480290	KLA1 Included	2-wire DC	10-65 VDC	300	≤ 100	-25 to +70	IP67	PA 12	--	A	1	A14
BIM-AKT-AP6X-H1141 W/KLA1 4675290	KLA1 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	--	A	2	A13
BIM-AKT-AD4X W/KLA1 4480090	KLA1 Included	2-wire DC	10-65 VDC	300	≤ 100	-25 to +70	IP67	PA 12	2M/PVC	B	3	A14
BIM-AKT-AP6X W/KLA1 4675090	KLA1 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	2M/PVC	B	4	A13

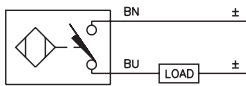
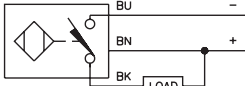
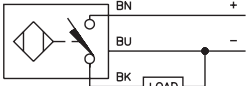
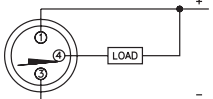
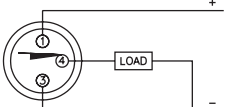
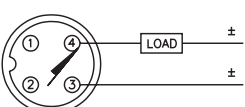
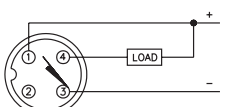
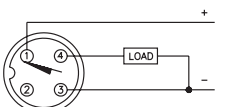
We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-IKE/IKT



## Tie-rod Cylinder Style

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>IKE/IKT - Potted-In Cable</p>
<p><b>B</b></p>  <p>IKE/IKT - Picofast Quick Disconnect</p>	<p><b>C</b></p>  <p>IKE/IKT - Eurofast Quick Disconnect</p>

Wiring Diagrams/Mating Cordsets			
<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 	<p><b>4</b></p>  <p>Mating Cordset: PKG 3Z-*</p>
<p><b>5</b></p>  <p>Mating Cordset: PKG 3Z-*</p>	<p><b>6</b></p>  <p>Mating Cordset: RK 4.2T-*</p>	<p><b>7</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>8</b></p>  <p>Mating Cordset: RK 4T-*</p>

A13 3-wire DC - Magnetic (AN, RN, AP, RP)		A14 2-wire DC - Magnetic (AD, AG)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): ≤1 mm</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA;</p> <p>Pass Speed: ≤10 ms; ≤3 ms (UNR)</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤0.1 mm, ≤0.3 mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≥± 0.1 mm, ≥± 0.3 mm (UNR)</p>		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): ≤1 mm</p> <p>Voltage Drop Across Conducting Sensor: Non-Polarized (AD) ≤4 V Polarized (AG) ≤3.5 V</p> <p>Trigger Current for Short Circuit Protection: ≥120 mA</p> <p>Pass Speed: ≤3 ms, ≤10 ms (UNT)</p>	<p>Off-State (Leakage) Current: ≤0.8 mA</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≥± 0.1 mm</p>		

Additional Specifications
Magnetic Actuation Strength (Gauss): 20-350

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-IKE/IKT

## Tie-rod Cylinder Style


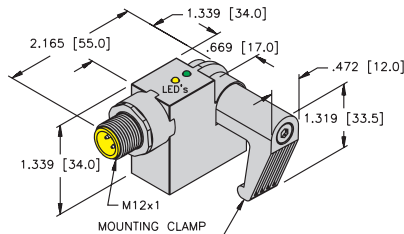
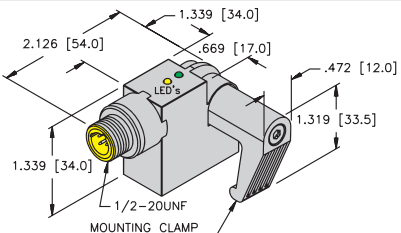
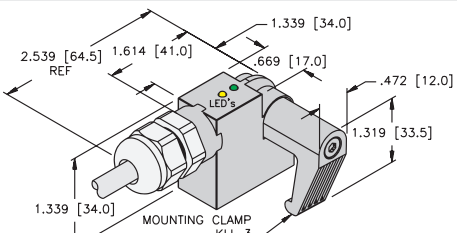
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
BIM-IKE-AD4X W/KLI3 4421490	KLI3 Included	2-wire DC	10-65 VDC	300	≤ 100	-25 to +70	IP67	Zinc	2M/PVC	A	1	A14
BIM-IKT-AD4X W/KLI3 4482090	KLI3 Included	2-wire DC	10-65 VDC	300	≤ 100	-25 to +70	IP67	Zinc	2M/PVC	A	1	A14
BIM-IKE-AN6X W/KLI3 4621590	KLI3 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	2M/PVC	A	2	A13
BIM-IKT-AN6X W/KLI3 4620190	KLI3 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	2M/PVC	A	2	A13
BIM-IKE-AP6X W/KLI3 4621490	KLI3 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	2M/PVC	A	3	A13
BIM-IKT-AP6X W/KLI3 4620090	KLI3 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	2M/PVC	A	3	A13
BIM-IKE-AN6X-V1131 W/KLI3 4621795	KLI3 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	B	4	A13
BIM-IKT-AN6X-V1131 W/KLI3 4622195	KLI3 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	B	4	A13
BIM-IKE-AP6X-V1131 W/KLI3 4621695	KLI3 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	B	5	A13
BIM-IKT-AP6X-V1131 W/KLI3 4622095	KLI3 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	B	5	A13
BIM-IKE-AD4X-H1141 W/KLI3 4421690	KLI3 Included	2-wire DC	10-65 VDC	300	≤ 100	-25 to +70	IP67	Zinc	--	C	6	A14
BIM-IKT-AD4X-H1141 W/KLI3 4482290	KLI3 Included	2-wire DC	10-65 VDC	300	≤ 100	-25 to +70	IP67	Zinc	--	C	6	A14
BIM-IKE-AN6X-H1141 W/KLI3 4621790	KLI3 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	C	7	A13
BIM-IKT-AN6X-H1141 W/KLI3 4621190	KLI3 Included	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	C	7	A13
BIM-IKE-AP6X-H1141 W/KLI3 4621690	KLI3 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	C	8	A13
BIM-IKT-AP6X-H1141 W/KLI3 4621090	KLI3 Included	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	Zinc	--	C	8	A13

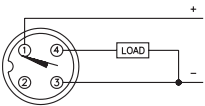
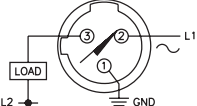
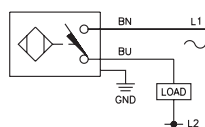
We reserve the right to make technical alterations without prior notice.





Tie-rod Cylinder Style

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>IKM - Eurofast Connector</p>
<p><b>B</b></p>  <p>IKM - Microfast® Connector</p>	<p><b>C</b></p>  <p>IKM - Potted-In Cable</p>

Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: KB 3T-*</p>	<p><b>3</b></p> 

A13 3-wire DC - Magnetic (AN, RN, AP, RP)	
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): ≤1 mm</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection:                      ≥220 mA on 200 mA Load Current                      ≥170 mA on 150 mA Load Current                      ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA;</p> <p>Pass Speed: ≤10 ms; ≤3 ms (UNR)</p>	<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤0.1 mm, ≤0.3 mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≥± 0.1 mm, ≥± 0.3 mm (UNR)</p>

A15 2-wire AC w/o Short-Circuit Protection - Magnetic (AZ)	
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): ≤1 mm</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Continuous Load Current: AC: ≤500 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA</p> <p>Minimum Load Current: ≥5.0 mA</p>	<p>Pass Speed: ≤1 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≥± 0.1 mm</p>

Additional Specifications
Magnetic Actuation Strength (Gauss): 20-350

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-IKM


## Tie-rod Cylinder Style

Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>BIM-IKM-AP6X2-H1 141/S34 W/KLI3</b> 4627290	KLI3 Included, WFI	3-wire DC, PNP	10-30 VDC	20	≤ 200	-25 to +70	IP67	Zinc	--	A	1	A13
<b>BIM-IKM-AZ3X2-B3131 W/KLI3</b> 1347190	KLI3 Included	2-wire AC	20-250 VAC	20	≤ 500	-25 to +70	IP67	Zinc	--	B	2	A15
<b>BIM-IKM-AZ3X2 W/KLI3</b> 1347290	KLI3 Included	2-wire AC	20-250 VAC	20	≤ 500	-25 to +70	IP67	Zinc	2M/PVC	C	3	A15

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-NST

## T-groove or Slot Style

Housing Style		Dimension Drawings	
		A	<p>NST - Picofast Connector</p>
		B	<p>NST - Picofast Connector</p>
		C	<p>NST - Potted-In Cable</p>
		<h3>Wiring Diagrams/Mating Cordsets</h3>	
1	2	3	4
<p>Mating Cordset: PKG 3Z-*</p>	<p>Mating Cordset: RK 4T-*</p>	<p>Mating Cordset: RK 4T-*</p>	<p>Mating Cordset: BK, BU, BN</p>
<h3>A13 3-wire DC - Magnetic (AN, RN, AP, RP)</h3>			
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): <math>\leq 1</math> mm</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8</math> V</p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220</math> mA on 200 mA Load Current  <math>\geq 170</math> mA on 150 mA Load Current  <math>\geq 120</math> mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1</math> mA</p> <p>No-Load Current: <math>\leq 15</math> mA;</p> <p>Pass Speed: <math>\leq 10</math> ms; <math>\leq 3</math> ms (UNR)</p>		<p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq 0.1</math> mm, <math>\leq 0.3</math> mm (UNR)</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\geq \pm 0.1</math> mm, <math>\geq \pm 0.3</math> mm (UNR)</p>	
<h3>Additional Specifications</h3> <p>Magnetic Actuation Strength (Gauss): 20-350</p>			

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | BIM-NST


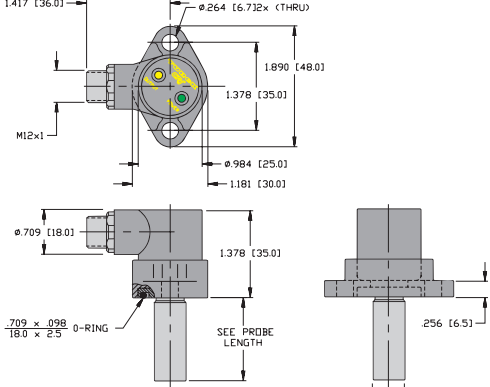
## T-groove or Slot Style

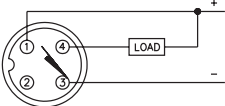
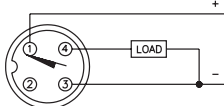
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>BIM-NST-AP6X-V1131</b> 4685800	w/o Bracket	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	--	A	1	A13
<b>BIM-NST-AN6X-H1141</b> 4685500	w/o Bracket	3-wire DC, NPN	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	--	B	2	A13
<b>BIM-NST-AP6X-H1141/S34</b> 4685401	w/o Bracket, WFI	3-wire DC, PNP	10-30 VDC	20	≤ 200	-25 to +70	IP67	PA 12	--	B	3	A13
<b>BIM-NST-AP6X-H1141</b> 4685400	w/o Bracket	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	--	B	3	A13
<b>BIM-NST-AP6X</b> 4685600	w/o Bracket	3-wire DC, PNP	10-30 VDC	1000	≤ 200	-25 to +70	IP67	PA 12	2M/PVC	C	4	A13

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | CRS

## In-Cylinder Position Sensors

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="1052 714 1247 735">CRS - Eurofast Connector</p>

Wiring Diagrams/Mating Cordsets	
<p data-bbox="105 808 121 829">1</p>  <p data-bbox="354 924 544 945">Mating Cordset: RK 4T-*</p>	<p data-bbox="808 808 824 829">2</p>  <p data-bbox="1055 924 1245 945">Mating Cordset: RK 4T-*</p>

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 1018 535 1039">Ripple: <math>\leq 10\%</math></p> <p data-bbox="215 1045 641 1066">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="131 1073 544 1094">Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p data-bbox="110 1100 763 1184">Trigger Current for Short Circuit Protection:  <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p data-bbox="233 1190 560 1211">Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p data-bbox="318 1218 678 1239">No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)</p> <p data-bbox="483 1245 698 1266"><math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p data-bbox="891 1018 1218 1039">Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p data-bbox="1000 1045 1284 1066">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="915 1073 1268 1094">Reverse Polarity Protection: Incorporated</p> <p data-bbox="954 1100 1268 1121">Wire-Break Protection: Incorporated</p> <p data-bbox="967 1127 1300 1148">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="987 1155 1224 1176">Temperature Drift: <math>\leq \pm 10\%</math></p> <p data-bbox="1081 1182 1255 1203">Shock: 30 g, 11 ms</p> <p data-bbox="1057 1209 1458 1230">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1024 1236 1425 1257">Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

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# Cylinder Position Sensors | CRS

## In-Cylinder Position Sensors


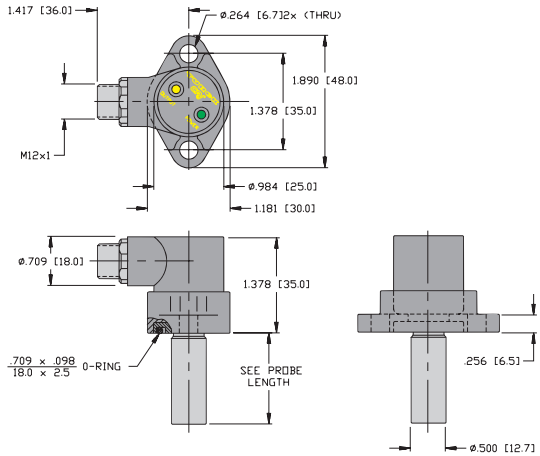
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-CRS260-AN4X2-H1141/S34 4580004	WFI; 1,500 PSI Operating	3-wire DC, NPN	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	1	A4
Bi2-CRS317-AN4X2-H1141/S34 4580093	WFI; 1,500 PSI Operating	3-wire DC, NPN	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	1	A4
Bi2-CRS343-AN4X2-H1141/S34 4571890	WFI; 1,500 PSI Operating	3-wire DC, NPN	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	1	A4
Bi2-CRS524-AN4X2-H1141/S34 4568096	WFI; 1,500 PSI Operating	3-wire DC, NPN	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	1	A4
Bi2-CRS232-AP4X2-H1141/S34 4570492	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS260-AP4X2-H1141/S34 4570890	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS287-AP4X2-H1141/S34 4571290	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS317-AP4X2-H1141/S34 4571690	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS343-AP4X2-H1141/S34 4571800	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS476-AP4X2-H1141/S34 4580091	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS524-AP4X2-H1141/S34 4580090	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS603-AP4X2-H1141/S34 4580096	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS705-AP4X2-H1141/S34 4580089	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS730-AP4X2-H1141/S34 4580003	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS959-AP4X2-H1141/S34 4571891	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi2-CRS1159-AP4X2-H1141/S34 4570899	WFI; 1,500 PSI Operating	3-wire DC, PNP	10-65 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi1.5-CRS524C-AP6X2-H1141 4279091	High Pressure; 3,000 PSI Operating	3-wire DC, PNP	10-30 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4
Bi1.5-CRS260C-AP6X2-H1141 4279092	High Pressure; 3,000 PSI Operating	3-wire DC, PNP	10-30 VDC	30	≤ 200	-25 to +70	IP67	Zinc	A	2	A4

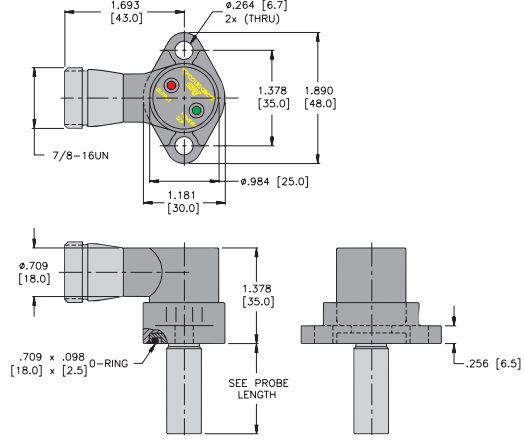
We reserve the right to make technical alterations without prior notice.

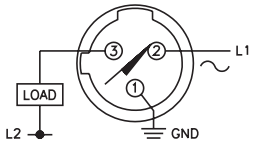
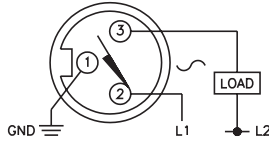
Bi \*-CRS-XXXX-.. = Length of probe in mm. Example: CRS260 = 26.0 mm

# Cylinder Position Sensors | CRS

## In-Cylinder Position Sensors

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>CRS - Microfast Connector</p>

<p><b>B</b></p>  <p>CRS - Minifast® Connector</p>	
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Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: KB 3T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RKM 311-*M</p>

A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50... \leq 60</math> Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0</math> V</p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440</math> mA; DC: <math>\geq 330</math> mA</p> <p>AC: <math>\geq 120</math> mA; DC: <math>\geq 120</math> mA</p> <p>Continuous Load Current: AC: <math>\leq 400</math> mA; DC: <math>\leq 300</math> mA</p> <p>AC: <math>\leq 100</math> mA; DC: <math>\leq 100</math> mA</p> <p>Off-State (Leakage) Current: <math>\leq 1.7</math> mA (AC)</p> <p><math>\leq 1.5</math> mA (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0</math> mA</p> <p>Inrush Current: <math>\leq 3</math> A (<math>\leq 20</math> ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | CRS

## In-Cylinder Position Sensors

Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Dimension Drawings	Wiring Diagrams	Spec List
Bi2-CRS232-ADZ30X2-B3131/S34 4275093	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS260-ADZ30X2-B3131/S34 4275493	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS317-ADZ30X2-B3131/S34 4276293	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS476-ADZ30X2-B3131/S34 4276693	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS524-ADZ30X2-B3131/S34 4277093	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS730-ADZ30X2-B3131/S34 4278293	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS959-ADZ30X2-B3131/S34 4279093	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS1159-ADZ30X2-B3131/S34 4279493	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	A	1	A5
Bi2-CRS232-ADZ30X2-B1131/S34 4270093	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS260-ADZ30X2-B1131/S34 4270493	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS317-ADZ30X2-B1131/S34 4271293	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS343-ADZ30X2-B1131/S34 4271493	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS476-ADZ30X2-B1131/S34 4271693	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS524-ADZ30X2-B1131/S34 4272093	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS603-ADZ30X2-B1131/S34 4272493	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS705-ADZ30X2-B1131/S34 4272893	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS730-ADZ30X2-B1131/S34 4273293	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS959-ADZ30X2-B1131/S34 4274093	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi2-CRS1159-ADZ30X2-B1131/S34 4274493	WFI; 1,500 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi1.5-CRS959C-ADZ30X2-B1131 4279094	High Pressure; 3,000 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi1.5-CRS730C-ADZ30X2-B1131 4279095	High Pressure; 3,000 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi1.5-CRS260C-ADZ30X2-B1131 4279096	High Pressure; 3,000 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi1.5-CRS232C-ADZ30X2-B1131 4279097	High Pressure; 3,000 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi1.5-CRS524C-ADZ30X2-B1131 4279098	High Pressure; 3,000 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5
Bi1.5-CRS317C-ADZ30X2-B1131 4279099	High Pressure; 3,000 PSI Operating	2-wire AC/DC	20-250 VAC/10-300 VDC	20	≤ 400/300	-25 to +70	IP67	Zinc	B	2	A5


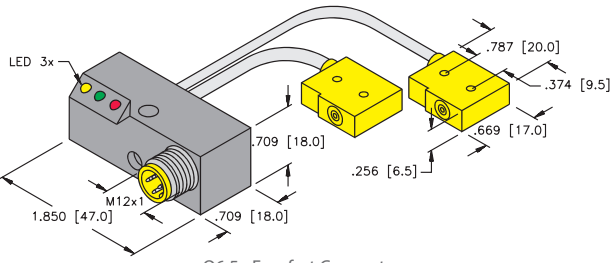
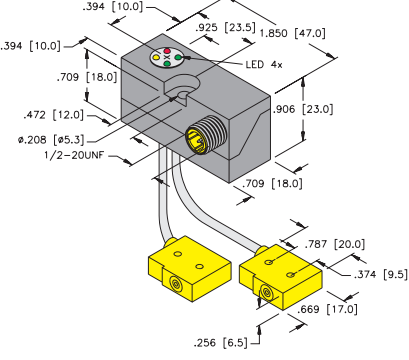
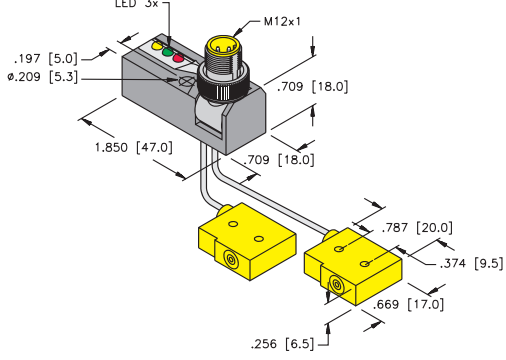
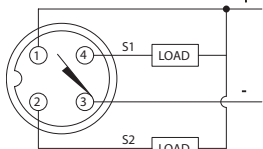
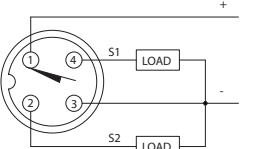
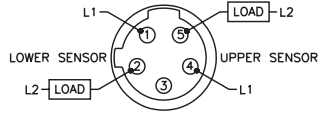
We reserve the right to make technical alterations without prior notice.

Cylinder Position Sensors

Bi \*-CRS-XXXX-. = Length of probe in mm. Example: CRS260 = 26.0 mm

# Cylinder Position Sensors | Q6.5

## Power Clamp Position Sensors

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>Q6.5 - Eurofast Connector</p>	
<p><b>B</b></p>  <p>Q6.5 - Microfast Connector</p>	<p><b>C</b></p>  <p>Q6.5 - Eurofast Connector</p>	
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>3</b></p>  <p>Mating Cordset: KB 5T-*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)		
<p>Ripple: ≤10%</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p>Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current ≥170 mA on 150 mA Load Current ≥120 mA on 100 mA Load Current</p> <p>Off-State (Leakage) Current: ≤0.1 mA</p> <p>No-Load Current: ≤15 mA (Ferrite, Uprox) ≤20 mA (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: ≤8 ms</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: ≤±10%</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)		
<p>Line Frequency: ≥50... ≤60 Hz</p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: ≤6.0 V</p> <p>Trigger Current for Short Circuit Protection: AC: ≥440 mA; DC: ≥330 mA AC: ≥120 mA; DC: ≥120 mA</p> <p>Continuous Load Current: AC: ≤400 mA; DC: ≤300 mA AC: ≤100 mA; DC: ≤100 mA</p> <p>Off-State (Leakage) Current: ≤1.7 mA (AC) ≤1.5 mA (DC)</p>	<p>Minimum Load Current: ≥3.0 mA</p> <p>Inrush Current: ≤3 A (≤20 ms, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: ≤2% of Rated Operating Distance</p>	

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | Q6.5


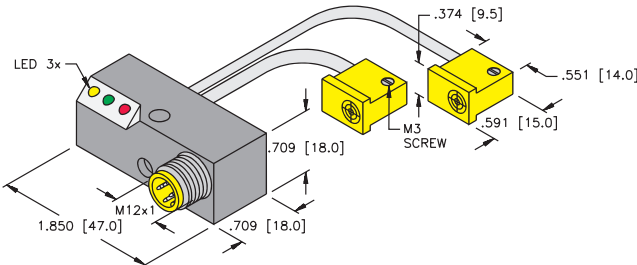
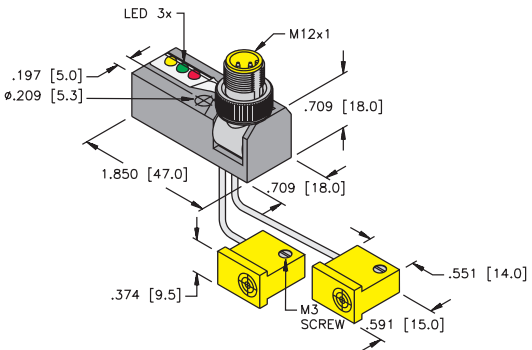
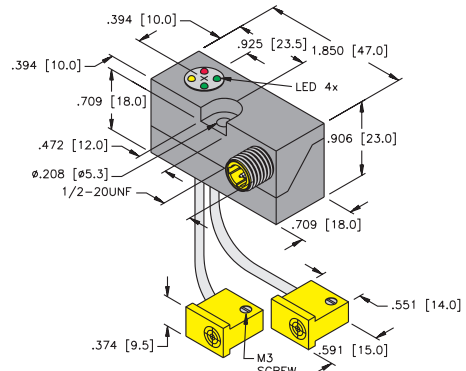
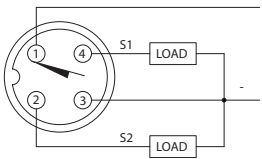
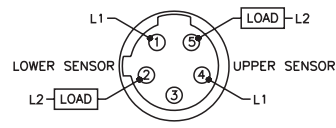
## Power Clamp Position Sensors

Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni2-Q6.5-AN6-0.1-FS4.4X3/S304 1650079		4-wire DC, NPN	10-30 VDC	30	≤ 500	-25 to +70	IP67	PBT	0.1M/TPU	A	1	A4
Ni2-Q6.5-AN6-0.16-FS4.4X3/S304 1650085		4-wire DC, NPN	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.16M/TPU	A	1	A4
Ni2-Q6.5-AP6-0.1-FS4.4X3/S304 1650048		4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.1M/TPU	A	2	A4
Ni2-Q6.5-AP6-0.16-FS4.4X3/S304 1650086		4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.16M/TPU	A	2	A4
Ni2-Q6.5-AP6-0.2-FS4.4X3/S304 1650047		4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.2M/TPU	A	2	A4
Ni2-Q6.5-0.1-BDS-2AP6X3-H1141/S34 1650098	WFI	4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.1M/TPU	C	2	A4
Ni2-Q6.5-0.16-BDS-2AP6X3-H1141/S34 1650110	WFI	4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.16M/TPU	C	2	A4
Ni2-Q6.5-ADZ32-0.1-FSB5.4X4/S304 4200204		4-wire, VAC/DC	20-250 VAC/10-300 VDC	30	≤ 100	-25 to +70	IP67	PBT	0.1M/TPU	B	3	A5
Ni2-Q6.5-ADZ32-0.16-FS 5.4X4/S304 4200203		4-wire, VAC/DC	20-250 VAC/10-300 VDC	30	≤ 100	-25 to +70	IP67	PBT	0.16M/TPU	B	3	A5

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | Q9.5

## Power Clamp Position Sensors

Housing Style	Dimension Drawings
	<p><b>A</b></p>  <p>Q9.5 - Eurofast Connector</p>
<p><b>B</b></p>  <p>Q9.5 - Eurofast Connector</p>	<p><b>C</b></p>  <p>Q9.5 - Microfast Connector</p>
Wiring Diagrams/Mating Cordsets	
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	<p><b>2</b></p>  <p>Mating Cordset: KB 5T-*</p>
A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p>Ripple: <math>\leq 10\%</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 1.8\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: <math>\geq 220\text{ mA}</math> on 200 mA Load Current  <math>\geq 170\text{ mA}</math> on 150 mA Load Current  <math>\geq 120\text{ mA}</math> on 100 mA Load Current</p> <p>Off-State (Leakage) Current: <math>\leq 0.1\text{ mA}</math></p> <p>No-Load Current: <math>\leq 15\text{ mA}</math> (Ferrite, Uprox)  <math>\leq 20\text{ mA}</math> (Uprox+, Uprox 3)</p>	<p>Time Delay Before Availability: <math>\leq 8\text{ ms}</math></p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Incorporated</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Temperature Drift: <math>\leq \pm 10\%</math></p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>
A5 2-wire AC/DC w/ Short-Circuit Protection - (ADZ, RDZ, FDZ, VDZ)	
<p>Line Frequency: <math>\geq 50\text{...} \leq 60\text{ Hz}</math></p> <p>Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p>Voltage Drop Across Conducting Sensor: <math>\leq 6.0\text{ V}</math></p> <p>Trigger Current for Short Circuit Protection: AC: <math>\geq 440\text{ mA}</math>; DC: <math>\geq 330\text{ mA}</math>  AC: <math>\geq 120\text{ mA}</math>; DC: <math>\geq 120\text{ mA}</math></p> <p>Continuous Load Current: AC: <math>\leq 400\text{ mA}</math>; DC: <math>\leq 300\text{ mA}</math>  AC: <math>\leq 100\text{ mA}</math>; DC: <math>\leq 100\text{ mA}</math></p> <p>Off-State (Leakage) Current: <math>\leq 1.7\text{ mA}</math> (AC)  <math>\leq 1.5\text{ mA}</math> (DC)</p>	<p>Minimum Load Current: <math>\geq 3.0\text{ mA}</math></p> <p>Inrush Current: <math>\leq 3\text{ A}</math> (<math>\leq 20\text{ ms}</math>, max 5 Hz)</p> <p>Power-On Effect: Per IEC 947-5-2</p> <p>Transient Protection: Per EN 60947-5-2</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p>Repeatability: <math>\leq 2\%</math> of Rated Operating Distance</p>

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | Q9.5


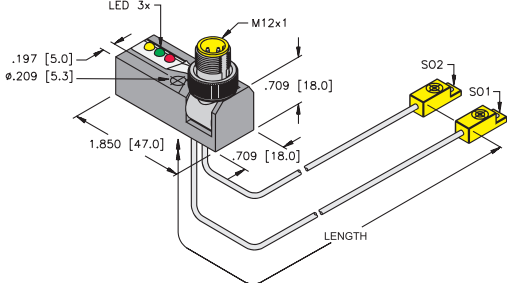
## Power Clamp Position Sensors

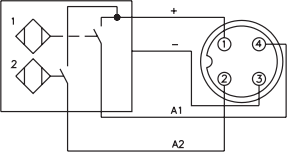
Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni2-Q9.5-AP6-0.1-FS4.4X3/S304 1650060		4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.1M/TPU	A	1	A4
Ni2-Q9.5-0.1-BDS-2AP6X3-H1141/S34 1650099	WFI	4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.1M/TPU	B	1	A4
Ni2-Q9.5-ADZ32-0.1-FSB5.4X4/S304 4200210		4-wire, VAC/DC	20-250 VAC/10-300 VDC	20	≤ 100	-25 to +70	IP67	PBT	0.1M/TPU	C	2	A5

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | ISI

## Power Clamp Position Sensors

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="1062 600 1240 621">ISI - Eurofast Connector</p>

Wiring Diagrams/Mating Cordsets	
<p data-bbox="103 688 120 709">1</p>  <p data-bbox="699 856 899 877">Mating Cordset: RK 4.4T-*</p>	

A4 3 and 4-wire DC - (AN, RN, AP, RP, VN, VP)	
<p data-bbox="402 951 537 972">Ripple: ≤10%</p> <p data-bbox="215 978 639 999">Differential Travel (Hysteresis): 3-15% (5% typical)</p> <p data-bbox="134 1005 542 1026">Voltage Drop Across Conducting Sensor: ≤1.8 V</p> <p data-bbox="110 1033 764 1054">Trigger Current for Short Circuit Protection: ≥220 mA on 200 mA Load Current</p> <p data-bbox="183 1060 764 1081">≥170 mA on 150 mA Load Current</p> <p data-bbox="183 1087 764 1108">≥120 mA on 100 mA Load Current</p> <p data-bbox="232 1115 558 1136">Off-State (Leakage) Current: ≤0.1 mA</p> <p data-bbox="321 1142 678 1163">No-Load Current: ≤15 mA (Ferrite, Uprox)</p> <p data-bbox="483 1169 699 1190">≤20 mA (Uprox+, Uprox 3)</p>	<p data-bbox="889 951 1219 972">Time Delay Before Availability: ≤8 ms</p> <p data-bbox="1003 978 1284 999">Power-On Effect: Per IEC 947-5-2</p> <p data-bbox="914 1005 1268 1026">Reverse Polarity Protection: Incorporated</p> <p data-bbox="954 1033 1268 1054">Wire-Break Protection: Incorporated</p> <p data-bbox="971 1060 1300 1081">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="987 1087 1224 1108">Temperature Drift: ≤±10%</p> <p data-bbox="1084 1115 1252 1136">Shock: 30 g, 11 ms</p> <p data-bbox="1060 1142 1458 1163">Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p data-bbox="1027 1169 1425 1190">Repeatability: ≤2% of Rated Operating Distance</p>

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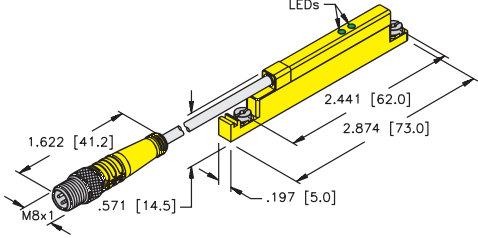
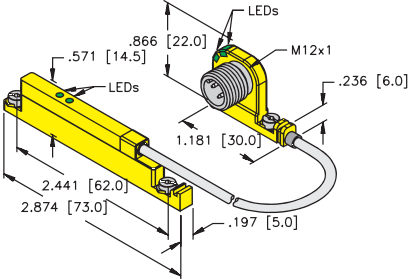
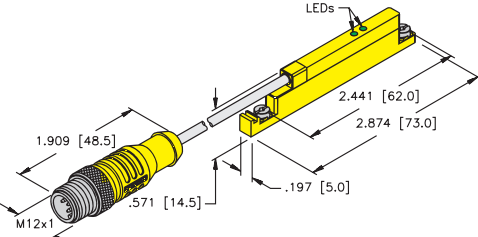
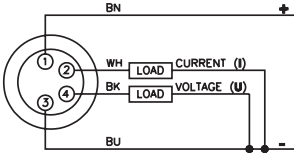
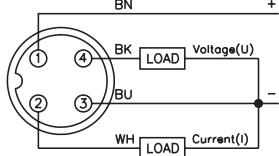
# Cylinder Position Sensors | ISI

## Power Clamp Position Sensors

Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA)	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
Ni2-ISI-0.1-BDS-2AP6X3-H1141/S34 1650133	WFI	4-wire DC, PNP	10-30 VDC	30	≤ 150	-25 to +70	IP67	PBT	0.1M/TPU	A	1	A4

We reserve the right to make technical alterations without prior notice.

Power Clamp Position Sensors

Housing Style	Dimension Drawings	
	<p><b>A</b></p>  <p>23 mm - Embeddable, T-groove Pneumatic Cylinders Picofast Quick Disconnect</p>	
<p><b>B</b></p>  <p>23 mm - Embeddable, T-groove Pneumatic Cylinders Eurofast Quick Disconnect</p>	<p><b>C</b></p>  <p>23 mm - Embeddable, T-groove Pneumatic Cylinders Eurofast Quick Disconnect</p>	
Wiring Diagrams/Mating Cordsets		
<p><b>1</b></p>  <p>Mating Cordset: RK 4.4T-*, PKG 4M-*</p>	<p><b>2</b></p>  <p>Mating Cordset: RK 4.4T-*</p>	
A7 3 and 4-wire DC Analog - (LIU, SIU)		
<p>Ripple: <math>\leq 10\%</math>                  No-Load Current: <math>\leq 8.0</math> mA                  Load Resistance Voltage Output: <math>0-10 V/R_L \geq 4.7</math> k<math>\Omega</math>                  Load Resistance Current Output: <math>0-20</math> mA/<math>R_L \leq 0.4</math> k<math>\Omega</math>                  Temperature Drift: <math>\pm 0.06\%</math> / <math>^{\circ}\text{C}</math>                  LIU5: 4-20 mA, 0-10 V                  LIU2: 4-20 mA, 2-10 V</p>	<p>Transient Protection: Per EN 60947-5-2                  Shock: 30 g, 11 ms                  Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes                  Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)                  Short-Circuit Protection: Yes                  Reverse Polarity Protection: Incorporated</p>	
A8 3 and 4-wire DC Analog - (LU)		
<p>Ripple: <math>\leq 10\%</math>                  No-Load Current: <math>\leq 8.0</math> mA                  Load Resistance Voltage Output: <math>0-10 V/R_L \geq 4.7</math> k<math>\Omega</math>                  Temperature Drift: <math>\pm 0.06\%</math> / <math>^{\circ}\text{C}</math>                  Reverse Polarity Protection: Incorporated                  Transient Protection: Per EN 60947-5-2</p>	<p>Short-Circuit Protection: Yes                  Wire-Break Protection: Yes                  Shock: 30 g, 11 ms                  Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes                  Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p>	

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# Cylinder Position Sensors | WIM

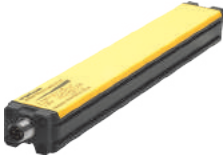
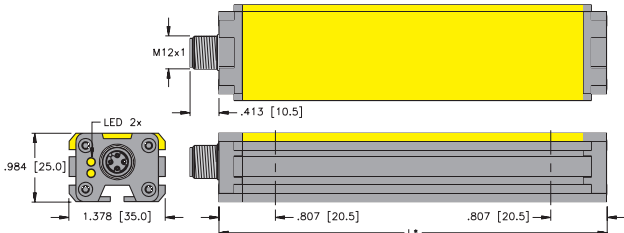
## Power Clamp Position Sensors

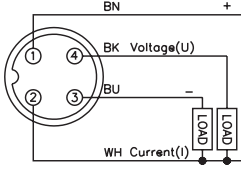
Part Number/ ID Number	Linear Operating Distance (mm)	Resolution	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Housing	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
WIM45-UNTLLIU5X2-0.3-PSG4M 1536620	45	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	PA 12	0.3M/TPU	A	1	A7
WIM45-UNTLL-0.3-BIM-UNT-LUAP6X4-H1141 1536623	45	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	PA 12	0.3M/TPU	B	2	A8
WIM45-UNTLLIU5X2-0.3-RS4 1536621	45	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	PA 12	0.3M/TPU	C	1	A7

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | WIM

## Magnetic Linear Position Sensors

Housing Style	Dimension Drawings
	<p data-bbox="808 310 824 331">A</p>  <p data-bbox="961 571 1341 592">25 mm - Embeddable, Eurofast Quick Disconnect</p>

Wiring Diagrams/ Mating Cordset	
<p data-bbox="105 667 121 688">1</p>  <p data-bbox="701 856 896 877">Mating Cordset: RK 4.4T-*</p>	

A7 3 and 4-wire DC Analog - (LIU, SIU)	
<p data-bbox="386 951 516 972">Ripple: <math>\leq 10\%</math></p> <p data-bbox="305 978 539 999">No-Load Current: <math>\leq 8.0 \text{ mA}</math></p> <p data-bbox="181 1005 610 1026">Load Resistance Voltage Output: <math>0-10 \text{ V/R}_L \geq 4.7 \text{ k}\Omega</math></p> <p data-bbox="181 1033 626 1054">Load Resistance Current Output: <math>0-20 \text{ mA/R}_L \leq 0.4 \text{ k}\Omega</math></p> <p data-bbox="295 1060 565 1081">Temperature Drift: <math>\pm 0.06\% / ^\circ\text{C}</math></p> <p data-bbox="402 1087 594 1108">LIU5: 4-20 mA, 0-10 V</p> <p data-bbox="402 1115 594 1136">LIU2: 4-20 mA, 2-10 V</p>	<p data-bbox="971 951 1308 972">Transient Protection: Per EN 60947-5-2</p> <p data-bbox="1084 978 1260 999">Shock: 30 g, 11 ms</p> <p data-bbox="1058 1005 1464 1026">Vibration: 55 Hz, 1 mm Amplitude, in all 3 Planes</p> <p data-bbox="1026 1033 1399 1085">Repeatability: <math>\leq 1\%</math> of measuring range  A-B  (0.5% after 30 min. warm up)</p> <p data-bbox="945 1092 1195 1113">Short-Circuit Protection: Yes</p> <p data-bbox="919 1119 1276 1140">Reverse Polarity Protection: Incorporated</p>

Additional Specifications
<p data-bbox="613 1218 987 1239">Magnetic Actuation Strength (Gauss): 50-100</p>

For mounting accessories see page G9

We reserve the right to make technical alterations without prior notice.

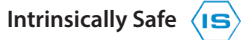
# Cylinder Position Sensors | WIM

## Magnetic Linear Position Sensors

Part Number/ ID Number	Linear Operating Distance (mm)	Resolution	Output	Voltage	Output Voltage/ Current	Operating Temp. (°C)	Protection	Housing	Face	Dimension Drawings	Wiring Diagrams	Spec List
WIM100-Q25L141-LIU5X2-H1141 1536630	100	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	AL	PC-GF20	A	1	A7
WIM125-Q25L166-LIU5X2-H1141 1536631	125	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	AL	PC-GF20	A	1	A7
WIM160-Q25L201-LIU5X2-H1141 1536632	160	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	AL	PC-GF20	A	1	A7
WIM200-Q25L241-LIU5X2-H1141 1536633	200	10 bit	4-wire DC, Current and Voltage	15-30 VDC	0-10 V/4-20 mA	-25 to +70	IP67	AL	PC-GF20	A	1	A7

We reserve the right to make technical alterations without prior notice.

# Cylinder Position Sensors | Namur



## Dimension Drawings

<p><b>A</b></p> <p>UNT - Potted-In Cable</p>	<p><b>B</b></p> <p>INT - Picofast Potted-In Cable</p>
<p><b>C</b></p> <p>INT - Eurofast Quick Disconnect</p>	<p><b>D</b></p> <p>PST - Potted-In Cable</p>
<p><b>E</b></p> <p>AKT - Eurofast Connector</p>	<p><b>F</b></p> <p>AKT - Potted-In Cable</p>
<p><b>G</b></p> <p>NST - Potted-In Cable</p>	<p><b>H</b></p> <p>IKE/IKT - Eurofast Quick Disconnect</p>
<p><b>I</b></p> <p>IKE/IKT - Potted-In Cable</p>	

We reserve the right to make technical alterations without prior notice.

## Wiring Diagrams/Mating Cordsets

<p><b>1</b></p>	<p><b>2</b></p> <p>Mating Cordset: RK 4.21T-*</p>
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**A16**

### 2-wire DC NAMUR - Magnetic (Y0 and Y1)

<p>Differential Travel (Hysteresis): ≤1 mm</p> <p>Nominal Voltage: 8.2 VDC (EN60947-5-6)</p> <p>Load Resistance: 1000 Ω</p> <p>Non-activated Current Consumption: ≤1.2 mA</p> <p>Activated Current Consumption: ≥2.1 mA</p> <p>Recommended Switching Point for Remote Amplifier: &gt;1.2 to &lt;2.1 mA, typ. 1.55 mA ON/1.75 mA OFF</p>	<p>Power-On Effect: Realized in Amplifier</p> <p>Reverse Polarity Protection: Incorporated</p> <p>Wire-Break Protection: Realized in Amplifier</p> <p>Transient Protection: Realized in Amplifier</p> <p>Shock: 30 g, 11 ms</p> <p>Vibration: 55 Hz, 1 mm Amplitude in all 3 Planes</p> <p>Repeatability: ≥± 0.1 mm</p> <p>Pass Speed: ≤10 ms</p>
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### Additional Specifications

Magnetic Actuation Strength (Gauss): 20-350

# Cylinder Position Sensors | Namur

Intrinsically Safe

Part Number/ ID Number	Features	Output	Voltage	Switching Freq. (Hz)	Operating Current (mA) VAC/VDC	Operating Temp. (°C)	Protection	Housing	Power LED	Output LED	Cable Length/Jacket	Dimension Drawings	Wiring Diagrams	Spec List
<b>BIM-UNT-AY1X/S1139</b> 4685763	Wider Range	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	2M/ PVC	A	1	A16
<b>BIM-INT-Y1X</b> 1056800		2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	2M/ PVC	B	1	A16
<b>BIM-INT-Y1X-0.2-RS4.21T</b> 1056892		2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	0.2M/ PVC	C	2	A16
<b>BIM-PST-Y1X W/KLP80</b> 1057090	KLP80 Included	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	2M/ PVC	D	1	A16
<b>BIM-AKT-Y1X-H1141 W/KLA1</b> 1055290	KLA1 Included	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	--	E	2	A16
<b>BIM-AKT-Y1X W/KLA1</b> 1055090	KLA1 Included	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	2M/ PVC	F	1	A16
<b>BIM-IKE-Y1X W/KLI3</b> 1056490	KLI3 Included	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	Zinc	N/A	YE	2M/ PVC	I	1	A16
<b>BIM-IKE-Y1X-H1141 W/KLI3</b> 1056690	KLI3 Included	2-wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	Zinc	N/A	YE	--	H	2	A16
<b>BIM-NST-Y1X</b> 1058400	w/o Bracket	2-Wire DC NAMUR	8.2 VDC nominal	1000	Remote	-25 to +70	IP67	PA 12	N/A	YE	2M/ PVC	G	1	A16

We reserve the right to make technical alterations without prior notice.

# Notes







Notes





# Mating Cordset Selection Guide

		Picofast	
			
Housing	M8 Cordsets	M8 Field Wireables	
Pages	H7	H11	

		Eurofast	
			
Housing	M12 Cordsets	M12 Field Wireables	
Pages	H13	H17	

		Microfast	
			
Housing	1/2" Cordsets	1/2" Field Wireables	
Pages	H18	H20	

		Minifast	
			
Housing	7/8" Cordsets	7/8" Field Wireables	
Pages	H21	H25	

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## Mating Cordset Selection Guide

### Connectivity

Rugged, durable, and reliable, Turck connectivity products consolidate wiring, connect sensing devices, and distribute power and signals.

#### Cordsets

- Environmentally sealed for harsh environments
- Pin count 2-28 pole
- Power range up to 35 A
- LED visibility
- Industry specific jacketed cable

#### Rugged, Sealed Junction Boxes

- 4, 6, or 8 ports, with or without LEDs for NPN or PNP sensors
- Consolidate wiring
- IO-Link Enabled

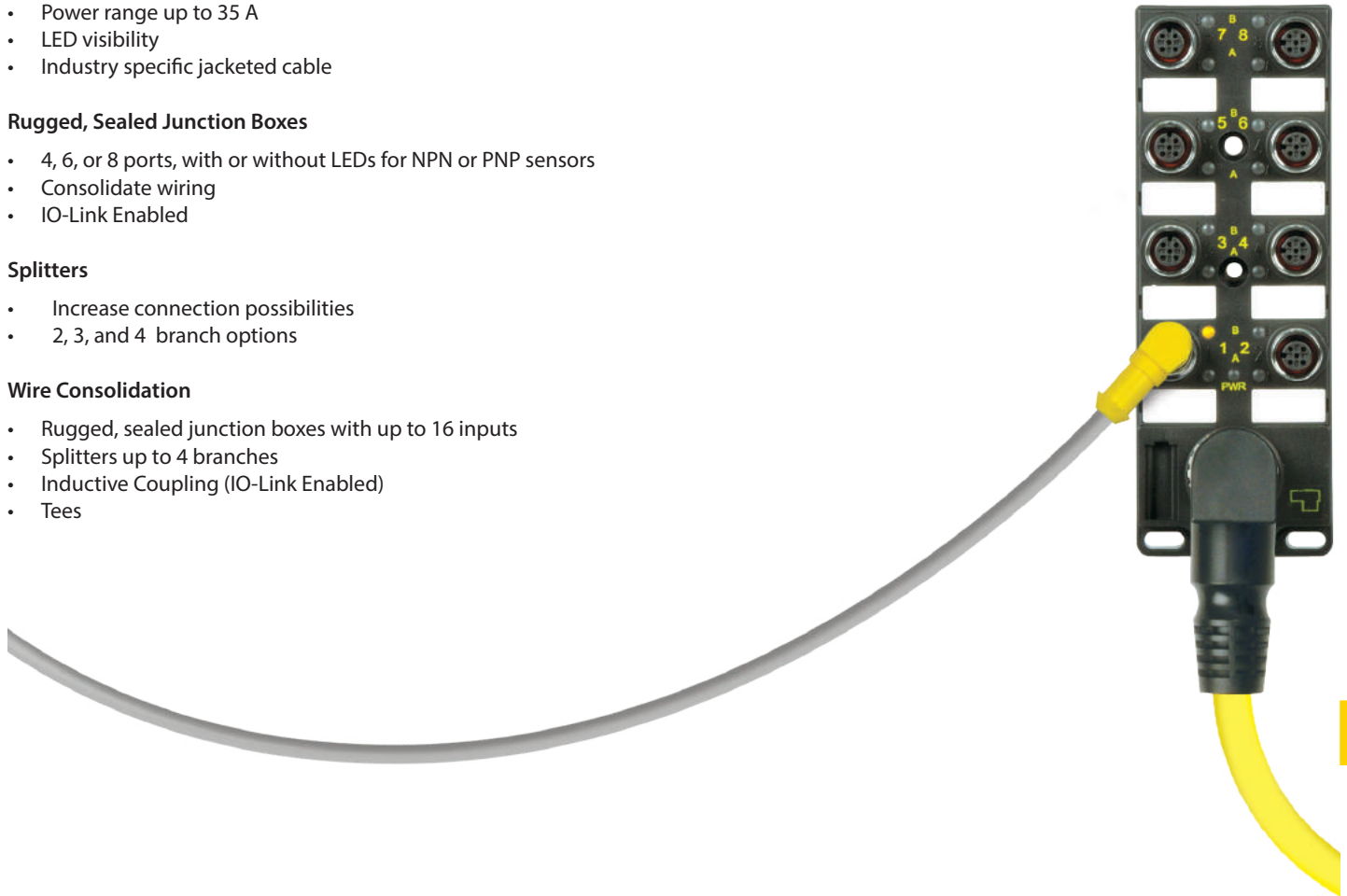
#### Splitters

- Increase connection possibilities
- 2, 3, and 4 branch options

#### Wire Consolidation

- Rugged, sealed junction boxes with up to 16 inputs
- Splitters up to 4 branches
- Inductive Coupling (IO-Link Enabled)
- Tees

We reserve the right to make technical alterations without prior notice.



Mating Cordsets



## Mating Cordset Selection Guide

Attributes	Instrumentation Tray Cable		General Purpose Cable		Instrumentation Tray/Exposed Run/Direct Burial Cable	
<b>Material:</b>	PVC	TPE	PVC	TPU	PVC	TPE
<b>Temp Range:</b>	-40 to 105 °C	-40 to 105 °C	-40 to 105 °C	-40 to 90 °C	-40 to 105 °C	-40 to 105 °C
<b>Cold Bend:</b>	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C
<b>Cold Impact:</b>	---	---	---	---	---	---
<b>Crush and Impact:</b>	---	---	---	---	Excellent	Excellent
<b>Cut and Abrasion:</b>	Fair	Fair/Good	Fair	Excellent	Good	Fair/Good
<b>UV/Sunlight Resistant:</b>	Excellent	Excellent	Excellent	Poor/Fair	Excellent	Excellent
<b>Flame Retardant:</b>	UL 1685/CSA FT4	UL 1685/CSA FT4	UL 1061/CSA FT1	UL 1061/CSA FT1	UL 1685/CSA FT4	UL 1685/CSA FT4
<b>Weld Slag/Spatter:</b>	Poor	Very Good	Poor	Poor	Poor	Very Good
<b>Water:</b>	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
<b>Flexibility:</b>	Very Good	Very Good	Very Good	Good	Fair	Good
<b>Flexlife:</b>	Good	Good	Good	Good	Fair	Fair/Good
<b>Oils:</b>	Excellent	Excellent	Very Good	Good	Very Good	Excellent
<b>Greases:</b>	Excellent	Excellent	Very Good	Good	Very Good	Excellent
<b>Gasoline:</b>	Fair	Good	Fair	Fair	Poor	Good
<b>Alcohols:</b>	Good	Very Good	Good	Poor/Fair	Very Good	Very Good
<b>Acids &lt;20%:</b>	Good	Poor	Good	Fair	Good	Poor
<b>General Approvals:</b>	UL ITC, PLTC, AWM CSA AWM CMX OUT-DOOR-CMG, MSHA 300 V, 600 V	UL ITC, PLTC, AWM CSA AWM CMX OUT-DOOR-CMG, MSHA 300 V, 600 V	UL/CSA, AWM, MSHA 300 V or 600 V	UL/CSA, AWM, MSHA 300 V or 600 V	UL ITC, PLTC, ERDB, AWM, CSA CIC or CMX OUTDOOR-CM AWM, Marine Shipboard UL 1309, IEEE 1580-2010, CSA 245, ABS, 300 V, 600 V	UL ITC, PLTC, ERDB, AWM CSA CMX OUTDOOR-CMG 150 V, 300 V, 600 V

We reserve the right to make technical alterations without prior notice.

- Attributes are general statements for materials at room temperature. Each application should be evaluated individually.
- Temperature, the percentage of chemical present, type of chemical exposure, and installation practices will all affect performance. For specific recommendations, please contact Turck.

## Mating Cordset Selection Guide

Attributes	Power Tray/Exposed Run/Direct Burial Cable		Industrial Ethernet Cable	Fieldbus Technology Cable		
	PVC	TPE	TPE	PVC	TPE	TPU
<b>Temp Range:</b>	-40 to 90 °C	-40 to 105 °C	-40 to 80 °C	-40 to 105 °C	-40 to 80 °C	-40 to 80 °C
<b>Cold Bend:</b>	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C
<b>Cold Impact:</b>	---	---	---	---	---	---
<b>Crush and Impact:</b>	Excellent	Excellent	---	Excellent	---	---
<b>Cut and Abrasion:</b>	Good	Fair/Good	Fair/Good	Good	Fair/Good	Excellent
<b>UV/Sunlight Resistant:</b>	Excellent	Excellent	Excellent	Excellent	Excellent	Poor/Fair
<b>Flame Retardant:</b>	UL 1685/CSA FT4	UL 1685/CSA FT4	UL 1061/CSA FT1	UL 1685/CSA FT4 IEC 60332-3-22	UL 1061/ CSA FT1	UL 1061/ CSA FT1
<b>Weld Slag/Spatter:</b>	Poor	Very Good	Very Good	Poor	Very Good	Poor
<b>Water:</b>	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
<b>Flexibility:</b>	Fair	Good	Good/Excellent	Fair	Good	Good
<b>Flexlife:</b>	Fair	Good	Very Good	Poor	Fair	Good
<b>Oils:</b>	Very Good	Excellent	Excellent	Fair	Excellent	Good
<b>Greases:</b>	Very Good	Excellent	Excellent	Fair	Excellent	Good
<b>Gasoline:</b>	Poor	Good	Good	Poor	Good	Fair
<b>Alcohols:</b>	Very Good	Very Good	Very Good	Good	Very Good	Poor/Fair
<b>Acids &lt;20%:</b>	Good	Poor	Poor	Good	Poor	Fair
<b>General Approvals:</b>	UL WTTC, TC-ERDB ITC, PLTC, ERDB CSA CIC/TC 600 V, 1000 V	UL WTTC, TC-ERDB ITC, PLTC, ERDB CSA CIC/TC 600 V, 1000 V	UL AWM, CSA CMX OUTDOOR-CM 300 V or 600 V	UL ITC, PLTC, ERDB, AWM, CSA CIC or CMX OUT- DOOR-CM AWM, Marine Shipboard UL 1309, IEEE 1580-2010, CSA 245, ABS, 300 V, 600 V	UL/CSA, AWM 300 V or 600 V	UL/CSA, AWM 300 V or 600 V

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- Attributes are general statements for materials at room temperature. Each application should be evaluated individually.
- Temperature, the percentage of chemical present, type of chemical exposure, and installation practices will all affect performance. For specific recommendations, please contact Turck.

## Mating Cordset Selection Guide

Attributes	Extremelife Cable	Flexlife Cable		Weldlife Cable
<b>Material:</b>	EX60	TPE	TPU	TPE
<b>Temp Range:</b>	-60 to 105 °C	-40 to 105 °C	-40 to 90 °C	-40 to 105 °C
<b>Cold Bend:</b>	-60 °C	-40 °C	-40 °C	-40 °C
<b>Cold Impact:</b>	-40 °C	---	---	---
<b>Crush and Impact:</b>	Excellent	---	---	---
<b>Cut and Abrasion:</b>	Very Good	Fair/Good	Excellent	Fair/Good
<b>UV/Sunlight Resistant:</b>	Excellent	Excellent	Poor/Fair	Excellent
<b>Flame Retardant:</b>	UL 1685/CSA FT4 IEC 60332-3-22	UL 1061/CSA FT1	UL 1061/CSA FT1	UL 1061/CSA FT1
<b>Weld Slag/Spatter:</b>	Good	Very Good	Poor	Very Good
<b>Water:</b>	Very Good	Very Good	Very Good	Very Good
<b>Flexibility:</b>	Good	Excellent	Good	Very Good
<b>Flexlife:</b>	Very Good	Excellent	Good	Good
<b>Oils:</b>	Excellent	Excellent	Good	Excellent
<b>Greases:</b>	Excellent	Excellent	Good	Excellent
<b>Gasoline:</b>	Good	Good	Fair	Good
<b>Alcohols:</b>	Excellent	Very Good	Poor/Fair	Very Good
<b>Acids &lt;20%:</b>	Good	Poor	Fair	Poor
<b>General Approvals:</b>	UL TC-ERDB, ITC, PLTC, ERDB, CSA CIC/TC Marine Shipboard UL 1309, IEEE 1580-2010, ABS, 300 V, 600 V	UL/CSA, AWM 300 V or 600 V	UL/CSA, AWM 300 V or 600 V	UL/CSA, AWM 300 V or 600 V

- Attributes are general statements for materials at room temperature. Each application should be evaluated individually.
- Temperature, the percentage of chemical present, type of chemical exposure, and installation practices will all affect performance.  
For specific recommendations, please contact Turck.

We reserve the right to make technical alterations without prior notice.

## Mating Cordset Selection Guide

Attributes	Armorfast Instrumentation Cable	Flexible Service Cable	Washdown Cable	Halogen Free Cable/Low Smoke Cable
<b>Material:</b>	PVC	PVC	TPV	TPU
<b>Temp Range:</b>	-40 to 105 °C	-40 to 105 °C	-60 to 105 °C	-40 to 80 °C
<b>Cold Bend:</b>	-40 °C	-40 °C	-60 °C	-40 °C
<b>Cold Impact:</b>	---	---	---	---
<b>Crush and Impact:</b>	Excellent	---	---	---
<b>Cut and Abrasion:</b>	Good	Good	Poor/Fair	Excellent
<b>UV/Sunlight Resistant:</b>	Excellent	Excellent	Poor	Poor/Fair
<b>Flame Retardant:</b>	UL 1685/CSA FT4	UL Horizontal Flame/CSA FT2	Poor	UL 1061/CSA FT1
<b>Weld Slag/Spatter:</b>	Poor	Poor	---	Poor
<b>Water:</b>	Very Good	Very Good	Excellent	Very Good
<b>Flexibility:</b>	Fair	Good	Excellent	Good
<b>Flexlife:</b>	Poor	Good	---	Good
<b>Oils:</b>	Very Good	Very Good	Poor	Good
<b>Greases:</b>	Very Good	Very Good	Poor	Good
<b>Gasoline:</b>	Poor	Poor	Poor	Fair
<b>Alcohols:</b>	Very Good	Very Good	Good	Poor/Fair
<b>Acids &lt;20%:</b>	Good	Good	Good	Fair
<b>General Approvals:</b>	UL MC, ITC, PLTC, ERDB, CSA ACIC, 300 V, 600 V, HL ABCD	UL/CSA, STOOW MSHA, 600 V	None	UL/CSA, AWM 300 V

- Attributes are general statements for materials at room temperature. Each application should be evaluated individually.
- Temperature, the percentage of chemical present, type of chemical exposure, and installation practices will all affect performance. For specific recommendations, please contact Turck.

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# M8 Picofast Connectivity

## 3-Wire Cordsets, Snap Lock (Locking Sleeve)

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 125 V, 4 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p>PKG ..Z**</p>	<p>PKG 3Z-* PKW 3Z-*</p>	<p>PSG 3-* PSW 3-*</p>	<p>AWM, PVC Yellow, 3x24 AWG, 105 °C, 4.4 mm OD, Cable #RF50642-*M, Flexlife®</p>	<p>Female</p> <p>Male</p>
<p>PKW ..Z**</p>	<p>PKG 3Z-*/S90 PKW 3Z-*/S90</p>	<p>PSG 3-*/S90 PSW 3-*/S90</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.2 mm OD, Cable #RF50587-*M, Cut/Abrasion Immune</p>	
<p>PKW ..Z**</p>	<p>PKG 3Z-*/S90/S101 PKW 3Z-*/S90/S101</p>	<p>PSG 3-*/S90/S101 PSW 3-*/S90/S101</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.4 mm OD, Cable #RF51166-*M, Cut/Abrasion Immune, Flexlife-20, High Flex - Over 20 Million Cycles</p>	
<p>PSG ..</p>	<p>PKG 3Z-*/S90/S618 PKW 3Z-*/S90/S618</p>	<p>PSG 3-*/S90/S618 PSW 3-*/S90/S618</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.2 mm OD, Cable #RF50601-*M, Cut/Abrasion Immune, EMI/RFI Protection</p>	
<p>PSW ..</p>	<p>PKG 3Z-*/S760 PKW 3Z-*/S760</p>	<p>PSG 3-*/S760 PSW 3-*/S760</p>	<p>AWM, PVC Black, 3x24 AWG, 105 °C, 4.2 mm OD, Cable #RF50585-M, Flexlife</p>	

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters.

\*\* Locking sleeve material is POM.."PKG..Z".

We reserve the right to make technical alterations without prior notice.



## M8 Picofast Connectivity 4-Wire Cordsets, Snap Lock (Locking Sleeve)

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 125 V, 2 A



We reserve the right to make technical alterations without prior notice.

Connector Style	Female Part Number	Male Part Number	Features	Pinout	
<p>PKG ..Z**</p>	<p>PKG 4Z-* PKW 4Z-*</p>	<p>PSG 4-* PSW 4-*</p>	<p>AWM, PVC Yellow, 4x26 AWG, 105 °C, 4.4 mm OD, Cable #RF50697-*M, Flexlife®</p>	<p>Female</p>	
<p>PKW ..Z**</p>	<p>PKG 4Z-*/S90 PKW 4Z-*/S90</p>	<p>PSG 4-*/S90 PSW 4-*/S90</p>	<p>AWM, TPU Black, 4x26 AWG, 90 °C, 4.2 mm OD, Cable #RF50586-*M, Cut/Abrasion Immune</p>		
<p>PKW ..Z**</p>	<p>PKG 4Z-*/S90/S101 PKW 4Z-*/S90/S101</p>	<p>PSG 4-*/S90/S101 PSW 4-*/S90/S101</p>	<p>AWM, TPU Black, 4x26 AWG, 90 °C, 4.4 mm OD, Cable #RF50935-*M, Cut/Abrasion Immune, Flexlife-20, High Flex - Over 20 Million Cycles</p>		<p>1. BN 2. WH 3. BU 4. BK</p>
<p>PSG ..</p>	<p>PKG 4Z-*/S90/S618 PKW 4Z-*/S90/S618</p>	<p>PSG 4-*/S90/S101 PSW 4-*/S90/S101</p>	<p>AWM, TPU Black, 4x26 AWG, 90 °C, 4.2 mm OD, Cable #RF50602-*M, Cut/Abrasion Immune, EMI/RFI Protection</p>		
<p>PSW ..</p>	<p>PKG 4Z-*/S760 PKW 4Z-*/S760</p>	<p>PSG 4-*/S760 PSW 4-*/S760</p>	<p>AWM, PVC Black, 4x26 AWG, 105 °C, 4.4 mm OD, Cable #RF50870-*M, Flexlife</p>		
<p>PSW ..</p>	<p>PKG 4Z-*/S90/S653 PKW 4Z-*/S90/S653</p>	<p>PSG 4-*/S90/S653 PSW 4-*/S90/S653</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.2 mm OD, Cable #RF50601-*M, Cut/Abrasion Immune, EMI/RFI Protection</p>		<p>Male</p>

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters.

\*\* Locking sleeve material is POM..\*PKG..Z".

# M8 Picofast Connectivity

## 3-Wire Cordsets, Threaded Coupling Nut

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 125 V, 4 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>PKG ..Z**</b></p>	<p>PKG 3M-*</p> <p>PKW 3M-*</p>	<p>PSG 3M-*</p> <p>PSW 3M-*</p>	<p>AWM, PVC Yellow, 3x24 AWG, 105 °C, 4.4 mm OD, Cable #RF50642-*M, Flexlife®</p>	<p>Female</p>
<p><b>PKG ..M**</b></p>	<p>PKG 3M-*/S90</p> <p>PKW 3M-*/S90</p>	<p>PSG 3M-*/S90</p> <p>PSW 3M-*/S90</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.2 mm OD, Cable #RF50587-*M, Cut/Abrasion Immune</p>	
<p><b>PKG 3M-*/S90/S101</b></p> <p><b>PKW 3M-*/S90/S101</b></p>	<p>PKG 3M-*/S90/S101</p> <p>PKW 3M-*/S90/S101</p>	<p>PSG 3M-*/S90/S101</p> <p>PSW 3M-*/S90/S101</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.4 mm OD, Cable #RF51166-*M, Cut/Abrasion Immune, Flexlife-20, High Flex - Over 20 Million Cycles</p>	<p>1. BN</p> <p>3. BU</p> <p>4. BK</p>
<p><b>PSG .. M**</b></p>	<p>PKG 3M-*/S90/S618</p> <p>PKW 3M-*/S90/S618</p>	<p>PSG 3M-*/S90/S618</p> <p>PSW 3M-*/S90/S618</p>	<p>AWM, TPU Black, 3x24 AWG, 90 °C, 4.2 mm OD, Cable #RF50601-*M, Cut/Abrasion Immune, EMI/RFI Protection</p>	
<p><b>PKG 3M-*/S1587</b></p> <p><b>PKW 3M-*/S1587</b></p>	<p>PKG 3M-*/S1587</p> <p>PKW 3M-*/S1587</p>	<p>PSG 3M-*/S1587</p> <p>PSW 3M-*/S1587</p>	<p>AWM, TPE Yellow, 3x24 AWG, 105 °C, 4.4 mm OD, Cable #RF51271-*M, Weldlife®, Weld Flash Immune</p>	<p>1. BN</p> <p>3. BU</p> <p>4. Drain</p>
<p><b>PKG .. M**</b></p>	<p>PKG 3M-*/S760</p> <p>PKW 3M-*/S760</p>	<p>PSG 3M-*/S760</p> <p>PSW 3M-*/S760</p>	<p>AWM, PVC Black, 3x24 AWG, 4.2 mm OD, Cable #RF50585-M, Flexlife</p>	
<p><b>PKG 3M-*/S90/S1084</b></p> <p><b>PKW 3M-*/S90/S1084</b></p>	<p>PKG 3M-*/S90/S1084</p> <p>PKW 3M-*/S90/S1084</p>	<p>PSG 3M-*/S90/S1084</p> <p>PSW 3M-*/S90/S1084</p>	<p>AWM, TPU Black, 2x24 AWG, 90 °C, 4.2 mm OD, Cable #RF51197-*M, Cut/Abrasion Immune, Shielded</p>	<p>1. BN</p> <p>3. BU</p> <p>4. BK</p>
<p><b>PSG 3F .. **</b></p>		<p>PSG 3F-*</p>	<p>AWM, PVC Yellow, 3x24 AWG, 105 °C, 4.4 mm OD, Cable #RF50642-*M, Fixed coupling nut</p>	

We reserve the right to make technical alterations without prior notice.

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters.

\*\* Standard coupling material is nickel plated brass.. "PKG..M"; "PKG..M" indicates stainless steel.

## M8 Picofast Connectivity 4-Wire Cordsets, Threaded Coupling Nut

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 125 V, 4 A



We reserve the right to make technical alterations without prior notice.

Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p>PKG ..M**</p>	<p>PKG 4M-* PKW 4M-*</p>	<p>PSG 4M-* PSW 4M-*</p>	<p>AWM PVC Yellow, 4x26 AWG, 105 °C, 4.4 mm OD, Cable #RF50697-*M, Flexlife®</p>	<p>Female</p>
<p>PKW ..M**</p>	<p>PKG 4M-*/S90 PKW 4M-*/S90</p>	<p>PSG 4M-*/S90 PSW 4M-*/S90</p>	<p>AWM TPU Black, 4x26 AWG, 90 °C, 4.2 mm OD, Cable #RF50586-*M, Cut/Abrasion Immune</p>	
<p>PKG ..M**</p>	<p>PKG 4M-*/S90/S101 PKW 4M-*/S90/S101</p>	<p>PSG 4M-*/S90/S101 PSW 4M-*/S90/S101</p>	<p>AWM TPU Black, 4x26 AWG, 90 °C, 4.4 mm OD, Cable #RF50935-*M, Cut/Abrasion Immune, Flexlife-20, High Flex - Over 20 Million Cycles</p>	<p>1. BN 2. WH 3. BU 4. BK</p>
<p>PSG ..M**</p>	<p>PKG 4M-*/S90/S618 PKW 4M-*/S90/S618</p>	<p>PSG 4M-*/S90/S618 PSW 4M-*/S90/S618</p>	<p>AWM TPU Black, 4x26 AWG, 90 °C, 4.2 mm OD, Cable #RF50602-*M, Cut/Abrasion Immune, EMI/RFI Protection</p>	<p>Male</p>
<p>PKW ..M**</p>	<p>PKG 4M-*/S760 PKW 4M-*/S760</p>	<p>PSG 4M-*/S760 PSW 4M-*/S760</p>	<p>AWM PVC Black, 4x26 AWG, 105 °C, 4.4 mm OD, Cable #RF50870-*M, Flexlife</p>	
<p>PKW ..M**</p>	<p>PKG 4M-*/S90/S653 PKW 4M-*/S90/S653</p>	<p>PSG 4M-*/S90/S653 PSW 4M-*/S90/S653</p>	<p>AWM TPU Black, 3x24 AWG, 90 °C, 4.2 mm OD, Cable #RF50601-*M, Cut/Abrasion Immune, EMI/RFI Protection</p>	<p>1. BN 2. Drain 3. BU 4. BK</p>

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters.

\*\* Standard coupling material is nickel plated brass. "PKG..M"; "PKG..M" indicates stainless steel.

# M8 Picofast Connectivity

## 3 and 4-Pin Field Wireable Connectors, Standard

- IEC IP67 Protection



Housing Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>B 513(4)1-0</b> 1.457 [37.0] APPROX 0.457 [11.6] M8x1</p>	<b>B 5131-0</b>	<b>BS 5131-0</b>	PBT, Black, accepts 3-5 mm cable diameter, solder terminals, accepts up to 24 AWG conductors, 85 °C, 60 VAC/75 VDC, 4 A, mates with 4-pin threaded cordsets and receptacles	<p><b>Female</b></p> <p><b>Male</b></p>
<p><b>BS 513(4)1-0</b> 1.772 [45.0] APPROX 0.472 [12.0] M8x1</p>	<b>B 5141-0</b>	<b>BS 5141-0</b>	PBT, Black, accepts 3-5 mm cable diameter, solder terminals, accepts up to 24 AWG conductors, 85 °C, 30 VAC/36 VDC, 4 A, mates with 4-pin threaded cordsets and receptacles	<p><b>Female</b></p> <p><b>Male</b></p>
<p><b>B 513(4)3-0</b> 1.772 [45.0] APPROX 0.457 [11.6] M8x1</p>	<b>B 5133-0</b>	<b>BS 5133-0</b>	PBT, Black, accepts 3-5 mm cable diameter, screw terminals, accepts up to 22 AWG conductors, 85 °C, 60 VAC/75 VDC, 4 A, mates with 3-pin threaded cordsets and receptacles	<p><b>Female</b></p> <p><b>Male</b></p>
<p><b>BS 513(4)3-0</b> 1.969 [50.0] APPROX 0.472 [12.0] M8x1</p>	<b>B 5143-0</b>	<b>BS 5143-0</b>	PBT, Black, accepts 3-5 mm cable diameter, screw terminals, accepts up to 22 AWG conductors, 85 °C, 60 VAC/75 VDC, 4 A, mates with 4-pin threaded cordsets and receptacles	<p><b>Female</b></p> <p><b>Male</b></p>

We reserve the right to make technical alterations without prior notice.

# M8 Picofast Connectivity

## 3 and 4-Pin Field Wireable Connectors, Standard

- IEC IP67 Protection



We reserve the right to make technical alterations without prior notice.

Housing Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>BS 513(4)2-0</b></p>		<b>BS 5132-0</b>	PBT, Black, accepts 3-5 mm cable diameter, solder terminals, accepts up to 26 AWG conductors, 85 °C, 60 VAC/75 VDC, 4 A, mates with 3-pin female snap-lock cordsets, receptacles and junction boxes and threaded cordsets	<p><b>Male</b></p>
		<b>BS 5142-0</b>	PBT, Black, accepts 3-5 mm cable diameter, solder terminals, accepts up to 26 AWG conductors, 85 °C, 60 VAC/75 VDC, 2 A, mates with 3-pin female snap-lock cordsets, receptacles and junction boxes and threaded cordsets	<p><b>Male</b></p>
<p><b>B 523(4)1-0</b></p>	<b>B 5231-0</b>	<b>BS 5231-0</b>	PBT, Black, Accepts 3-5 mm cable diameter, solder terminals, accepts up to 24 AWG conductors, 85 °C, 60 VAC/75 VDC, 4 A, mates with 3-pin threaded cordsets and receptacles	<p><b>Female</b></p>
				<p><b>Male</b></p>
<p><b>BS 523(4)1-0</b></p>	<b>B 5241-0</b>	<b>BS 5241-0</b>	PBT, Black, accepts 3-5 mm cable diameter, solder terminals, accepts up to 24 AWG conductors, 85 °C, 30 VAC/36 VDC, 4 A, mates with 4-pin threaded cordsets and receptacles	<p><b>Female</b></p>
				<p><b>Male</b></p>

Mating Cordsets

# M12 Eurofast Connectivity

## 2-Wire Cordsets, Standard Plug Body

- NEMA 1, 3, 4, 6P
- IEC IP68 Protection
- 250 V, 4 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>RK ..**</b></p>	RK 4.2T-* WK 4.2T-*	RS 4.2T-* WS 4.2T-*	ITC/PLTC PVC Grey, 2x20 AWG, 105 °C, 5.1 mm OD, Cable #RF50529-*M, Flexlife®	<p>1. N/C 2. N/C 3. BN 4. BU</p>
	RK 4.2T-*/S90 WK 4.2T-*/S90	RS 4.2T-*/S90 WS 4.2T-*/S90	AWM TPU Grey, 2x20 AWG, 90 °C, 4.8 mm OD, Cable #RF50772-*M, Cut/Abrasion Immune	
<p><b>WK ..**</b></p>	RK 4.2T-*/S748 WK 4.2T-*/S748	RS 4.2T-*/S748 WS 4.2T-*/S748	ITC/PLTC PVC Yellow, 2x22 AWG, 105 °C, 5.1 mm OD, Cable #RF50650-*M, Flexlife	<p>1. WH 2. N/C 3. N/C 4. BK</p>
	RK 4.21T-*/S1511 WK 4.21T-*/S1511	RS 4.21T-*/S1511 WS 4.21T-*/S1511	ITC/PLTC PVC Grey, 2x20 AWM PVC, 105 °C, 5.1 mm OD, Cable #RF50529-*M, Flexlife	
<p><b>RS ..**</b></p>	RK 4.21T-* WK 4.21T-*	RS 4.21T-* WS 4.21T-*	ITC/PLTC PVC NAMUR Blue, 2x20 AWG, 105 °C, 5.1 mm OD, Cable #RF51923-*M	<p>1. BN 2. BU 3. N/C 4. N/C</p>
	RK 4.21T-*/S90 WK 4.21T-*/S90	RS 4.21T-*/S90 WS 4.21T-*/S90	AWM TPU NAMUR Blue, 2x20 AWG, 90 °C, 5.1 mm OD, Cable #RF50657-*M, Cut/Abrasion Immune	
<p><b>WS ..**</b></p>	RK 4.22T-* WK 4.22T-*	RS 4.22T-* WS 4.22T-*	<p>ITC/PLTC PVC Grey, 2x20 AWG, 105 °C, 5.1 mm OD, Cable #RF50529-*M, Flexlife</p>	<p>1. BN 2. N/C 3. BU 4. N/C</p>
	RK 4.23T-* WK 4.23T-*	RS 4.23T-* WS 4.23T-*		

We reserve the right to make technical alterations without prior notice.

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RK.."; "RKK.." indicates nylon and "RKV.." indicates stainless steel.

## M12 Eurofast Connectivity

### 3-Wire Cordsets, Standard Plug Body

- NEMA 1, 3, 4, 6P
- IEC IP68 Protection
- 250 V, 4 A



We reserve the right to make technical alterations without prior notice.

Connector Style	Female Part Number	Male Part Number	Features	Pinout
	RK 4T-*	RS 4T-*	ITC/PLTC PVC Grey, 3x20 AWG, 105 °C, 5.1 mm OD, Cable #RF52081-*M, Flexlife®	
	WK 4T-*	WS 4T-*		
	RK 4T-*/S90 WK 4T-*/S90	RS 4T-*/S90 WS 4T-*/S90	AWM TPU Grey, 3x22 AWG, 90 °C, 4.8 mm OD, Cable #RF52080-*M, Cut/Abrasion Immune	
	RK 4T-*/S101 WK 4T-*/S101	RS 4T-*/S101 WS 4T-*/S101	AWM TPE Grey, 3x22 AWG, 105 °C, 4.8 mm OD, Cable #RF52085-*M, Flexlife-20, High Flex Over 20 Million Cycles	
	RK 4T-*/S529 WK 4T-*/S529	RS 4T-*/S529 WS 4T-*/S529	TPU/Heavy Braid Double Jacket Yellow, 3x22 AWG, 90 °C, 4.8 mm OD, Cable #RF52084-*M, Cut/Abrasion Immune Braided Mechanical Shield	
	RK 4T-*/S824 WK 4T-*/S824	RS 4T-*/S824 WS 4T-*/S824	ITC/PLTC AWM PVC Grey, 3x22 AWG, 105 °C, 5.1 mm OD, Cable #RF52081-*M, Tray Rated, Flexlife	
	RK 4T-*/S715 WK 4T-*/S715	RS 4T-*/S715 WS 4T-*/S715	ITC/PLTC PVC Yellow, 3x22 AWG, 105 °C, 5.1 mm OD, Cable #RF52087-*M, Flexlife	
	RK 4T-*/S760 WK 4T-*/S760	RS 4T-*/S760 WS 4T-*/S760	ITC/PLTC PVC Black, 3x22 AWG, 105 °C, 5.1 mm OD, Cable #RF52083-*M, Flexlife	
RK 4T-*/S618 WK 4T-*/S618	RS 4T-*/S618 WS 4T-*/S618	ITC/PLTC PVC Grey, 3x22 AWG, Foil/Drain, 105 °C, 5.1 mm OD, Cable #RF52082-*M, RFI/EMI Shielding, Tray Rated		

1. BN
2. N/C
3. BU
4. BK

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RK.."; "RKK.." indicates nylon and "RKV.." indicates stainless steel.

# M12 Eurofast Connectivity

## 4-Wire Cordsets, Standard Plug Body

- NEMA 1, 3, 4, 6P
- IEC IP68 Protection
- 250 V, 4 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout	
<p>RK ..**</p>	RK 4.41T-* WK 4.41T-*	RS 4.41T-* WS 4.41T-*	ITC/PLTC PVC NAMUR Blue, 4x22 AWG, 105 °C, 5.3 mm OD, Cable #RF50598-*M, Flexlife®	<p>Female</p>	
	RK 4.41T-*/S529 WK 4.41T-*/S529	RS 4.41T-*/S529 WS 4.41T-*/S529	TPU/Heavy Braid Double Jacket Yellow, 4x20 AWG, 90 °C, 5.7 mm OD, Cable #RF50526-*M, Cut/Abrasion Immune Braided Mechanical Shield		
<p>WK ..**</p>	RK 4.43T-* WK 4.43T-*	RS 4.43T-* WS 4.43T-*	ITC/PLTC PVC Yellow, 4x22 AWG, 105 °C, 5.3 mm OD, Cable #RF50530-*M, Flexlife		
	RK 4.43T-*/S90 WK 4.43T-*/S90	RS 4.43T-*/S90 WS 4.43T-*/S90	AWM TPU Yellow, 4x22 AWG, 90 °C, 5.1 mm OD, Cable #RF50613-*M, Cut/Abrasion Immune		
<p>RS ..**</p>	RK 4.4T-* WK 4.4T-*	RS 4.4T-* WS 4.4T-*	ITC/PLTC PVC Grey, 4x22 AWG, 105 °C, 5.3 mm OD, Cable #RF50516-*M, Flexlife		<p>Male</p>
	RK 4.4T-*/S90 WK 4.4T-*/S90	RS 4.4T-*/S90 WS 4.4T-*/S90	AWM TPU Grey, 4x22 AWG, 90 °C, 5.1 mm OD, Cable #RF50532-*M, Cut/Abrasion Immune		
<p>WS ..**</p>	RK 4.4T-*/S101 WK 4.4T-*/S101	RS 4.4T-*/S101 WS 4.4T-*/S101	AWM TPE Grey, 4x22 AWG, 105 °C, 5.1 mm OD, Cable #RF50941-*M, Flexlife-20, High Flex Over 20 Million Cycles		
	RK 4.4T-*/S824 WK 4.4T-*/S824	RS 4.4T-*/S824 WS 4.4T-*/S824	ITC/PLTC PVC Grey, 4x22 AWG, 105 °C, 5.3 mm OD, Cable #RF50698-*M, Tray Rated		
<p>WS ..**</p>	RK 4.4T-*/S618 WK 4.4T-*/S618	RS 4.4T-*/S618 WS 4.4T-*/S618	ITC/PLTC PVC Grey, 4x22 AWG Foil/Drain, 105 °C, 5.3 mm OD, Cable #RF50577-*M, RFI/EMI Shielding		
	RK 4.4T-*/S618/S824 WK 4.4T-*/S618/S824	RS 4.4T-*/S618/S824 WS 4.4T-*/S618/S824	ITC/PLTC PVC Grey, 4x22 AWG Foil/Drain, 105 °C, 5.3 mm OD, Cable #RF50777-*M, RFI/EMI Shielding, Tray Rated		

We reserve the right to make technical alterations without prior notice.

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RK .."; "RKK .." indicates nylon and "RKV .." indicates stainless steel.



## M12 Eurofast Connectivity

### 5-Wire Cordsets, Standard Plug Body

- NEMA 1, 3, 4, 6P
- IEC IP68 Protection
- 250 V, 4 A



We reserve the right to make technical alterations without prior notice.

Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>RK ..**</b></p>	RK 4.5T-*	RS 4.5T-*	ITC/PLTC PVC Grey, 5x22 AWG, 105 °C, 5.7 mm OD, Cable #RF50543-*M, Flexlife®	<p><b>Female</b></p>
	WK 4.5T-*	WS 4.5T-*		
	RK 4.5T-*/S90	RS 4.5T-*/S90	AWM TPU Grey, 5x22 AWG, 90 °C, 5.3 mm OD, Cable #RF50649-*M, Cut/Abrasion Immune	<p>1. BN 2. WH 3. BU 4. BK 5. GY</p>
<p><b>WK ..**</b></p>	WK 4.5T-*/S101	RS 4.5T-*/S101	AWM TPE Grey, 5x22 AWG, 105 °C, 5.1 mm OD, Cable #RF50909-*M, Flexlife-20, High Flex Over 20 Million Cycles	
	WK 4.5T-*/S101	WS 4.5T-*/S101		
	RK 4.5T-*/S618	RS 4.5T-*/S618	ITC/PLTC PVC Grey, 5x22 AWG Foil/Drain, 105 °C, 5.7 mm OD, Cable #RF50609-*M, RFI/EMI Protection	<p><b>Male</b></p>
<p><b>RS ..**</b></p>	WK 4.5T-*/S618	WS 4.5T-*/S618	ITC/PLTC PVC Yellow, 5x22 AWG, 105 °C, 5.7 mm OD, Cable #RF50684-*M, Flexlife	
	RS 4.5T-*/S715	RS 4.5T-*/S715	ITC/PLTC PVC Grey, 4x22 AWG Foil/Drain, 105 °C, 5.3 mm OD, Cable #RF50577-*M, RFI/EMI Shielding	<p>1. BN 2. WH 3. BU 4. BK 5. Drain</p>
	WK 4.5T-*/S653	RS 4.5T-*/S653	ITC/PLTC PVC Grey, 4x22 AWG Foil/Drain, 105 °C, 5.3 mm OD, Cable #RF50577-*M, RFI/EMI Shielding	
<p><b>WS ..**</b></p>	RK 4.5T-*/S1554	RS 4.5T-*/S1554	ITC/PLTC PVC Black, 5x22 AWG Foil/Drain, 105 °C, 5.7 mm OD, Cable #RF50794-*M, RFI/EMI Shielding	<p>1. BN 2. WH 3. BU 4. BK 5. GY</p>
	WK 4.5T-*/S1554	WS 4.5T-*/S1554		

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RK .."; "RKK .." indicates nylon and "RKV .." indicates stainless steel.

# M12 Eurofast Connectivity

## 4 and 5-Pin Field Wireable Connectors, Standard Key

- IEC IP67 Protection



Housing Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>B 81..</b></p>	<p><b>B 8141-0</b> <b>B 8241-0</b></p>	<p><b>BS 8141-0</b> <b>BS 8241-0</b></p>	<p>PBT, Black, PG 7 cable gland, accepts 4-6 mm cable diameter, screw terminals, accepts up to 18 AWG conductors, 85 °C, 250 V, 4 A, mates with standard key 4-pin cordsets and receptacles</p>	<p><b>Female</b></p>
<p><b>B 82..</b></p>	<p><b>B 8141-0/PG 9</b> <b>B 8241-0/PG 9</b></p>	<p><b>BS 8141-0/PG 9</b> <b>BS 8241-0/PG 9</b></p>	<p>PBT, Black, PG 9 cable gland, accepts 6-8 mm cable diameter, screw terminals, accepts up to 18 AWG conductors, 85 °C, 250 V, 4 A, mates with standard key 4-pin cordsets and receptacles</p>	<p><b>Male</b></p>
<p><b>BS 81..</b></p>	<p><b>B 8151-0/PG 9</b> <b>B 8251-0/PG 9</b></p>	<p><b>BS 8151-0/PG 9</b> <b>BS 8251-0/PG 9</b></p>	<p>PBT, Black, PG 9 cable gland, accepts 4-8 mm cable diameter, screw terminals, accepts up to 18 AWG conductors, 85 °C, 60 V, 4 A, mates with standard key 5-pin cordsets and receptacles</p>	<p><b>Female</b></p>
<p><b>BS 82..</b></p>	<p><b>BM 8151-0/PG 9</b></p>		<p>PBT, Black, PG 9 cable gland, accepts 6-8 mm cable diameter, screw terminals, metal coupling nut, 85 °C, 60 V, 4 A, mates with standard key 5-pin cordsets and receptacles</p>	<p><b>Male</b></p>

We reserve the right to make technical alterations without prior notice.

## 1/2" Microfast Connectivity

### Reverse Key (B-Code) Cordset Part Number Key

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 250 V, 4 A



We reserve the right to make technical alterations without prior notice.

Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>KB ..**</b></p>	<b>KB 4T-*</b> <b>WKB 4T-*</b>	<b>SB 4T-*</b> <b>WSB 4T-*</b>	ITC/PLTC PVC Yellow, 4x22 AWG, 105 °C, 5.3 mm OD, Cable #RF50555-*M, Flexlife®	<b>Female</b>  <b>Male</b> 
	<b>KB 4T-*/S90</b> <b>WKB 4T-*/S90</b>	<b>SB 4T-*/S90</b> <b>WSB 4T-*/S90</b>	AWM TPU Yellow, 4x22 AWG, 90 °C, 4.7 mm OD, Cable #RF50614-*M, Cut/Abrasion Immune	
<p><b>WKB ..**</b></p>	<b>KB 4T-*/S105</b> <b>WKB 4T-*/S105</b>	<b>SB 4T-*/S105</b> <b>WSB 4T-*/S105</b>	ITC/PLTC PVC Yellow, 4x22 AWG, 105 °C, 6.2 mm OD, Cable #RF50656-*M, Braided Copper Shield	<b>Female</b>  <b>Male</b> 
	<b>KB 4T-*/S727</b> <b>WKB 4T-*/S727</b>	<b>SB 4T-*/S727</b> <b>WSB 4T-*/S727</b>	AWM TPU Grey, 4x22 AWG, 90 °C, 5.1 mm OD, Cable #RF50532-*M, Special Conductor Color Code	
<p><b>SB ..**</b></p>	<b>KB 5T-*</b> <b>WKB 5T-*</b>	<b>SB 5T-*</b> <b>WSB 5T-*</b>	ITC/PLTC PVC Yellow, 5x22 AWG, 105 °C, 5.7 mm OD, Cable #RF50556-*M, Flexlife	<b>Female</b>  <b>Male</b> 
	<b>KB 6T-*</b> <b>WKB 6T-*</b>	<b>SB 6T-*</b> <b>WSB 6T-*</b>	ITC/PLTC PVC Yellow, 6x22 AWG, 105 °C, 6.2 mm OD, Cable #RF51003-*M, Flexlife	
<p><b>WSB ..**</b></p>	<b>KB 6T-*</b> <b>WKB 6T-*</b>	<b>SB 6T-*</b> <b>WSB 6T-*</b>	ITC/PLTC PVC Yellow, 6x22 AWG, 105 °C, 6.2 mm OD, Cable #RF51003-*M, Flexlife	<b>Female</b>  <b>Male</b> 
	<b>KB 6T-*</b> <b>WKB 6T-*</b>	<b>SB 6T-*</b> <b>WSB 6T-*</b>	ITC/PLTC PVC Yellow, 6x22 AWG, 105 °C, 6.2 mm OD, Cable #RF51003-*M, Flexlife	

\* Length in meters. Standard cable lengths are 2, 4, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "KB .."; "KBK .." indicates nylon and "KBV .." indicates stainless steel.

# 1/2" Microfast Connectivity

## 3-Wire Cordsets, Standard Duty

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 250 V, 4 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>WSB ..**</b></p>	<b>KB 3T-*</b> <b>WKB 3T-*</b>	<b>SB 3T-*</b> <b>WSB 3T-*</b>	ITC/PLTC PVC Yellow, 3x22 AWG, 105 °C, 5.1 mm OD, Cable #RF50531- <b>*M</b>	<p><b>Female</b></p>
<p><b>WKB ..**</b></p>	<b>KB 3T-*/S90</b> <b>WKB 3T-*/S90</b>	<b>SB 3T-*/S90</b> <b>WSB 3T-*/S90</b>	AWM TPU Yellow, 3x18 AWG, 90 °C, 5.3 mm OD, Cable #RF50547- <b>*M</b> , Cut/Abrasion Immune	
<p><b>SB ..**</b></p>	<b>KB 3T-*/S105</b> <b>WKB 3T-*/S105</b>	<b>SB 3T-*/S105</b> <b>WSB 3T-*/S105</b>	ITC/PLTC PVC Yellow, 3x22 AWG, 105 °C, 6.2 mm OD, Cable #RF50535- <b>*M</b> , Braided Shield	<p><b>Male</b></p>
<p><b>WSB ..**</b></p>	<b>KB 3T-*/S749</b> <b>WKB 3T-*/S749</b>	<b>SB 3T-*/S749</b> <b>WSB 3T-*/S749</b>	ITC/PLTC PVC Yellow, 2x22 AWG, 105 °C, 5.1 mm OD, Cable #RF50650- <b>*M</b> , 3-pin with 2 conductors	
<p><b>WSB ..**</b></p>	<b>KB 3T-*/S1507</b> <b>WKB 3T-*/S1507</b>	<b>SB 3T-*/S1507</b> <b>WSB 3T-*/S1507</b>	AWM TPE Grey, 3x22 AWG 105 °C, 4.8 mm OD, Cable #RF52085- <b>*M</b> , Flexlife-20, High Flex - Over 20 million cycles	

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\* Length in meters. Standard cable lengths are 2, 4, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "KB .."; "KBK .." indicates nylon and "KBV .." indicates stainless steel.

# 1/2" Microfast Connectivity

## 3-Pin Field Wireable Connectors

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection



Housing Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>MF 3131-0</b></p>	MF 3131-0	MFS 3131-0	PBT, black, PG 7 cable diameter gland, accepts 4-6 mm cable diameter, screw terminals, accepts up to 18 AWG conductor, 85 °C, 250 V, 4 A, mates with 3-wire cordsets and receptacles	<p>Female</p>
<p><b>MF 3231-0</b></p>				
<p><b>MFS 3131-0</b></p>	MF 3231-0	MFS 3231-0	PBT, black, PG 7 cable diameter gland, accepts 4-6 mm cable diameter, screw terminals, accepts up to 18 AWG conductor, 85 °C, 250 V, 4 A, mates with 3-wire cordsets and receptacles	<p>Male</p>
<p><b>MFS 3231-0</b></p>				

We reserve the right to make technical alterations without prior notice.

Mating Cordsets

# 7/8" Minifast Connectivity Products

## 2 and 3-Wire Cordsets, Standard

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 9 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>RKM ..**</b></p>	<b>RKM 20- *M</b> <b>WKM 20- *M</b>	<b>RSM 20- *M</b> <b>WSM 20- *M</b>	ITC/PLTC PVC Yellow 2x18 AWG, 105 °C, 6.2 mm OD, Cable #RF50511- *M, Flexlife®, 600 V	<p><b>Female</b></p> <p><b>Male</b></p>
<p><b>WKM ..**</b></p>	<b>RKM 30- *M</b> <b>WKM 30- *M</b>	<b>RSM 30- *M</b> <b>WSM 30- *M</b>	ITC/PLTC PVC Yellow, 3x18 AWG, 105 °C, 6.2 mm OD, Cable #RF50880- *M, Flexlife, 600 V	<p><b>Female</b></p>
<p><b>RSM ..**</b></p>	<b>RKM 30- *M/S90</b> <b>WKM 30- *M/S90</b>	<b>RSM 30- *M/S90</b> <b>WSM 30- *M/S90</b>	AWM TPU Yellow, 3x18 AWG, 90 °C, 6.0 mm OD, Cable #RF50545- *M, Cut Abrasion Immune, 600 V	<p><b>Female</b></p>
<p><b>RSM ..**</b></p>	<b>RKM 30- *M/S101</b> <b>WKM 30- *M/S101</b>	<b>RSM 30- *M/S101</b> <b>WSM 30- *M/S101</b>	AWM TPE Yellow, 3x18 AWG, 105 °C, 5.7 mm OD, Cable #RF51173- *M, Flexlife-20, high flex over 20 million cycles, 600 V C-track	
<p><b>WSM ..**</b></p>	<b>RKM 311- *M</b> <b>WKM 311- *M</b>	<b>RSM 311- *M</b> <b>WSM 311- *M</b>	ITC/PLTC PVC Yellow, 3x18 AWG, 105 °C, 6.2 mm OD, Cable #RF50520- *M, Flexlife, 600 V	<p><b>Male</b></p>
<p><b>WSM ..**</b></p>	<b>RKM 311- *M/S600</b> <b>WKM 311- *M/S600</b>	<b>RSM 311- *M/S600</b> <b>WSM 311- *M/S600</b>	SJOOW CPE, Yellow, 3x18 AWG, 105 °C, 8.0 mm OD, Cable #RF50658- *M, Weld Flash Immune, Flame Immune, 300 V	<p><b>Female</b></p>

We reserve the right to make technical alterations without prior notice.

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RKM .."; "RK .." indicates nylon, "RKM .." indicates stainless steel, and "RKVH .." indicates stainless steel hex.

## 7/8" Minifast Connectivity Products

### 3-Wire Cordsets, Standard

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 9 A



We reserve the right to make technical alterations without prior notice.

Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>RKM ..**</b></p>	<b>RKM 31-*M</b> <b>WKM 31-*M</b>	<b>RSM 31-*M</b> <b>WSM 31-*M</b>	ITC/PLTC PVC Yellow, 3x18 AWG, 105 °C, 6.2 mm OD, Cable #RF50513-*M, Flexlife®, 600 V	<p>Female</p>
<p><b>WKM ..**</b></p>				
<p><b>RSM ..**</b></p>	<b>RKM 31-*M/S600</b> <b>WKM 31-*M/S600</b>	<b>RSM 31-*M/S600</b> <b>WSM 31-*M/S600</b>	SJOOW CPE Yellow, 3x18 AWG, 105 °C, 8.0 mm OD, Cable #RF50654-*M, Weld Flash Immune, Flame Immune, 300 V	<p>Male</p>
<p><b>WSM ..**</b></p>				

1. BK  
2. BN  
3. BU

Mating Cordsets

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RKM .."; "RK .." indicates nylon, "RKV .." indicates stainless steel, and "RKVH .." indicates stainless steel hex.

# 7/8" Minifast Connectivity Products

## 3 and 4-Wire Cordsets, Standard

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 9 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>RKM ..**</b></p>	<b>RKM 40-*M</b> <b>WKM 40-*M</b>	<b>RSM 40-*M</b> <b>WSM 40-*M</b>	ITC/PLTC PVC Yellow, 4x18 AWG, 105 °C, 6.7 mm OD, Cable #RF50548-*M, Flexlife®, 600 V	<p><b>Female</b></p>  <p><b>Male</b></p>
<p><b>WKM ..**</b></p>	<b>RKM 40-*M/S90</b> <b>WKM 40-*M/S90</b>	<b>RSM 40-*M/S90</b> <b>WSM 40-*M/S90</b>	AWM TPU Yellow, 4x18 AWG, 90 °C, 7.2 mm OD, Cable #RF50544-*M, Cut/Abrasion Immune, 600 V	
<p><b>RSM ..**</b></p>	<b>RKM 40-*M/S101</b> <b>WKM 40-*M/S101</b>	<b>RSM 40-*M/S101</b> <b>WSM 40-*M/S101</b>	AWM TPE Yellow, 4x18 AWG, 105 °C, 6.2 mm OD, Cable #RF50968-*M, Flexlife-20, High Flex - Over 20 million cycles, 600 V, C-track	
<p><b>RSM ..**</b></p>	<b>RKM 40-*M/S529</b> <b>WKM 40-*M/S529</b>	<b>RSM 40-*M/S529</b> <b>WSM 40-*M/S529</b>	TPU Yellow, 4x20 AWG, 90 °C, 5.7 mm OD, Cable #RF50526-*M, Cut/Abrasion Immune, Braided Mechanical Shield, 300 V	
<p><b>WSM ..**</b></p>	<b>RKM 40-*M/S600</b> <b>WKM 40-*M/S600</b>	<b>RSM 40-*M/S600</b> <b>WSM 40-*M/S600</b>	SJOOW CPE Yellow, 4x18 AWG, 105 °C, 8.5 mm OD, Cable #RF50644-*M, Weld Flash Immune, Flame Immune, 300 V	

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RKM .."; "RK .." indicates nylon, "RKV .." indicates stainless steel, and "RKVH .." indicates stainless steel hex.

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## 7/8" Minifast Connectivity Products

### 5-Wire Cordsets, Standard

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection
- 9 A



Connector Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>RKM ..**</b></p>	<b>RKM 50-*M</b> <b>WKM 50-*M</b>	<b>RSM 50-*M</b> <b>WSM 50-*M</b>	ITC/PLTC PVC Yellow, 5x18 AWG, 105 °C, 7.6 mm OD, Cable #RF50549-*M, Flexlife®, 600 V	<p><b>Female</b></p>
<p><b>WKM ..**</b></p>	<b>RKM 50-*M/S90</b> <b>WKM 50-*M/S90</b>	<b>RSM 50-*M/S90</b> <b>WSM 50-*M/S90</b>	AWM TPU Yellow, 5x18 AWG, 90 °C, 7.2 mm OD, Cable #RF50751-*M, Cut/Abrasion Immune, 600 V	
<p><b>RSM ..**</b></p>	<b>RKM 50-*M/S101</b> <b>WKM 50-*M/S101</b>	<b>RSM 50-*M/S101</b> <b>WSM 50-*M/S101</b>	AWM TPE Yellow, 5x18 AWG, 105 °C, 6.7 mm OD, Cable #RF51174-*M, Flexlife-20, high flex over 20 million cycles, 600 V, C-track	
<p><b>RSM ..**</b></p>	<b>RKM 50-*M/S1551</b> <b>WKM 50-*M/S1551</b>	<b>RSM 50-*M/S1551</b> <b>WSM 50-*M/S1551</b>	ITC/PLTC PVC Yellow, 5x18 AWG, 105 °C, 7.6 mm OD, Cable #RF50578-*M, Yellow conductor instead of Green/Yellow, 600 V	<p><b>Male</b></p>
<p><b>WSM ..**</b></p>	<b>RKM 511-*M</b> <b>WKM 511-*M</b>	<b>RSM 511-*M</b> <b>WSM 511-*M</b>	ITC/PLTC PVC Yellow, 5x18 AWG, 105 °C, 7.6 mm OD, Cable #RF50521-*M, Flexlife, 600 V	
<p><b>WSM ..**</b></p>	<b>RKM 511-*M/S600</b> <b>WKM 511-*M/S600</b>	<b>RSM 511-*M/S600</b> <b>WSM 511-*M/S600</b>	SJOOW CPE Yellow, 5x18 AWG, 105 °C, 9.4 mm OD, Cable #RF50659-*M, Weld Flash Immune, Flame Immune, 300 V	

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Mating Cordsets

\* Length in meters. Standard cable lengths are 2, 4, 5, 6, 8 and 10 meters. Consult factory for other lengths.

\*\* Standard coupling nut material is nickel plated brass "RKM .."; "RK .." indicates nylon, "RKM .." indicates stainless steel, and "RKH .." indicates stainless steel hex.

# 7/8" Minifast Connectivity Products

## 3, 4 and 5-Pin Field Wireable Connectors

- NEMA 1, 3, 4, 6P
- IEC IP67 Protection



Housing Style	Female Part Number	Male Part Number	Features	Pinout
<p><b>B 41 ..</b></p>	<b>B 4131-0/9</b> <b>B 4231-0/9</b>	<b>BS 4131-0/9</b> <b>BS 4231-0/9</b>	Glass filled nylon, PG 9 cable gland, accepts 6-8 mm cable diameter screw terminals, accepts up to 16 AWG conductors, 85 °C, 250 V, 12 A, Mates with all 3-pin cordsets and receptacles	<p><b>Female</b></p>
	<b>B 4131-0/13.5</b>	<b>BS 4131-0/13.5</b>	Glass filled nylon, PG 13.5 cable gland, accepts 10-12 mm cable diameter screw terminals, accepts up to 16 AWG conductors, 85 °C, 250 V, 12 A, Mates with all 3-pin cordsets and receptacles	<p><b>Male</b></p>
<p><b>B 42 ..</b></p>	<b>B 4141-0/9</b> <b>B 4241-0/9</b>	<b>BS 4141-0/9</b> <b>BS 4241-0/9</b>	Glass filled nylon, PG 9 cable gland, accepts 6-8 mm cable diameter screw terminals, accepts up to 16 AWG conductors 85 °C, 250 V, 9 A, Mates with all 4-pin cordsets and receptacles	<p><b>Female</b></p>
	<b>B 4141-0/13.5</b>	<b>BS 4141-0/13.5</b>	Glass filled nylon, PG 13.5 cable gland, accepts 10-12 mm cable diameter screw terminals, accepts up to 16 AWG conductors, 85 °C, 250 V, 9 A, Mates with all 4-pin cordsets and receptacles	<p><b>Male</b></p>
<p><b>BS 41 ..</b></p>	<b>B 4151-0/9</b> <b>B 4251-0/9</b>	<b>BS 4151-0/9</b> <b>BS 4251-0/9</b>	Glass filled nylon, PG 9 cable gland, accepts 6-8 mm cable diameter, screw terminals, accepts up to 16 AWG conductors, 85 °C, 250 V, 9 A, Mates with all 5-pin cordsets and receptacles	<p><b>Female</b></p>
	<b>B 4151-0/13.5</b>	<b>BS 4151-0/13.5</b>	Glass filled nylon, PG 13.5 cable gland, accepts 10-12 mm cable diameter screw terminals, accepts up to 16 AWG conductors, 85 °C, 250 V, 9 A	
<p><b>BS 42 ..</b></p>	<b>B 4151-0/16</b>	<b>BS 4151-0/16</b>	Glass filled nylon, PG 16 cable gland, accepts 12-14 mm cable diameter screw terminals, accepts up to 16 AWG conductors, 85 °C, 250 V, 9 A	<p><b>Male</b></p>

We reserve the right to make technical alterations without prior notice.

## Notes



# Accessories Selection Guide

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	<p><b>Cushion Mount</b></p> 	<p><b>Mounting Clamps</b></p> 	<p><b>Mounting Brackets</b></p> 
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	<p><b>Mounting Clamps</b></p> 	<p><b>Mounting Brackets</b></p> 	<p><b>Protective Housing - "Wet Suit"</b></p> 
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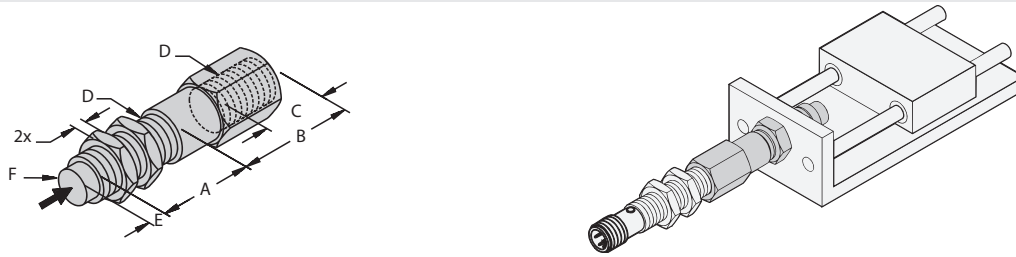
Accessories Selection Guide

We reserve the right to make technical alterations without prior notice.

	<b>Smart Plugs</b>	<b>Cable Glands</b>
		
<b>Pages</b>	<b>I15</b>	<b>I16</b>
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	<b>Test Box</b>	<b>Limit Value Monitor</b>
		
<b>Pages</b>	<b>I23</b>	<b>I23</b>

# Accessories

## Die Protector



Part Number	ID Number	A	B	C	D	E	F
DP-08-25-08	A2521	0.98 [25.0]	1.25 [31.8]	0.66 [16.7]	M8x1	0.17 [4.3]	0.44 [11.1]
DP-08-50-08	A9473	1.97 [50.0]	1.25 [31.8]	0.66 [16.7]	M8x1	0.17 [4.3]	0.44 [11.1]
DP-12-25-12	A2519	0.98 [25.0]	1.25 [31.8]	0.66 [16.7]	M12x1	0.17 [4.3]	0.62 [15.7]
DP-12-50-12	A9169	1.97 [50.0]	1.25 [31.8]	0.66 [16.7]	M12x1	0.17 [4.3]	0.62 [15.7]
DP-18-25-18	A2520	0.98 [25.0]	1.25 [31.8]	0.66 [16.7]	M18x1	0.17 [4.3]	0.87 [22.1]
DP-18-75-18	A9527	2.95 [75.0]	1.25 [31.8]	0.66 [16.7]	M18x1	0.17 [4.3]	0.87 [22.1]

Inches [mm]

Spring rate for plunger actuation: 9 oz

### Recommended Sensors for Die Protector

Die Protector	DP-08-25-08	DP-12-25-12	DP-18-25-18
Sensors	Bi1.5U-EG08-AP6X Bi2-EG08-AP6X	Bi2-G12-AP6X-H1141	Bi5-G18-AP6X (When not fully engaged)

Note: Works with all shielded NPN, PNP, quick disconnect or potted-in-cable versions of the listed part numbers.

## Whisker Probe



Part Number	ID Number	A	B	C	D	E	F	G	H	J
WP-08-50-03	A2527	3.92 [99.6]	1.25 [31.8]	0.15 [3.8]	M8x1	0.13 [3.2]	2.00 [50.8]	1.95 [49.5]	0.44 [11.1]	0.86 [21.8]
WP-12-50-03	A2528	3.92 [99.6]	1.25 [31.8]	0.15 [3.8]	M12x1	0.13 [3.2]	2.00 [50.8]	1.95 [49.5]	0.44 [11.1]	0.86 [21.8]
WP-12-50-06	A2529	3.92 [99.6]	1.25 [31.8]	0.15 [3.8]	M12x1	0.25 [6.4]	2.00 [50.8]	1.95 [49.5]	0.62 [15.8]	0.71 [18.0]
WP-12-100-06	A9195	5.91 [150]	1.25 [31.8]	0.15 [3.8]	M12x1	0.25 [6.4]	4.00 [102]	1.95 [49.5]	0.62 [15.8]	0.71 [18.0]

Inches [mm]

### Recommended Sensors for Whisker Probe

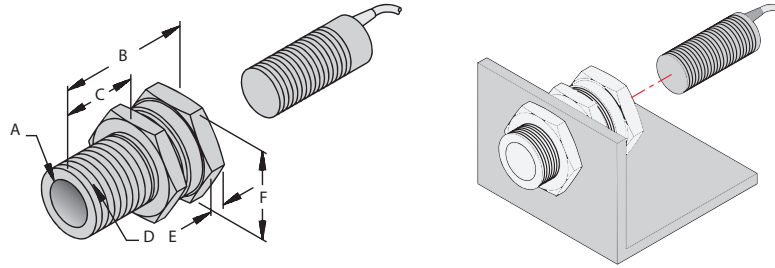
Whisker Probe	WP-08-50-03	WP-12-50-03	WP-12-50-06
Sensors	Bi1-G08-AN6 Bi1.5-G08-AP6X	Bi1.5U-EG08-AP6X Bi2-EG08-AP6X	Bi2-G12-AP6X-H1141 Bi3U-M12-AP6X-H1141

Note: Works with all shielded NPN, PNP, quick disconnect or potted-in-cable versions of the listed part numbers. Not for use with Upro3.

We reserve the right to make technical alterations without prior notice.

## Accessories

### Quick Mount



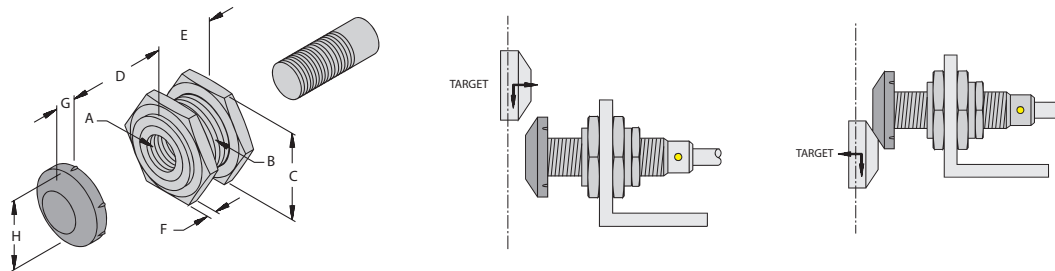
Part Number	ID Number	Features	A	B	C	D	E	F
QM-08	A2511	—	0.32 [8.18]	1.28 [32.4]	0.69 [17.5]	M12x1	0.15 [3.85]	0.67 [16.9]
QM-08L	A2512	Ext. Length	0.32 [8.18]	1.90 [48.0]	1.34 [34.0]	M12x1	0.15 [3.85]	0.67 [16.9]
QM-12	A2513	—	0.48 [12.1]	1.34 [33.7]	0.77 [19.5]	M16x1	0.16 [4.01]	0.86 [21.8]
QM-12L	A2514	Ext. Length	0.48 [12.1]	1.76 [44.8]	1.18 [30.0]	M16x1	0.16 [4.01]	0.86 [21.8]
QM-12L-T	A2542	Ext. Length, PTFE	0.48 [12.1]	1.76 [44.8]	1.18 [30.0]	M16x1	0.16 [4.01]	0.86 [21.8]
QM-18	A2515	—	0.71 [18.1]	1.52 [38.5]	0.79 [20.0]	M24x1.5	0.19 [4.95]	1.18 [30.0]
QM-18L	A2516	Ext. Length	0.71 [18.1]	2.28 [58.0]	1.57 [40.0]	M24x1.5	0.19 [4.95]	1.18 [30.0]
QM-18L-T	A2543	Ext. Length, PTFE	0.71 [18.1]	2.28 [58.0]	1.57 [40.0]	M24x1.5	0.19 [4.95]	1.18 [30.0]
QM-30	A2517	—	1.19 [30.1]	1.50 [35.0]	0.79 [20.0]	M36x1.5	0.24 [6.13]	1.61 [41.0]
QM-30L	A2518	Ext. Length	1.19 [30.1]	2.28 [58.0]	1.57 [40.0]	M36x1.5	0.24 [6.13]	1.61 [41.0]

Inches [mm]

Material: Nickel plated brass

Note: not for use with stainless steel front face sensors.

### Cushion Mount



Part Number	ID Number	A	B	C	D	E	F	G	H	Cap Part Number	Cap ID Number
		Inside Thread	Outside Thread	Across Flats	Max Allowable Overtravel						
CM-08	A2503	M8x1	M16x1.5	0.88 [22.2]	0.35 [8.89]	0.87 [22.1]	0.16 [3.94]	0.21 [5.33]	0.60 [15.2]	CAP-EN08	A6100
CM-08N	A2504										CAP-EN08N
CM-12	A2505	M12x1	M22x1.5	1.12 [28.6]	0.40 [10.0]	0.87 [22.1]	0.16 [4.06]	0.245 [6.22]	0.90 [22.9]	CAP-EN12	A6300
CM-12N	A2506										CAP-EN12N
CM-18	A2507	M18x1	M30x1.5	1.41 [35.8]	0.49 [12.4]	1.17 [29.7]	0.20 [5.10]	0.33 [8.38]	1.18 [30.0]	CAP-EN18	A6400
CM-18N	A2508										CAP-EN18N
CM-30	A2509	M30x1.5	M47x1.5	2.01 [51.0]	0.57 [14.5]	1.47 [37.3]	0.20 [5.10]	0.30 [7.62]	1.72 [43.7]	CAP-EN30	A 9567
CM-30N	A2510										—

Inches [mm]

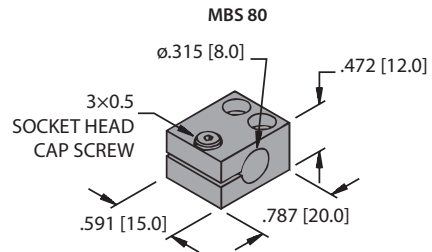
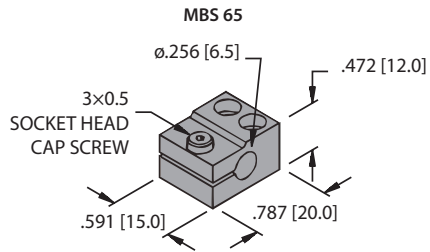
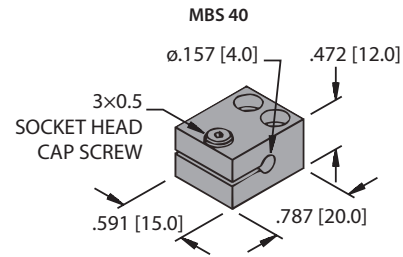
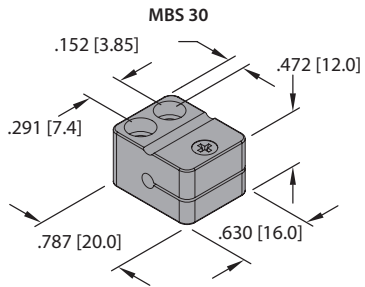
Material: Anodized aluminum

Cap: Plastic

Stainless Versions available (CM-\*NSS)

# Accessories

## Mounting Clamps



Part Number	ID Number	Barrel Diameter
MBS30	6948000	3.0 mm
MBS40	69477	4.0 mm
MBS65	69478	6.5 mm
MBS80	69479	8.0 mm

Inches [mm]

Material: Aluminum

Finish: Black anodized

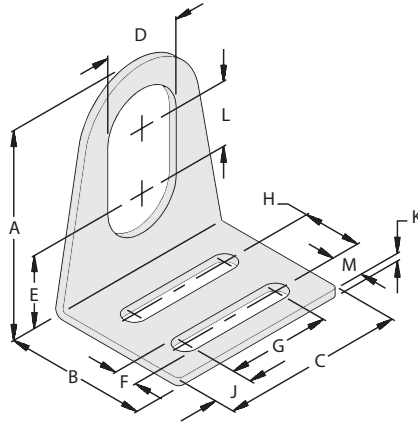
\*For use with smooth barrel Picoprox® sensors

We reserve the right to make technical alterations without prior notice.



## Accessories

### Mounting Brackets

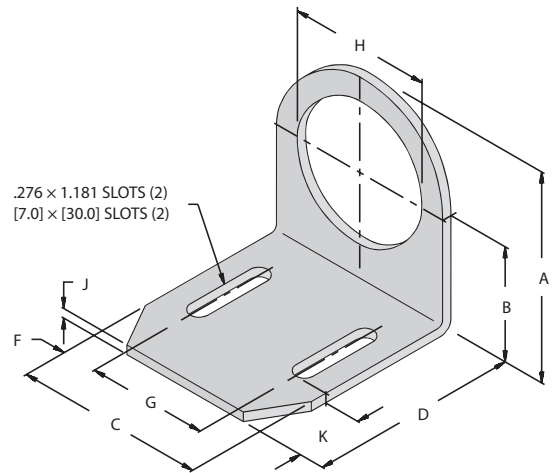
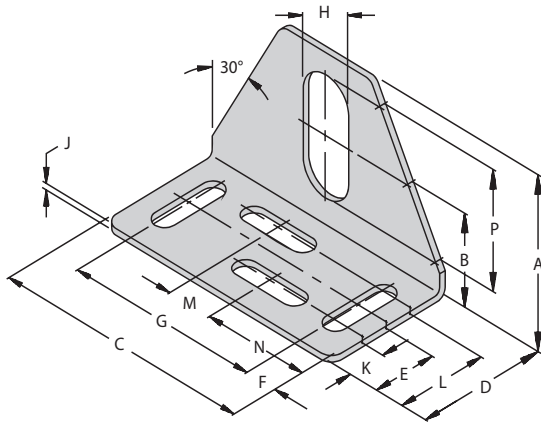


Part Number	ID Number	Barrel Diameter	A	B	C	D	E	F	G	H	J	K	L	M
MBSS-08	A2522	8 mm	1.00 [25.4]	1.13 [28.7]	1.25 [31.8]	0.34 [8.74]	0.31 [7.92]	0.22 [5.54]	0.63 [15.9]	0.47 [11.9]	0.31 [7.92]	0.070 [1.78]	0.37 [9.53]	0.28 [7.14]
MBSS-12	A2523	12 mm	1.50 [38.1]	1.37 [34.8]	1.50 [38.1]	0.50 [12.7]	0.55 [13.9]	0.22 [5.54]	0.75 [19.1]	0.56 [14.3]	0.37 [9.53]	0.070 [1.78]	0.50 [12.7]	0.31 [7.92]
MBSS-18	A2524	18 mm	2.00 [50.8]	1.37 [34.8]	1.75 [44.5]	0.75 [19.1]	0.22 [19.1]	0.22 [5.54]	1.00 [25.4]	0.56 [14.3]	0.37 [9.53]	0.070 [1.78]	0.62 [15.9]	0.31 [7.92]
MBSS-30	A2525	30 mm	2.50 [63.5]	1.75 [44.5]	2.25 [57.2]	1.18 [30.5]	0.91 [23.0]	0.22 [5.54]	1.37 [34.8]	0.81 [20.6]	0.44 [11.2]	0.085 [2.16]	0.75 [19.1]	0.41 [10.3]
MBSS-47	A2526	47 mm	3.50 [88.9]	2.00 [50.8]	2.50 [63.5]	1.87 [47.5]	1.50 [38.1]	0.22 [5.54]	1.50 [38.1]	1.00 [25.4]	0.50 [12.7]	0.120 [3.05]	0.75 [19.1]	0.50 [12.7]

Inches [mm]

Material: 304 stainless steel

We reserve the right to make technical alterations without prior notice.



Part Number	ID Number	Barrel Diameter	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MB-8	A3130-1	8 mm	1.26 [32.0]	0.66 [16.7]	2.00 [50.8]	1.00 [25.4]	0.45 [11.5]	0.30 [7.5]	1.41 [35.8]	0.33 [8.4]	0.06 [1.5]	0.24 [6.0]	0.67 [17.0]	0.35 [8.8]	0.83 [21.0]	.84 [21.4]
MB-12	A3130	12 mm	1.63 [41.5]	0.87 [22.15]	2.50 [63.5]	1.25 [31.8]	0.61 [15.5]	0.31 [7.9]	1.88 [47.8]	0.50 [12.7]	0.06 [1.5]	0.35 [9.0]	0.87 [22.0]	0.45 [11.5]	1.02 [26.0]	1.13 [28.7]
MB-18	A3135	18 mm	1.63 [41.5]	0.79 [20.0]	2.50 [63.5]	1.25 [31.8]	0.61 [15.5]	0.31 [7.9]	1.88 [47.8]	0.75 [19.1]	0.06 [1.5]	0.35 [9.0]	0.87 [22.0]	0.45 [11.5]	1.04 [26.3]	1.15 [29.1]
MB-30	A3140	30 mm	2.62 [66.5]	1.32 [33.5]	4.25 [108.0]	1.75 [44.5]	0.88 [22.4]	0.37 [9.5]	3.50 [88.9]	1.19 [30.2]	0.07 [1.8]	0.63 [16.0]	1.14 [29.0]	1.18 [30.0]	1.54 [39.0]	2.06 [52.2]
MW47	69452	47 mm	2.74 [69.5]	1.48 [37.5]	2.52 [64.0]	252 [64.0]	—	0.47 [12.0]	1.58 [40.0]	1.87 [47.5]	0.12 [3.00]	0.63 [16.0]	—	—	—	—

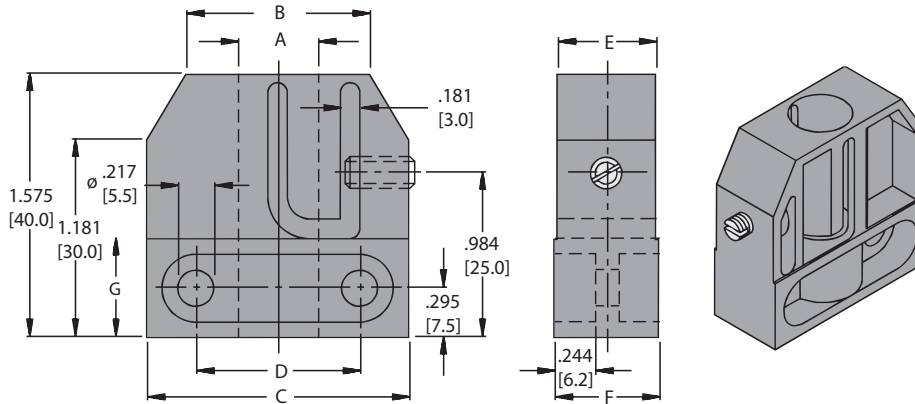
Inches [mm]

Material: Cold roll steel

Finish: Galvanized

# Accessories

## Mounting Clamps



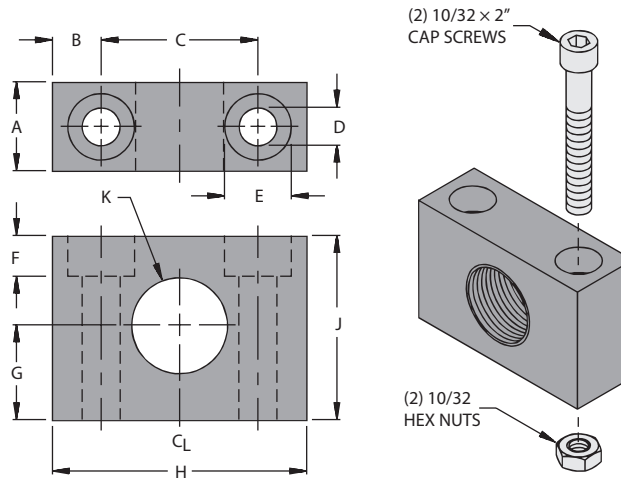
Part Number	ID Number	Barrel Diameter	A	B	C	D	E	F	G
BS 12	69470	12 mm	0.48 [12.2]	1.10 [28.0]	1.57 [40.0]	0.98 [25.0]	0.59 [15.0]	0.63 [16.0]	0.59 [15.0]
BS 18	69471	18 mm	0.72 [18.2]	1.30 [33.0]	1.77 [45.0]	1.18 [30.0]	0.83 [21.0]	0.87 [22.0]	0.59 [15.0]

Inches [mm]

Material: PA 66-GF

\*For use with 12 and 18 mm threaded barrel sensors

We reserve the right to make technical alterations without prior notice.



Part Number	ID Number	Barrel Diameter	A	B	C	D	E	F	G	H	J	K
MB-S12	A3150	12 mm	0.44 [11.2]	0.24 [6.2]	0.77 [19.6]	0.20 [5.0]	0.34 [8.7]	0.20 [5.0]	0.45 [11.4]	1.26 [32.0]	0.91 [23.0]	M12x1
MB-S18	A3155	18 mm	0.63 [16.0]	0.30 [7.6]	1.20 [30.5]	0.22 [5.5]	0.38 [9.6]	0.25 [6.4]	0.57 [14.5]	1.80 [45.8]	1.15 [29.3]	M18x1

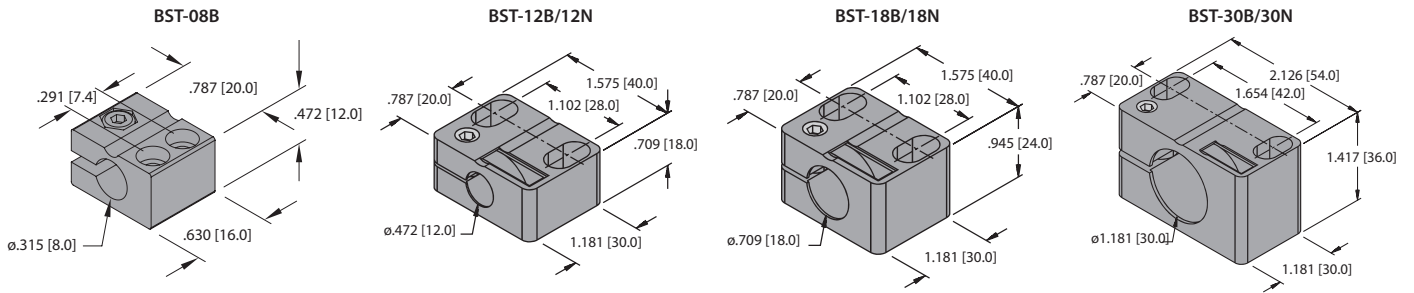
Inches [mm]

Material: Delrin

\*For use with 12 and 18 mm threaded barrel sensors. Mounting hardware included.

Accessories

**Mounting Clamps**



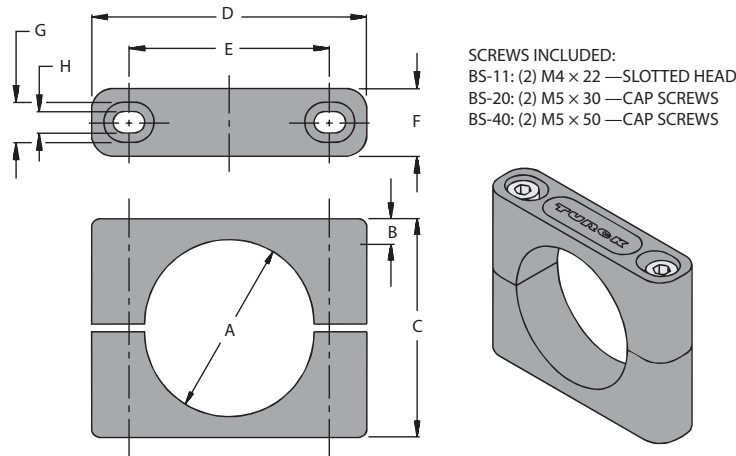
Part Number	ID Number	Barrel Diameter
BST-08B	6947210	8 mm
BST-12B	6947212	12 mm
BST-12N	6947213	12 mm
BS-18B	6947214	18 mm
BST-18N	6947215	18 mm
BST-30B	6947216	30 mm
BST-30N	6947217	30 mm

Inches [mm]

B Version comes with dead stop for flush mounted sensors

Material: PA 66-6F

We reserve the right to make technical alterations without prior notice.



Part Number	ID Number	Barrel Diameter	A	B	C	D	E	F	G	H
BS-11	A3075	11 mm	0.43 [11.0]	0.20 [5.0]	0.79 [20.0]	1.26 [32.0]	0.79 [0.0]	0.47 [12.0]	0.32 [8.2]	0.17 [4.3]
BS 20	69464	20 mm	0.79 [20.0]	0.24 [6.0]	1.18 [30.0]	1.81 [46.0]	1.22 [31.0]	0.59 [15.0]	0.37 [9.5]	0.21 [5.3]
BS 40	69466	40 mm	1.57 [40.0]	0.24 [6.0]	1.97 [50.0]	2.56 [65.0]	1.87 [47.5]	0.63 [16.0]	0.37 [9.5]	0.21 [5.3]

Inches [mm]

Bracket Material: PBT

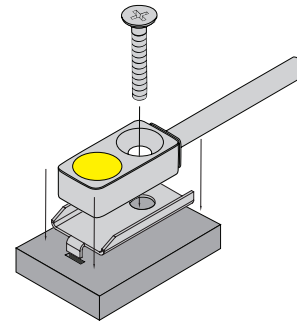
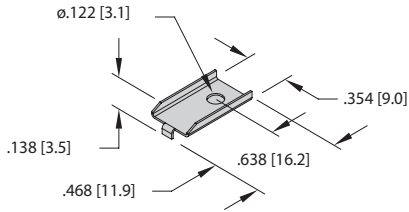
Screw Bracket: Galvanized zinc

\*For use with 11, 20, and 40 mm smooth plastic barrel sensors

# Accessories

## Mounting Brackets

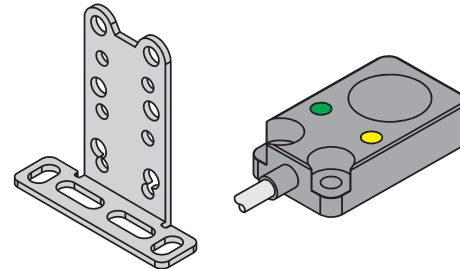
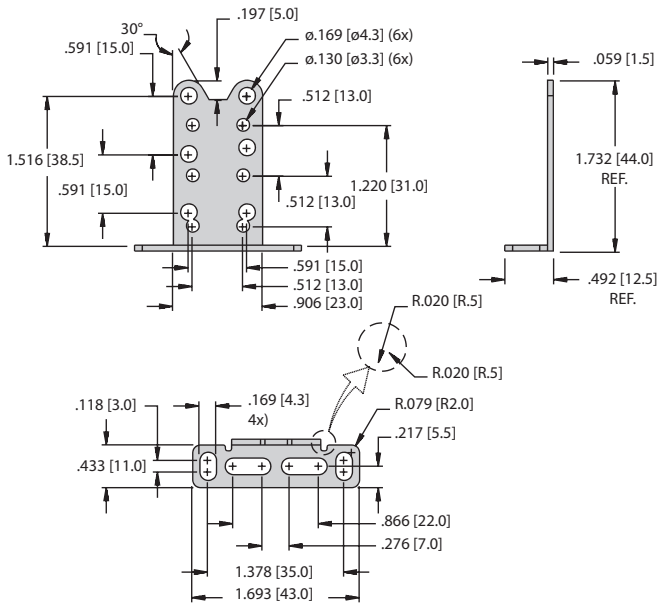
MW-Q4.7/5.5



Part Number	ID Number
MW-Q4.7/Q5.5	6945013

Inches [mm]  
 Material: Stainless steel  
 \*For surface mounting of Q4.7 or Q5.5 sensors

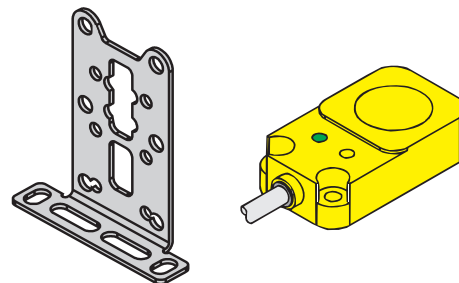
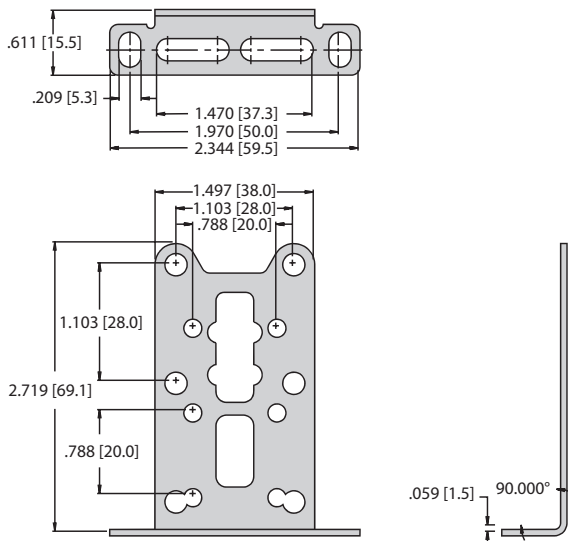
MB-Q08/Q10



Part Number	ID Number
MB-Q08/Q10	A3563

Inches [mm]  
 Material: Stainless steel  
 \*For use with Q08 or Q10 sensors

MB-Q14/20



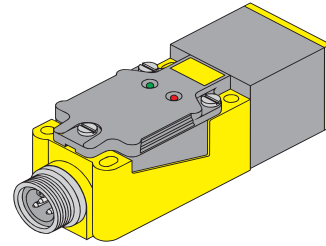
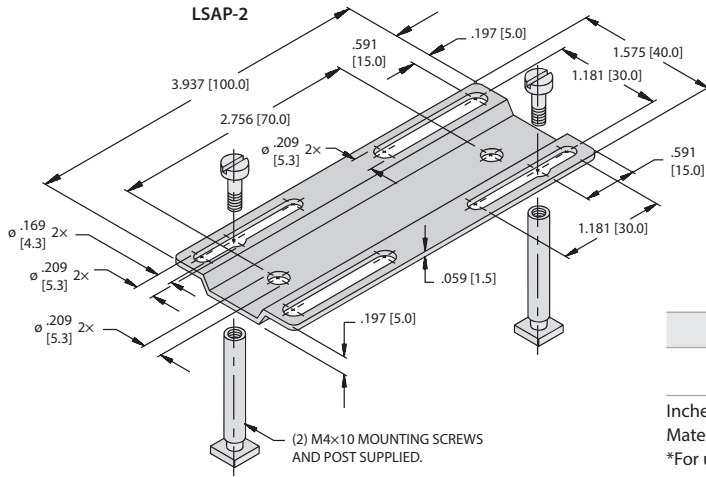
Part Number	ID Number
MB-Q14/Q20	A3147

Inches [mm]  
 Material: Stainless steel  
 \*For use with Q14 or Q20 sensors

We reserve the right to make technical alterations without prior notice.

Accessories

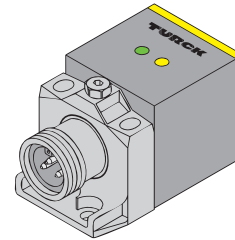
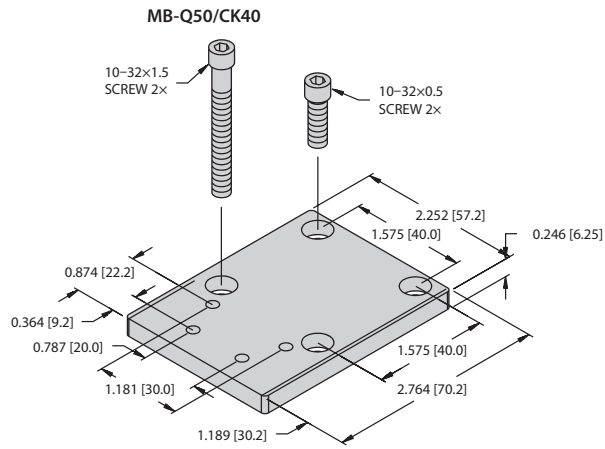
**Mounting Brackets**



Part Number	ID Number
LSAP-2	6942910

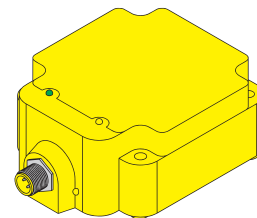
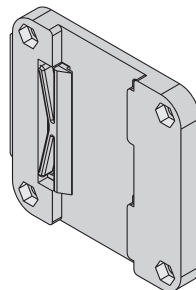
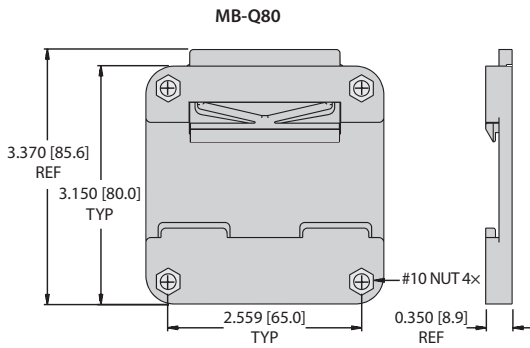
Inches [mm]  
 Material: Stainless steel  
 \*For use with CP40

We reserve the right to make technical alterations without prior notice.



Part Number	ID Number
MB-Q50/CK40	A3148

Inches [mm]  
 Material: Stainless steel  
 \*For use with Q50 or CK40 sensors

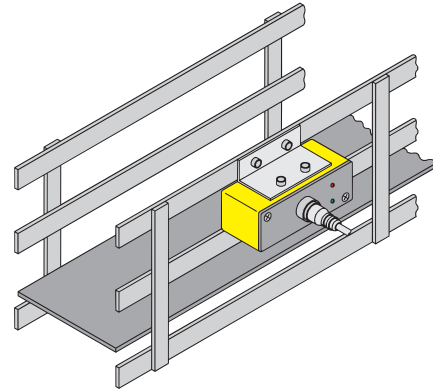
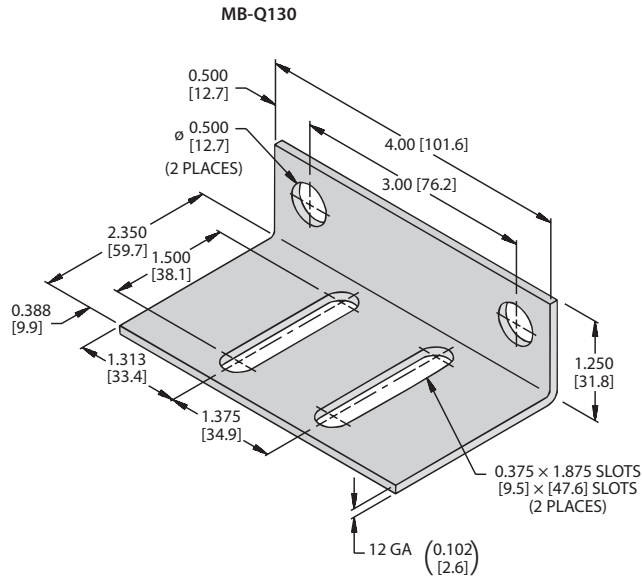


Part Number	ID Number
MB-Q80	A3144

Inches [mm]  
 Bracket Material: Plastic  
 Insert Material: Stainless steel  
 \*For use with Q80 sensors

# Accessories

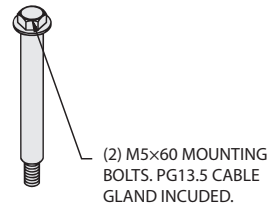
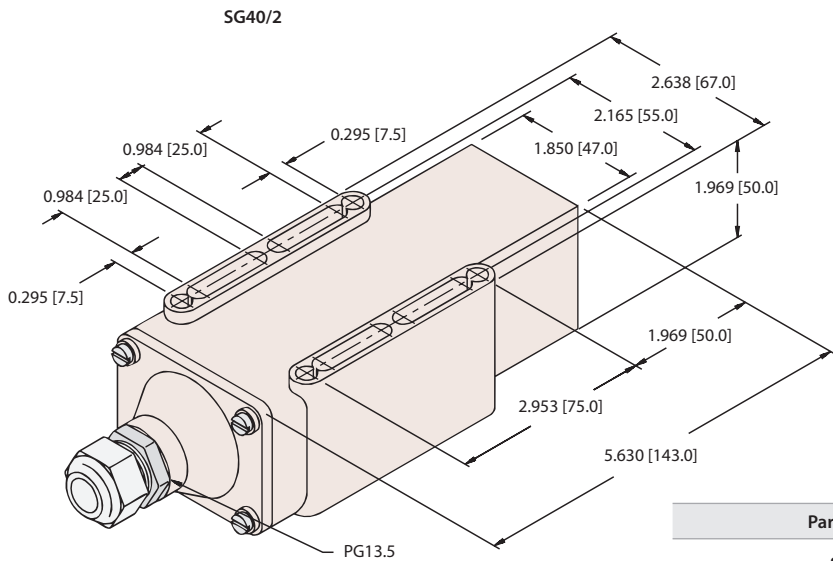
## Mounting Brackets



Part Number	ID Number
MB-Q130	A3145

Inches [mm]  
 Material: Stainless steel  
 \*For use with Q130 sensors

## Protective Housing "Wet Suit"



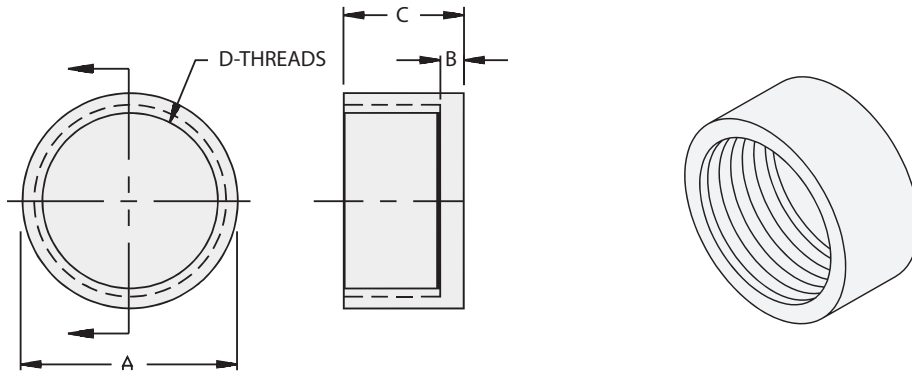
Part Number	ID Number
SG40/2	69497

Inches [mm]  
 Material: Plastic, Ultem  
 \*Recommended cable diameters: 5 - 12 mm.  
 For use with CP40 sensors. For extreme protection class IP68 temperatures from -30 to 170 °C (338°F), and long term submersion up to 5 meters. Especially resistant to UV-radiation and ozone.

We reserve the right to make technical alterations without prior notice.

Accessories

PTFE / Ceramic Caps



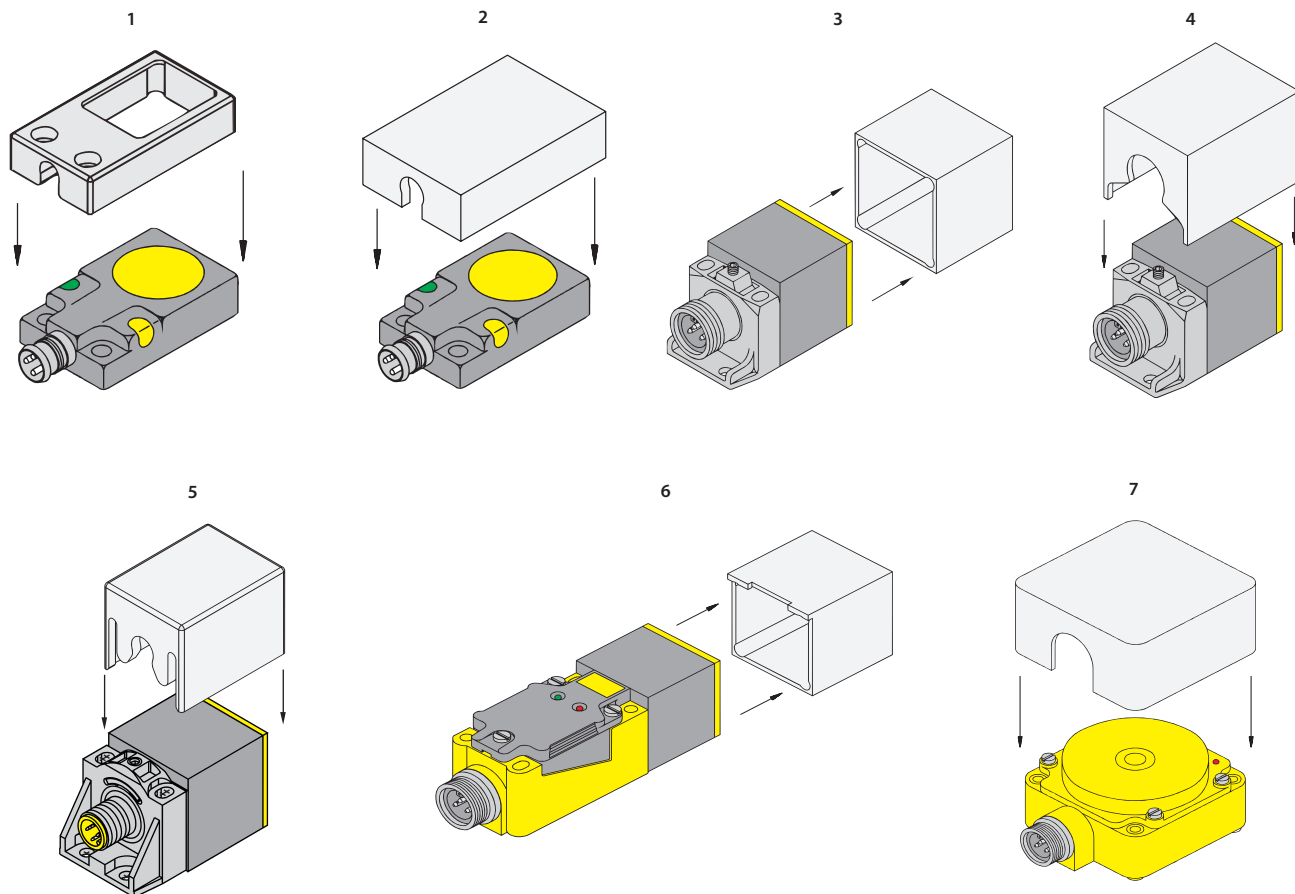
We reserve the right to make technical alterations without prior notice.

Part Number	ID Number	Barrel Diameter	Material	A	B	C	D
CAP 08-PTFE	A3055-1	8 mm Embeddable	PTFE	0.375 [9.5]	0.03 [0.7]	0.437 [11.1]	M8x1
CAP 08-DER	A9326	8 mm Embeddable	Delrin	0.375 [9.53]	0.03 [0.76]	0.437 [11.1]	M8x1
CAP 12-PTFE	6942930	12 mm Embeddable	PTFE	0.63 [16.0]	0.03 [0.7]	0.63 [16.0]	M12x1
CAP 12-CER	A2530	12 mm Embeddable	Ceramic	0.58 [14.7]	0.035 [.89]	0.35 [8.90]]	M12x1
CAP 12-DER	A9321	12 mm Embeddable	Delrin	0.58 [14.7]	0.035 [.89]	0.35 [8.90]	M12x1
CAP 12N-CER	A9129	12 mm Non-embeddable	Ceramic	0.58 [14.7]	0.035 [.89]	0.60 [15.2]	M12x1
CAP 12N-DER	A9322	12 mm Non-embeddable	Delrin	0.58 [14.7]	0.035 [.89]	0.60 [15.2]	M12x1
CAP 18-PTFE	A3055	18 mm Embeddable	PTFE	0.87 [22.0]	0.04 [1.0]	0.35 [9.0]	M18x1
CAP 18N-PTFE	A3056	18 mm Non-embeddable	PTFE	0.87 [22.0]	0.04 [1.0]	0.79 [20.0]	M18x1
CAP 18-CER	A2531	18 mm Embeddable	Ceramic	0.95 [24.1]	0.045 [1.14]	0.35 [8.90]	M18x1
CAP 18-DER	A9323	18 mm Embeddable	Delrin	0.95 [24.1]	0.045 [1.14]	0.35 [8.90]	M18x1
CAP 18N-CER	A3056-4	18 mm Non-embeddable	Ceramic	0.95 [24.1]	0.045 [1.14]	0.70 17.8	M18x1
CAP 18N-DER	A9324	18 mm Non-embeddable	Delrin	0.95 [24.1]	0.045 [1.14]	0.70 17.8	M18x1
CAP 30-PTFE	A3057	30 mm Embeddable	PTFE	1.34 [34.0]	0.05 [1.2]	0.35 [9.0]	M30x1.5
CAP 30N-PTFE	A3058	30 mm Non-embeddable	PTFE	1.34 [34.0]	0.05 [1.2]	1.14 [29.0]	M30x1.5
CAP 30-CER	A2532	30 mm Embeddable	Ceramic	1.50 [38.1]	0.08 [2.03]	0.39 [9.90]	M30x1.5
CAP 30-DER	A9325	30 mm Embeddable	Delrin	1.50 [38.1]	0.08 [2.03]	0.39 [9.90]	M30x1.5
CAP 30N-DER	A9320	30 mm Non-embeddable	Delrin	1.50 [38.1]	0.08 [2.03]	1.00 [25.4]	M30x1.5
CAP 47-PTFE	A3060	47 mm Embeddable	PTFE	2.20 [55.8]	0.06 [1.6]	0.38 [9.7]	PG 36

Inches [mm]

# Accessories

## Protective Covers



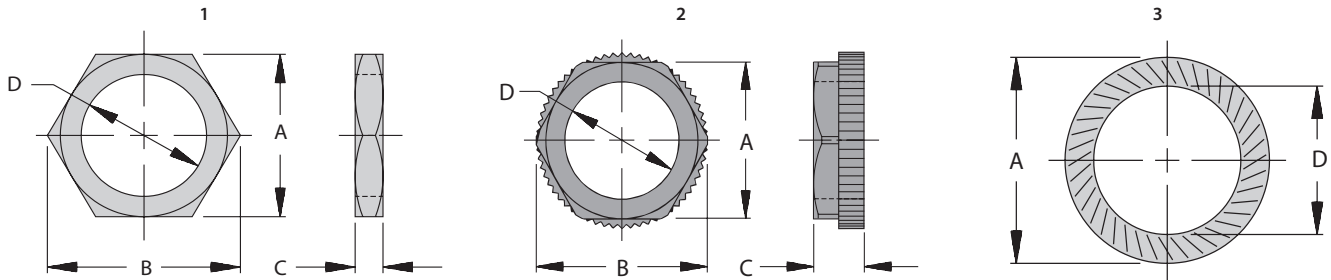
Part Number	ID Number	Material	For Use With Sensor Housing	Drawing Image
MBS-Q08TS	A9492	Nickel Plated Steel	Q08	1
T-Q08-T-MCC	A5155	PTFE	Q08	2
T-Q14-T-MCC	A5154	PTFE	Q14	2
T-Q20-T-MCC	A5156	PTFE	Q20	2
T-CK40-T-FC	A5202	PTFE	CK40	3
T-CK40-D-FC	A5160	Delrin	CK40	3
T-CK40-T-MCC	A5201	PTFE	CK40	4
T-CK40-T-MCB	A9126	PTFE	CK40	5
T-CP40-T-C	A5204	PTFE	CP40	6
T-CP80-T	A5207	PTFE	CP80	7

We reserve the right to make technical alterations without prior notice.



## Accessories

### Locknuts and Washers



Part Number	ID Number	Barrel Diameter	Materials	A	B	C	D	Dimension Drawing
Locknut-EG05	A3119	5 mm	SS	0.28 [7.0]	0.32 [8.0]	0.10 [2.5]	M5x0.5	1
Locknut-SS08	A3123-08	8 mm	SS	0.51 [13.0]	0.58 [14.7]	0.16 [4.0]	M8x1	1
Locknut-M8X1PTFE	A9696	8 mm	PTFE	0.51 [13.0]	0.58 [14.7]	0.16 [4.0]	M8x1	1
Locknut-M12	A3122	12 mm	CPB	0.67 [17.0]	0.76 [19.4]	0.16 [4.0]	M12x1	1
Locknut-MT12	A3109	12 mm	PTFE	0.67 [17.0]	0.76 [19.4]	0.16 [4.0]	M12x1	1
Locknut-SS12	A3123	12 mm	SS	0.67 [17.0]	0.76 [19.4]	0.16 [4.0]	M12x1	1
Locknut-P12	A3446	12 mm	PA	0.67 [17.0]	0.75 [19.0]	0.32 [8.0]	M12x1	2
Locknut-M18	A3125	18 mm	CPB	0.94 [24.0]	1.08 [27.4]	0.16 [4.0]	M18x1	1
Locknut-MT18	A3108	18 mm	PTFE	0.94 [24.0]	1.08 [27.4]	0.16 [4.0]	M18x1	1
Locknut-SS18	A3123-0	18 mm	SS	0.94 [24.0]	1.08 [27.4]	0.16 [4.0]	M18x1	1
Locknut-P18	A3448	18 mm	PA	0.94 [24.0]	1.06 [27.0]	0.32 [8.0]	M18x1	2
Locknut-M30	A3126	30 mm	CPB	1.42 [36.0]	1.63 [41.4]	0.20 [5.0]	M30x1.5	1
Locknut-MT30	A3107	30 mm	PTFE	1.42 [36.0]	1.63 [41.4]	0.20 [5.0]	M30x1.5	1
Locknut-SS30	A3123-1	30 mm	SS	1.42 [36.0]	1.63 [41.4]	0.20 [5.0]	M30x1.5	1
Locknut-P30	A3450	30 mm	PA	1.42 [36.0]	1.58 [40.1]	0.39 [10.0]	M30x1.5	2
Locknut-PG36	A3440	47 mm	CPB	2.01 [51.1]	2.20 [56.0]	0.20 [5.0]	PG36	1
LW-05	A900066	5 mm	SS	0.39 [10]	N/A	N/A	0.21 [5.3]	3
LW-08	A3124	8 mm	SS	0.55 [14]	N/A	N/A	0.32 [8.2]	3
LW-12	A3127	12 mm	Zinc	0.70 [17.8]	N/A	N/A	0.52 [13.2]	3
LW-18	A3128	18 mm	Zinc	1.06 [26.8]	N/A	N/A	0.76 [19.3]	3
LW-30	A3129	30 mm	Zinc	1.76 [44.8]	N/A	N/A	1.26 [32.0]	3


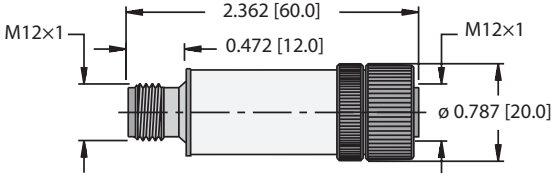
Inches [mm]

\*For use with threaded barrel sensors

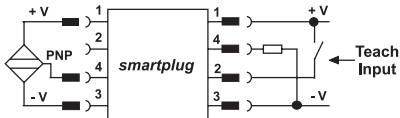
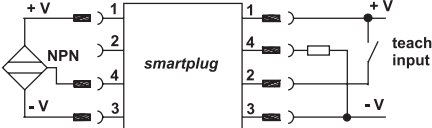
We reserve the right to make technical alterations without prior notice.

# Accessories

## Smart Plugs

Housing Style	Dimension Drawing
	<p>A</p> 

Add function to existing installations. Solve control problems quickly in the field. Simple plug-in installation - uses industry standard M12x1 4-pin connectors (Eurofast). Programmed through "teach" input - Pin 2. LED aids programming.

Wiring Diagrams	
<p>1</p> 	<p>2</p> 

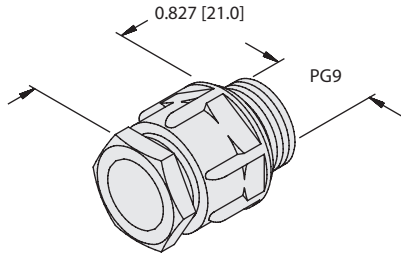
Technical Data	
<p>Operating Voltage: 10 - 30 VDC            Own Current Consumption: &lt; 10 mA            Input Resistance: &gt; 10 kΩ            Max. Input Frequency: 10 kHz            Min. Response Time: 0.1 ms            Max. Output Current: 400 mA, Short-circuit proof</p>	<p>Ambient Temperature Range: 0 to 60 °C (32 to 140 °F)            Display: Red LED            Housing Material: Plastic PBTP/PA            Protection Standard: IP 67            Connection Input: 4-pin socket M12x1            Connection Output: 4-pin connector M12x1</p>

Part Number	ID Number	Teachable Function	Dimension Drawing	Wiring Diagram
SPC1-AP6X	A0620	Programmable pulse or interval counter. Adjustable N.O./N.C. Inverter	A	1
SPC1-AN6X	A0600	Programmable pulse or interval counter. Adjustable N.O./N.C. Inverter	A	2
SPF1-AP6X	A0622	Programmable over or under speed monitor.	A	1
SPF1-AN6X	A0602	Programmable over or under speed monitor.	A	2
SPN1-AP6-ARN6X	A0624	Converts a PNP input signal to an NPN output. Adjustable N.O./N.C. Inverter.	A	1
SPN1-AN6-ARP6X	A0604	Converts a NPN input signal to a PNP output. Adjustable N.O./N.C. Inverter.	A	2
SPT1-AP6X	A0626	Programmable timer for on-delay or off-delay between 1 and 65000 ms.	A	1
SPT1-AN6X	A0606	Programmable timer for on-delay or off-delay between 1 and 65000 ms.	A	2

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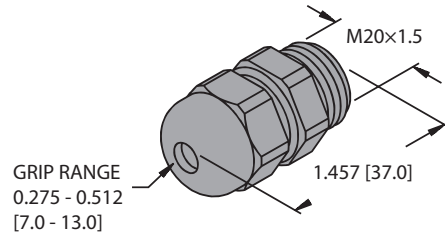
Accessories

**Cable Glands**



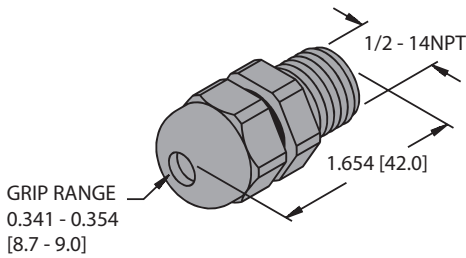
Part Number	ID Number
Cable Gland PG 9	A3054

Inches [mm]  
 Material: Polyamide plastic  
 Recommended Cable Style: 18 and 20 AWG  
 \*For use with integral terminal chamber style sensors



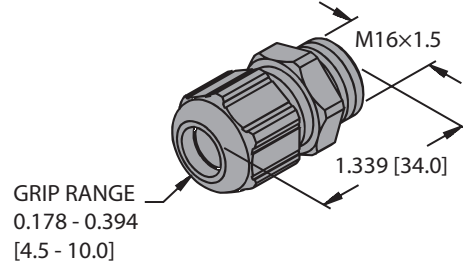
Part Number	ID Number
Cable Gland M20	A0936

Inches [mm]  
 Material: Polyamide plastic  
 \*For use with integral terminal chamber style sensors



Part Number	ID Number
Cable Gland 1/2 - 14NPT	A3480

Inches [mm]  
 Material: Polyamide plastic  
 Recommended Cable Style: 18 and 20 AWG  
 \*For use with integral terminal chamber style sensors



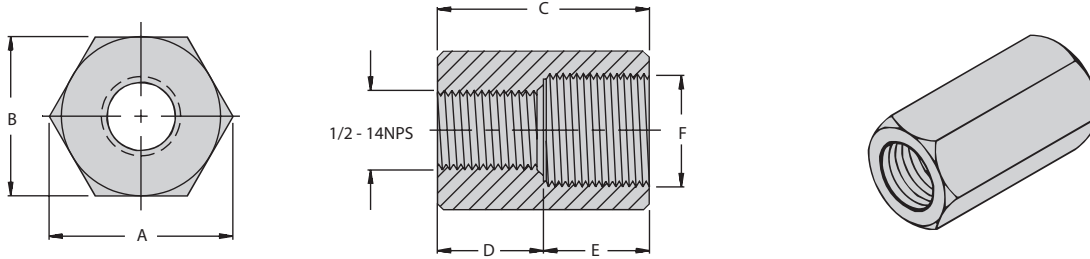
Part Number	ID Number
Cable Gland M16X1.5	A9348

Inches [mm]  
 Material: Polyamide plastic  
 Recommended Cable Style: 18-24 AWG  
 \*For use with integral terminal chamber style sensors

We reserve the right to make technical alterations without prior notice.

# Accessories

## Conduit Adapters



Part Number	ID Number	Barrel Diameter	A	B	C	D	E	F
TMF 12-G	A3310	12 mm	1.15 [29.2]	1.00 [25.4]	1.97 [50.0]	0.50 [12.7]	0.56 [14.2]	M12x1
TMF 18-G	A3320	18 mm	1.15 [29.2]	1.00 [25.4]	1.00 [25.4]	0.50 [12.7]	0.50 [12.7]	M18x1
TMF 30-G	A3345	30 mm	1.73 [44.0]	1.50 [38.1]	1.00 [25.4]	0.60 [15.2]	0.40 [10.2]	M30x1.5
TMF 47-G	A3360	47 mm	2.30 [58.4]	2.00 [50.8]	1.75 [44.5]	1.05 [26.7]	0.70 [17.8]	PG36

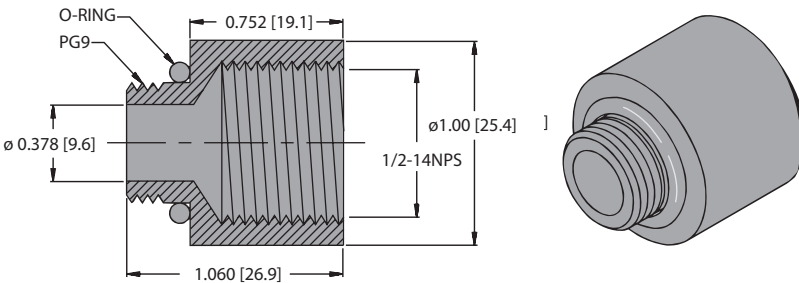
\*For use with G and P threaded barrel sensors

TMF 18-MS	A3330	18 mm	1.15 [29.2]	1.00 [25.4]	2.00 [50.8]	1.50 [38.1]	0.50 [12.7]	M18x1
TMF 30-MS	A3355	30 mm	1.73 [44.0]	1.50 [38.1]	2.00 [50.8]	0.60 [15.2]	1.40 [35.6]	M30x1.5

Inches [mm]

\*For use with M and S threaded barrel sensors

Material: Aluminum

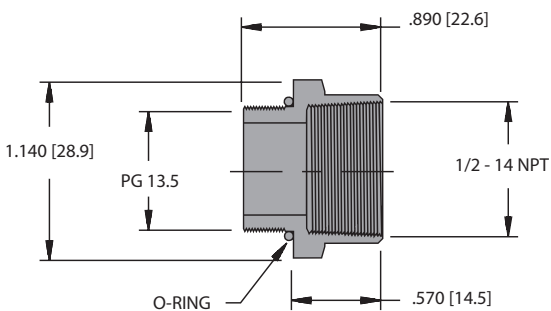


Part Number	ID Number
TMF 09-14	A3290

Inches [mm]

Material: Derlin

\*For use with terminal chamber style sensors



Part Number	ID Number
TMF 13.5-14	A4500
TMF 13.5-14/SS	A9639

Inches [mm]

Material: Nickel plated brass

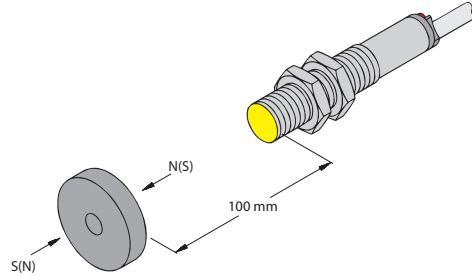
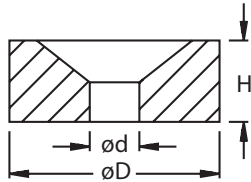
SS =Stainless steel

\*For use with integral terminal chamber style sensors

We reserve the right to make technical alterations without prior notice.

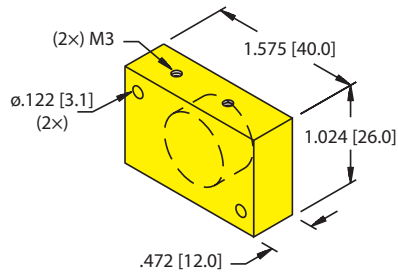
Accessories

**Actuation Magnets**



Part Number	ID Number	Diameter-D	Height-H	Drilling for mounting-d	Sensing Range To BIM-M12	Sensing Range To BIM-EG08
DMR15-6-3	6900216	15	6	3	36	32
DMR20-10-4	6900214	20	10	4	59	50
DMR31-15-5	6900215	31	15	5	90	78

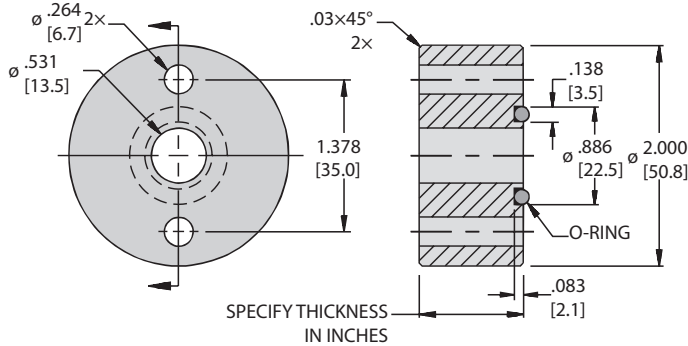
Inches [mm]  
Material: Barium ferrite (Oxyd 300)



Part Number	ID Number
DM-Q12	6900367

Inches [mm]  
Material: Plastic

**Spacer Plates**



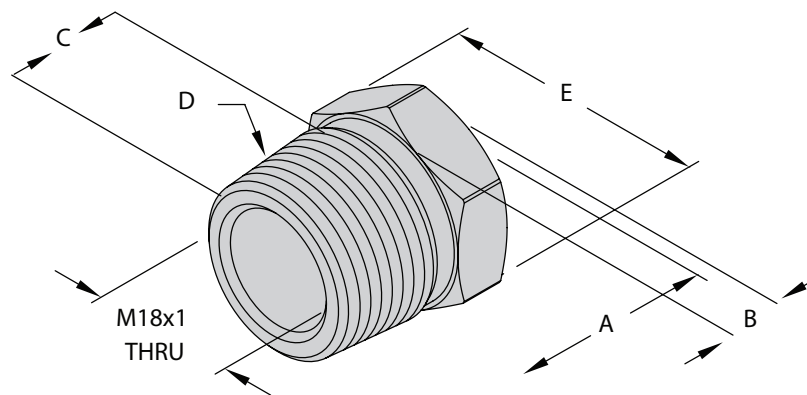
Part Number
SP-__- <sup>1)</sup> -C

Inches [mm]  
Material: Aluminum  
\*<sup>1)</sup> Add desired thickness in inches.  
Minimum thickness: 0.125", in .005 increments.  
For use with cylinder position sensors, CRS Series.

We reserve the right to make technical alterations without prior notice.

# Accessories

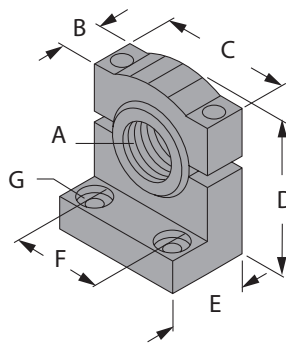
## Tank Adapter



Part Number	ID Number	Barrel Diameter	A	B	C	D	E
FSU-SS-M18-N3/4	A9983	18 mm	1.0625 [27.05]	0.32 [8.00]	0.750 [19.05]	3/4 - 14 NPT	1-1/16" HEX

Inches [mm]  
Material: Stainless steel

## Gimble Bracket For Ultrasonic Sensors



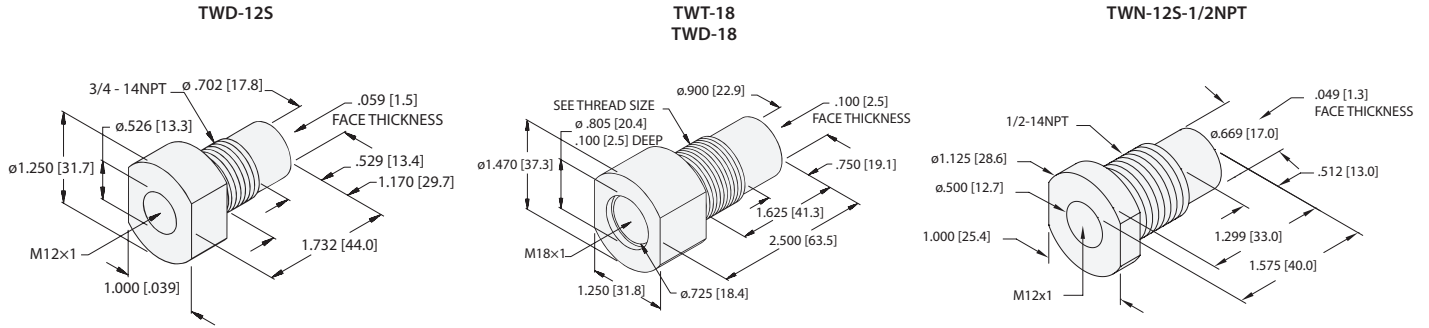
Part Number	ID Number	A	B	C	D	E	F	G
TMB18SF	7700396	M18x1	0.46 [11.71]	2.31 [50.8]	1.70 [43.2]	1.00 [25.4]	1.42 [36.1]	ø5
TMB30SC	7700400	M30x1.5	0.50 [12.7]	2.62 [66.5]	2.31 [58.7]	1.14 [29.0]	2.00 [50.8]	ø7

Inches [mm]  
Material: Polyester

We reserve the right to make technical alterations without prior notice.

Accessories

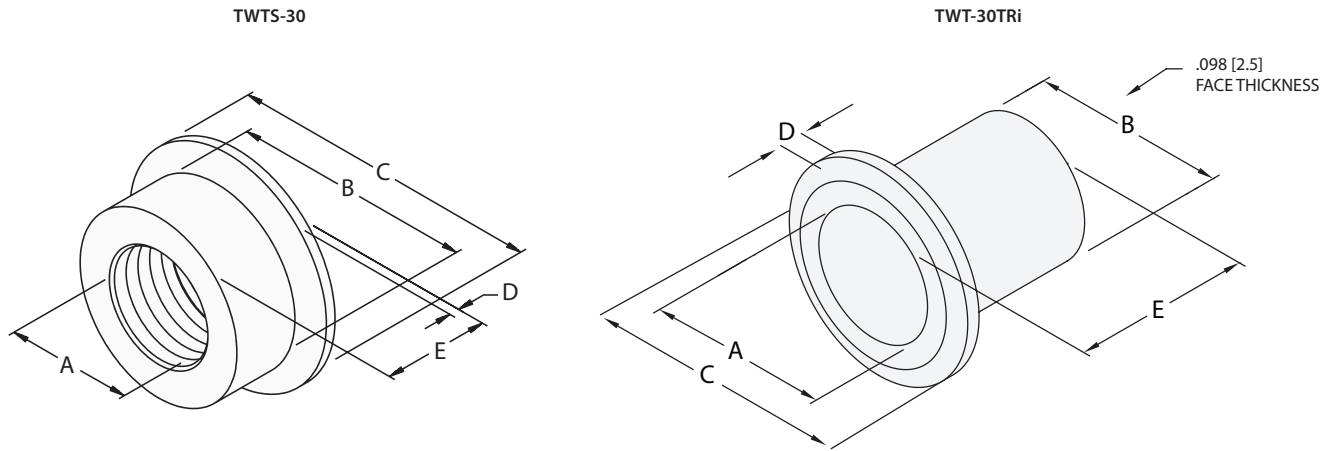
**Threaded Tank Wells**



Part Number	ID Number	Material	Thread Size	Drill Size	C
TWD-12S	A5051	Delrin	3/4 - 14 NPT	59/64	12 mm threaded capacitive sensors for liquid level sensing
TWN-12S-1/2 NPT	A900028	Nylon	1/2 - 14NPT	23/32	12 mm threaded capacitive sensors for liquid level sensing
TWD-18S	A5055	Delrin	3/4 - 14 NPT	59/64	18 mm threaded capacitive sensors for liquid level sensing
TWT-18S	A5050	PTFE	3/4 - 14 NPT	59/64	18 mm threaded capacitive sensors for liquid level sensing
TWD-18S-1	A5057	Delrin	1 - 11 1/2NPT	1 - 5/32	18 mm threaded capacitive sensors for liquid level sensing
TWT-18S-1	A5056	PTFE	1 - 11 1/2NPT	1 - 5/32	18 mm threaded capacitive sensors for liquid level sensing

Inches [mm]

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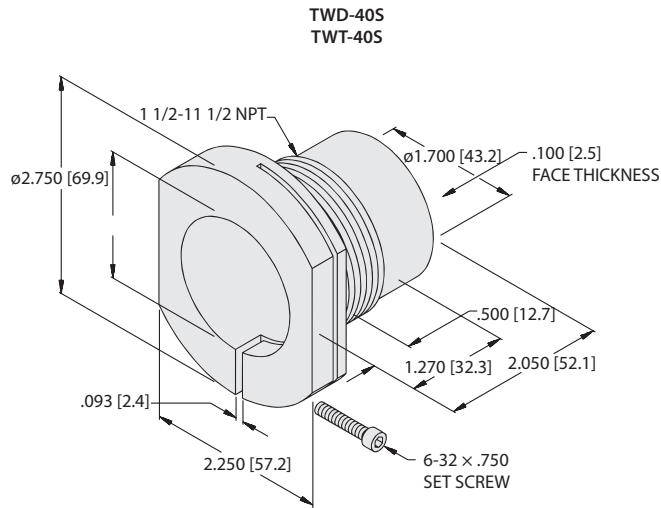
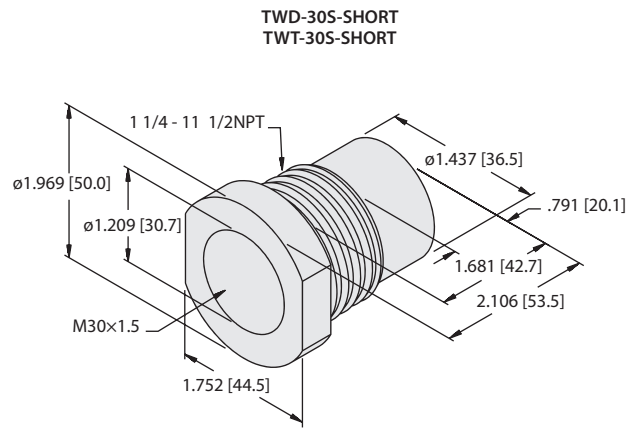
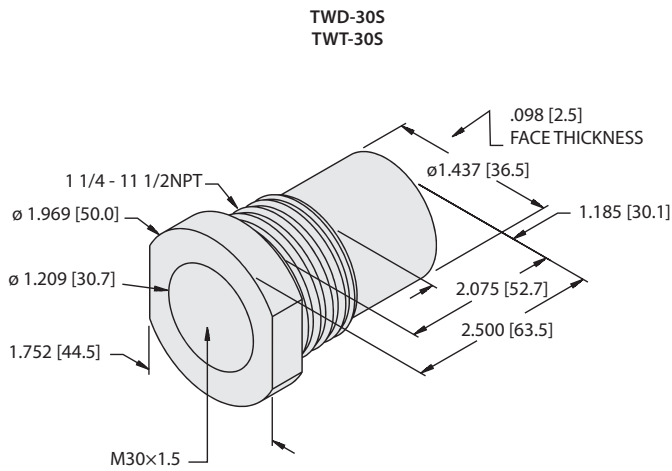


Part Number	ID Number	A	B	C	D	E
TWTS-1.5-30	A5077	M30x1.5	1.500 [38.1]	1.984 [50.4]	0.11 [2.80]	1.000 [25.4]
TWTS-2-30	A5076	M30x2.0	2.008 [51.0]	2.520 [64.0]	0.11 [2.80]	1.000 [25.4]
TWT-30TRI	A5061	M30x1.5	1.339 [34.0]	1.984 [50.4]	0.187 [4.7]	1.722 [43.7]

Inches [mm]

# Accessories

## Threaded Tank Wells



We reserve the right to make technical alterations without prior notice.

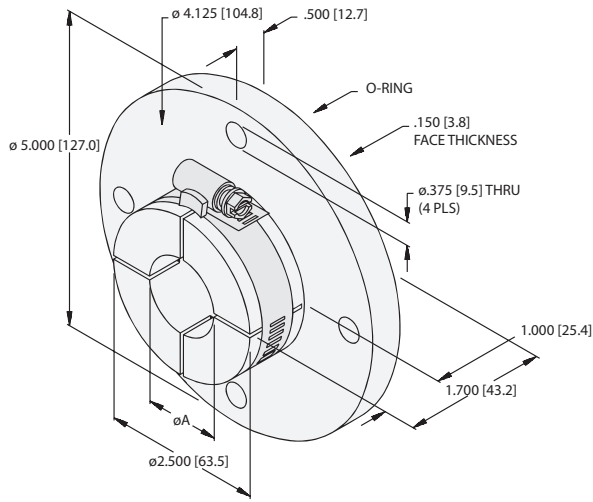
Part Number	ID Number	Barrel Diameter	Thread Size	Drill Size	Application
TWD-30S	A5065	Delrin	1 1/4 - 11 1/2 NPT	1 - 1/2	30 mm threaded capacitive sensors for liquid level sensing
TWT-30S	A5060	PTFE	1 1/4 - 11 1/2 NPT	1 - 1/2	30 mm threaded capacitive sensors for liquid level sensing
TWD-30S-SHORT	A5063	Delrin	1 1/4 - 11 1/2 NPT	1 - 1/2	30 mm threaded capacitive sensors for liquid level sensing
TWT-30S-SHORT	A5062	PTFE	1 1/4 - 11 1/2 NPT	1 - 1/2	30 mm threaded capacitive sensors for liquid level sensing
TWD-40S	A5075	Delrin	1 1/4 - 11 1/2 NPT	1 - 47/64	40 mm smooth capacitive sensors for liquid level sensing
TWT-40S	A5070	PTFE	1 1/4 - 11 1/2 NPT	1 - 47/64	40 mm smooth capacitive sensors for liquid level sensing

Inches [mm]



Accessories

**Bolt-on Tank Wells**

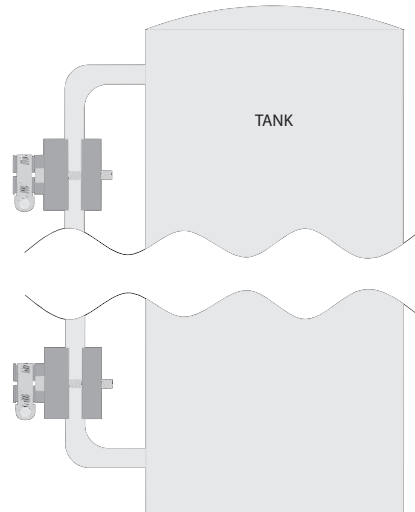
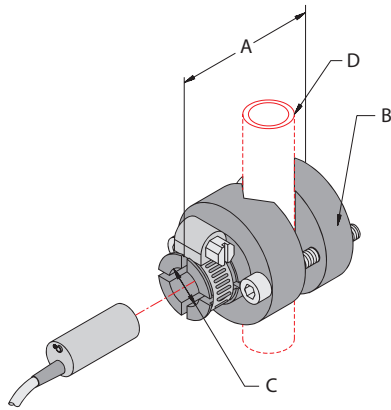


Part Number	ID Number	A
TWU-30B	A5005	1.181 [30.0]
TWU-40B	A5000	1.575 [40.0]

Inches [mm]  
 Material: UHMW/PE  
 Pressure Rating: 80 PSI  
 \*For use with 30 and 40 mm barrel sensors

We reserve the right to make technical alterations without prior notice.

**Bolt-on Site Bracket**



Part Number	ID Number	A	B	C	D
				(Non/or Threaded)	Across Flats
TSG-12	A2500	1.75 [44.5]	1.25 [31.8]	12 mm	0.37-0.81 [9.40-20.6]
TSG-18	A2501	1.90 [48.3]	1.48 [37.5]	18 mm	0.63-1.12 [16.0-28.4]
TSG-30	A2502	3.45 [87.6]	2.00 [50.8]	30 mm	1.00-1.75 [25.4-44.5]

Inches [mm]

## Accessories

### Test Box

TB3-CP80



TB4 V.2



TX1-Q20L60



USB-2-IOL-0002



Part Number	ID Number	Description
TB3-CP80	6967112	DC powered test box allows you to quickly test 2, 3, 4 wire DC sensors or Namur output sensors, includes batteries.
TB4 V.2	6967113	Analog test box for sensors with analog or switching outputs, includes batteries.
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors.
USB-2-IOL-0002	6825482	IO Link master with integrated USB interface for parameterization of IO Link compliant linear position sensors via PC.

### Limit Value Monitor

#### Functional Description:

The limit value monitors IM43-13-SR and IM43-14-SRi are single-channel devices and alternately monitor measuring current of 0/4-20 mA or measuring voltages of 0/2-10 V. The three limit values are set via the front panel teach button. In addition, a voltage of approx. 18 V (at 35 mA max.) is provided, which can be used to power transmitters or sensors. The output mode is jumper programmable at terminals 5-8.

PIN	Terminal Function
1	(+) 18 VDC Sensor Supply
2	(+) Current Input
3	(+) Voltage Input
4	(-) 0 V Sensor Common
5	(-) Common for 0/4 mA Minimum Selection
9	Input for 0/4 mA Minimum Selection
12	Relay Output 1
13	Relay Output 1
14	Relay Output 2
15	Relay Output 2
11	SRi - 0/4-20 mA Output
16	SRi - 0/4-20 mA Output
17	Relay Output 3
18	Relay Output 2
19	20-250 VUC Supply Power
20	20-250 VUC Supply Power



We reserve the right to make technical alterations without prior notice.

Notes



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## Important Safety Warning

Turck sensors and peripheral devices DO NOT include the self-checking redundant circuitry required to permit their use in personnel safety applications. A device failure or malfunction can result in either an energized or a de-energized output condition.

Never use these products as sensing devices for personnel protection. Their use as safety devices may create unsafe conditions that could lead to serious bodily injury or death.



## Proximity Sensing Compared to Conventional Methods

Turck proximity sensors are designed using solid state technology and contain no moving parts to wear out, as is common in mechanical switches. They require no physical contact for actuation, no cams or linkages, have no contacts to bounce or arc and are completely encapsulated, making them impervious to most liquids, chemicals and corrosive agents. In addition, Turck has a line of sensors that can be used in hazardous explosive environments without any special enclosures.

See Hazardous Area Locations in Section A.

### If any of the following conditions exists, a Proximity Sensor should be used:

- The object being detected is too small, too lightweight, or too soft to operate a mechanical switch.
- Rapid response and high switching rates are required, as in counting or ejection control applications.
- Object has to be sensed through non-metallic barriers such as glass, plastic, or paper carton.
- Harsh environments demand improved sealing properties, preventing proper operation of mechanical switches.
- Long life and reliable service are required.
- Fast electronic control system requires bounce-free input signal.

## Common Industries for Proximity Sensors

- Mining and Metallurgy
- Foundries
- Automatic Assembly and Robotics
- Conveyor Systems in Airports and Factories
- Chemical Plants and Oil Refineries
- Semiconductor Equipment
- Sheet Metal Fabrication
- Automotive and Appliance Plants
- Electroplating Installations
- Can Plants, Food Processing and Breweries
- Shipyards, Docks, and Off-shore Drilling Rigs
- PC-board Handling Machinery

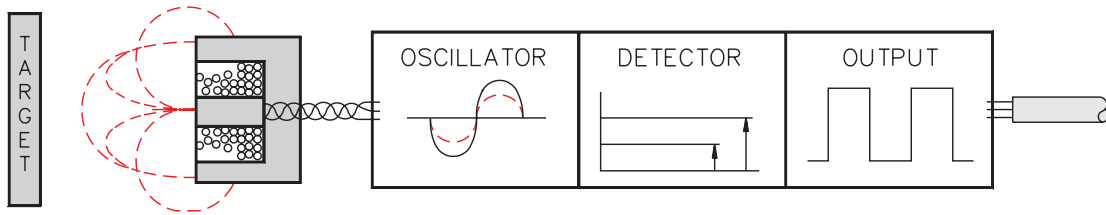
## Typical Applications

- Parts Detection
- Parts Counting
- Positioning
- Motion and Speed Control
- Bottle Cap or Can Lid Detection
- Punch Press Feed and Ejection Control
- Broken or Damaged Tool Detection
- Void or Jam Control
- Feed Control
- Indexing
- Inter-lock Control
- Liquid Level Control
- Leak Detection
- Machine Programming
- Valve Position Indication
- Missing Parts Control
- Parts Diverting
- Coin Counting and Sorting
- Edge Guide Control
- Robotics and Conveyors

Technical Reference | Inductive

**Operating Principle Ferrite Core**

Figure 1



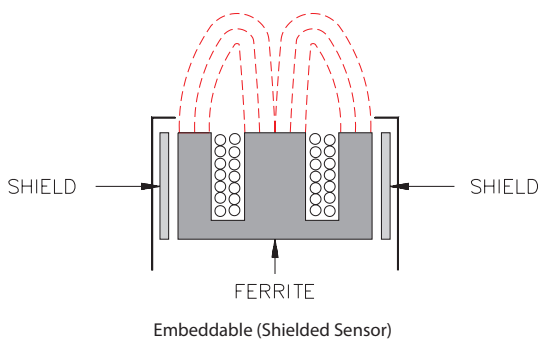
An inductive proximity sensor consists of a coil and ferrite core arrangement, an oscillator and detector circuit, and a solid-state output (Figure 1). The oscillator creates a high frequency field radiating from the coil in front of the sensor, centered around the axis of the coil. The ferrite core bundles and directs the electro-magnetic field to the front.

When a metal object enters the high-frequency field, eddy currents are induced on the surface of the target. This results in a loss of energy in the oscillator circuit and, consequently, a smaller amplitude of oscillation. The detector circuit recognizes a specific change in amplitude and generates a signal which will turn the solid-state output "ON" or "OFF". When the metal object leaves the sensing area, the oscillator regenerates, allowing the sensor to return to its normal state.

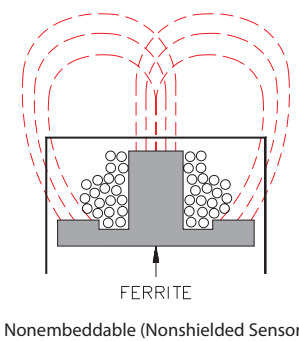
**Mounting**

Turck inductive proximity sensors are available with either a shielded coil, designated by "Bi" in the part number, or a unshielded coil, designated by "Ni" in the part number. Embeddable (shielded) sensors may be safely flush-mounted in ferrous metal. Nonembeddable (unshielded) sensors require a metal free area around the sensing face. Due to the possible interference of the electromagnetic fields generated by the oscillators, minimum spacing is required between adjacent or opposing sensors. See mounting characteristics at the front of each section.

It is good engineering practice to mount sensors horizontally or with the sensing face looking down. Avoid mounting sensors with the sensing face looking up wherever possible, especially if metal filings or chips are present.



Embeddable construction includes a metal band that surrounds the ferrite core and coil arrangement. This helps to "bundle" or direct the electromagnetic field to the front of the sensor, allowing the sensor to be mounted fully surrounded by metal (flush mounting).



Nonembeddable sensors do not have this metal band; therefore, they have a longer operating distance and are side sensitive.

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## Operating Distance (Sensing Range) Considerations

The operating distance ( $S$ ) of inductive proximity sensors is basically a function of the diameter of the sensing coil. The maximum operating distance is achieved with the use of a standard or larger target. The rated operating distance ( $S_n$ ) for each model is given in the manual. When using a proximity sensor the target should be within the assured range ( $S_a$ ).

### Standard Target

A square piece of mild steel having a thickness of 1 mm (0.04 in) is used as a standard target to determine the following operating tolerances. The length and width of the square is equal to either the diameter of the circle inscribed on the active surface of the sensing face or three times the rated operating distance  $S_n$ , whichever is greater.

### Operating Distance = $S$

The operating distance is the distance at which the target approaching the sensing face along the reference axis causes the output signal to change.

### Rated Operating Distance = $S_n$

The rated operating distance is a conventional quantity used to designate the nominal operating distance. It does not take into account either manufacturing tolerances or variations due to external conditions such as voltage and temperature.

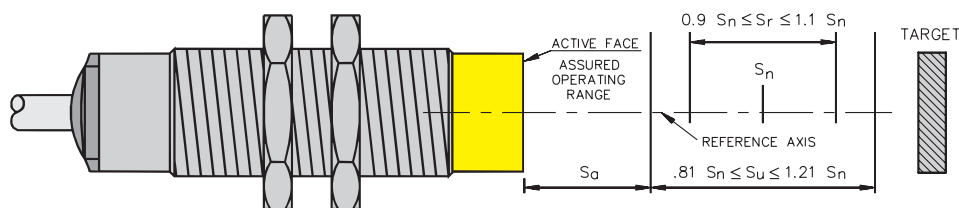
### Effective Operating Distance = $S_r$ $0.9 S_n \leq S_r \leq 1.1 S_n$

The effective operating distance is the operating distance of an individual proximity sensor at constant rated voltage and 23°C (73°F). It allows for manufacturing tolerances.

### Usable Operating Distance = $S_u$ $0.81 S_n \leq S_u \leq 1.21 S_n$

The usable operating distance is the operating distance of an individual proximity sensor measured over the operating temperature range at 85% to 110% of its rated voltage. It allows for external conditions and for manufacturing tolerances.

### Assured Operating Range = $S_a$ $0 \leq S_a \leq 0.81 S_n$



The assured operating range is between 0 and 81% of the rated operating distance. It is the range within which the correct operation of the proximity sensor under specified voltage and temperature ranges is guaranteed.

## Technical Reference | Inductive

### Operating Distance (Sensing Range) Considerations

Turck standard inductive sensors use a single coil wound around a ferrite core. This coil induces eddy currents on the metal target, which results in energy loss in the oscillator circuit, enabling the detection of metal objects. The energy loss is greatly depended on the magnetic properties of the metal target. Ferrous and nonferrous metals affect the sensor differently, resulting in a different operating distance to different metals.

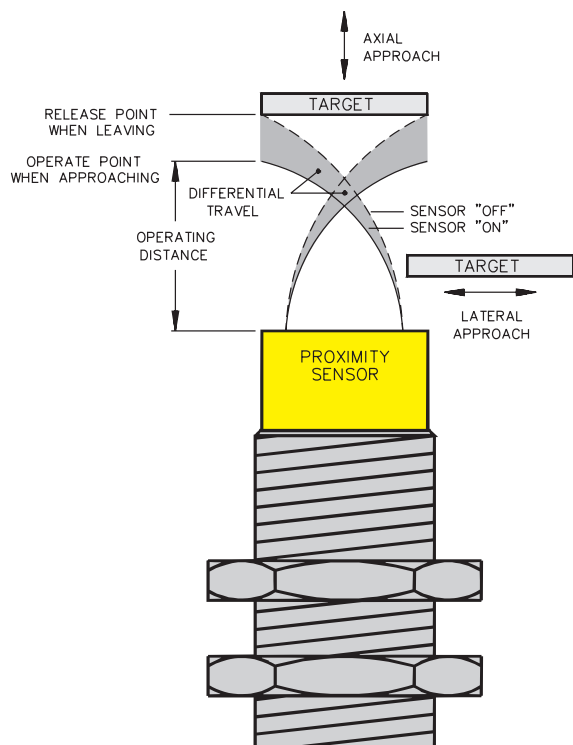
These correction factors apply to standard inductive sensors when a nonferrous target is being detected. The correction factors are nominal values. Deviations may be due to variations in oscillator frequency, alloy composition, purity and target geometry.

Aluminum foil	1.00
Stainless steel	0.60 to 1.00
Mercury	0.65 to 0.85
Lead	0.50 to 0.75
Brass	0.35 to 0.50
Aluminum (massive)	0.35 to 0.50
Copper	0.25 to 0.45

- Correction factors do not apply to Turck Uprox<sup>®</sup> sensors. These sensors detect all metals at the same range.
- Turck also manufactures “nonferrous only” sensors. These sensors will selectively detect nonferrous targets at the rated operating distance. They will not detect ferrous targets; however, ferrous targets positioned between them and a nonferrous target may mask the nonferrous target. The rated operating distance of these sensors is not subject to the correction factors that apply to standard inductive sensors.

### Differential Travel (Hysteresis)

Figure 2



### Actuation Mode

Inductive sensors can be actuated in an axial or lateral approach (Figure 2). It is important to maintain an air gap between the target and the sensing face to prevent physically damaging the sensors.

The difference between the “operate” and “release” points is called differential travel (See shaded area in Figure 7). It is factory set at less than 15% of the effective operating distance.

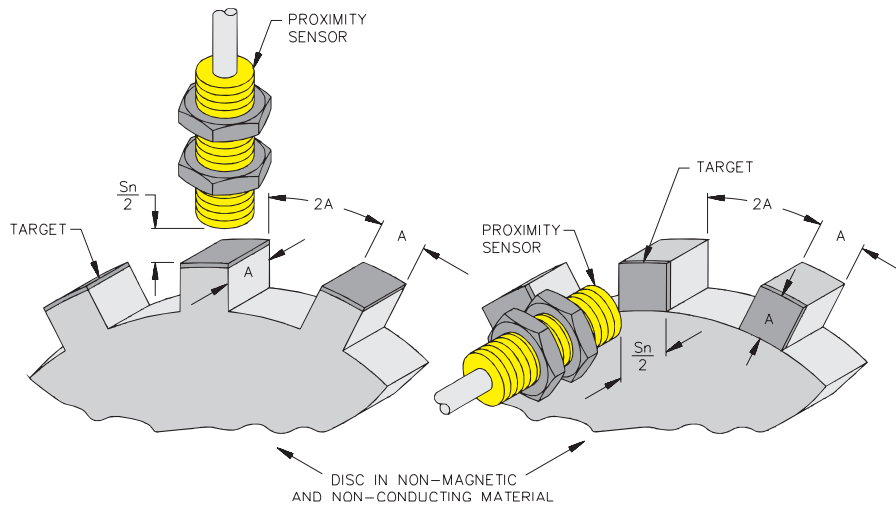
Differential travel is needed to keep proximity sensors from “chattering” when subjected to shock and vibration, slow moving targets, or minor disturbances such as electrical noise and temperature drift.

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**Maximum Switching Frequency**

Figure 3



When using inductive sensors in high speed application, the maximum rated switching frequency is only guaranteed when using optimal target dimensions and sensor spacing. The minimum recommended parameters to use are shown in **Figure 3**. Using smaller targets, target spacing or increasing the sensor to target air gap may result in a reduction of the actual achievable maximum switching frequency. See page J4 for determining dimension “A” of a standard target.

**Weld Field Immunity**

Many critical applications for proximity sensors involve their use in welding environments. AC and DC resistance welders used in assembly equipment and other construction machines often require in excess of 20 kA to perform their weld function. Magnetic fields generated by these currents can cause false outputs in standard sensors.

Turck has pioneered the design and development of inductive proximity sensors that not only survive such environments, but remain fully operative in them.

The limit of the weld field immunity depends on the kind of field (AC or DC), the housing size of the sensor and its location in the field. For example, in an AC or DC weld field, the “/S34” inductive sensors can be positioned one inch from a 20 kA current carrying bus.

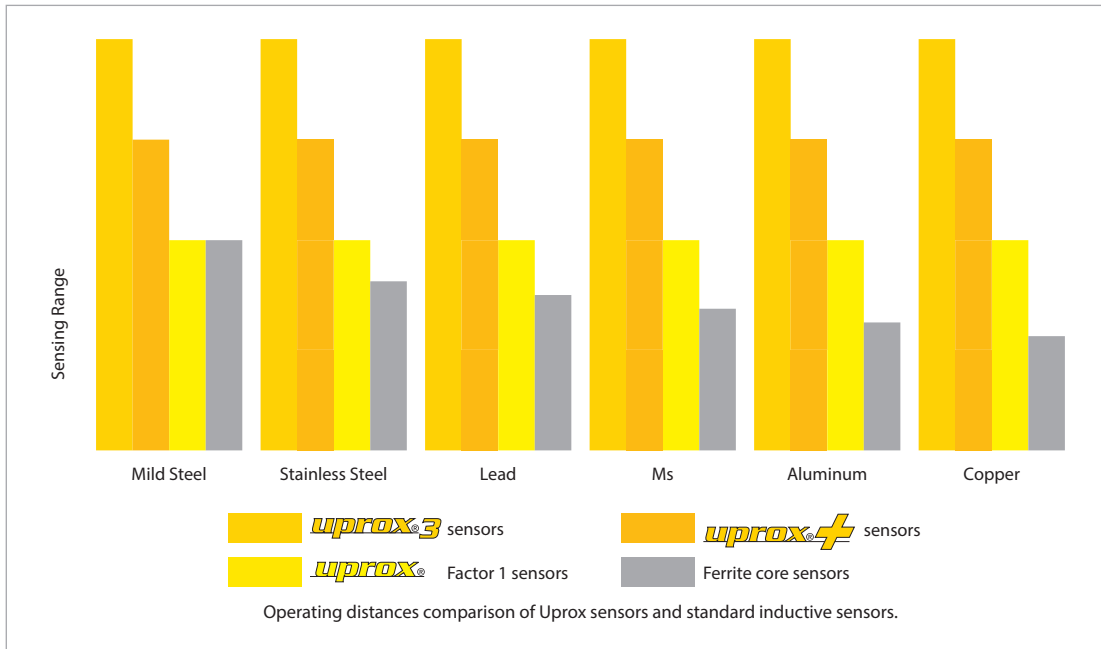
**Reference Values for Magnetic Induction:**

I [kA]	12.5 mm	25 mm	50 mm	100 mm
5	80 mT	40 mT	20 mT	10 mT
10	160 mT	80 mT	40 mT	20 mT
20	320 mT	160 mT	80 mT	40 mT
50	800 mT	400 mT	200 mT	100 mT
100	1600 mT	800 mT	400 mT	200 mT

Gauss = 10 x mT

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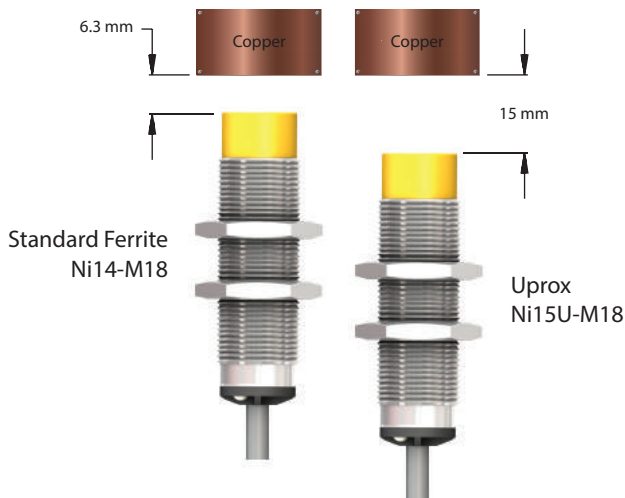
**Operating Principle Uprox®**



Turck Uprox is a patented next generation development of inductive sensors that uses a multi-coil system. Active coil(s) induces eddy currents on the metal target and passive coil(s) are affected by these eddy currents. Ferrous and nonferrous metals have the same effect on the two coils. Therefore, all metals, including galvanized metals, have the same rated operating distance.

**Uprox Advantage**

Figure 4



- No Correction Factor - Same rated operating distance for all metals.
- Extended Operating Distance - Up to 400% greater than standard inductive sensors when using non-ferrous targets (Figure 4).
- Weld Field Immunity - Uprox is unaffected by strong electromagnetic AC or DC fields because of its unique patented design.
- High Switching Frequencies - Up to 10 times faster than standard inductive sensors.
- Extended Temperature Range - Uprox+ can withstand temperatures up to 85 °C (+185 °F) with a ±15% temperature drift.
- Select Uprox3 sensors are IO-Link compatible.

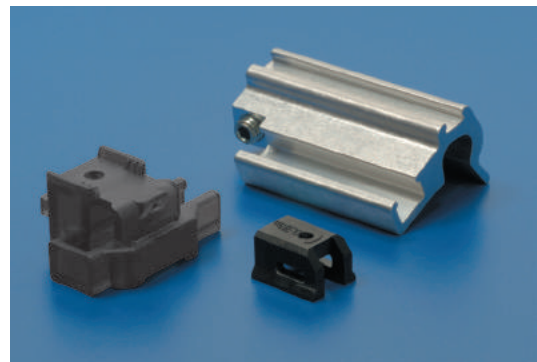
We reserve the right to make technical alterations without prior notice.

## Cylinder Position Sensors – Magneto-Resistive

Turck Magneto-resistive cylinder position sensors are used for the detection of magnet equipped pistons on pneumatic and other types of cylinders. These non-contact sensors are able to determine the position of the cylinder piston without diminishing the integrity of the cylinder itself. This allows the sensors to operate without intruding upon the cylinder, keeping the system completely intact.



Turck has taken the approach of using only two sensor styles along with various adapter brackets to fit each individual cylinder's requirements. The "UNT" and "UNR" housings were designed to fit into specific grooves found in extruded profile type cylinders as stand alone devices without the need for any additional brackets. The UNT style was made to fit into a 5.2 mm "T" groove and the UNR was made for use in a 4.0 mm round groove, neither requiring additional hardware for mounting. Both of these designs allow the sensor to be dropped in from above anywhere along the span of the cylinder.



Cylinder brackets allow Turck sensors to mount on most cylinder styles including round, tie-rod, extruded profile groove, and dovetail versions.

### Where Can I Use a Magneto-Resistive Sensor?

- Material handling
- Automated assembly
- Stamping
- Conveying
- Sorting
- Product positioning
- Industrial robots

Technical Reference | Magnetic

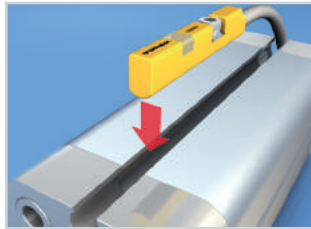
**Cylinder Position Sensors – Magneto-Resistive (continue)**

Turck translated this “drop in from the top” approach when designing the adapter brackets as well. By eliminating the need to slide the sensor in from the end of the cylinder it reduces installation time, alleviates the need for the cylinder to be disassembled, and allows for installation right on the floor without interrupting the operation of the cylinder. These sensors are manufactured using a plastic overmolding technology, which allows us to completely seal sensors into smaller packages without compromising on durability. Smaller sensors that are compact with very low profiles also reduce the chance of damage when mounted to the outside of the cylinder.

**Turck Magneto-Resistive Sensor Advantage**

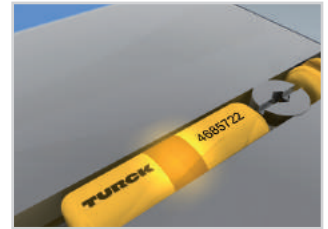
**Reliable Mounting**

The sensor is mounted in the cylinder’s groove and tightened with a screw. Located near the cable outlet, the screw helps make sure the sensor doesn’t move during vibration or if the cable is pulled.



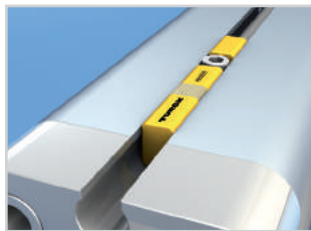
**Visible LED**

A bright LED indicates the current switching status, and is visible from any position.



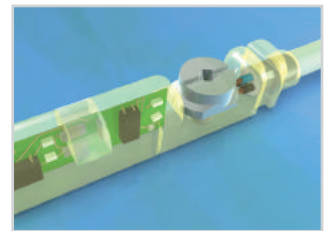
**Compact Housing Style**

UNT models measure only 28 mm, while UNR models measure only 18 mm, making them the most compact sensors available on the market. Since the active sensing face is located at the end of the sensor, the piston can be detected up to the end, even on compact short stroke cylinders.



**Standards**

Magneto-resistive technology enables the sensor to detect the exact position of the magnet, while avoiding multiple switching points. It also exceeds IEC standards EN60947-5-2 and EN61000-4-6, making it immune to high levels of EMC.



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**Cylinder Position Sensors – CRS Inductive**

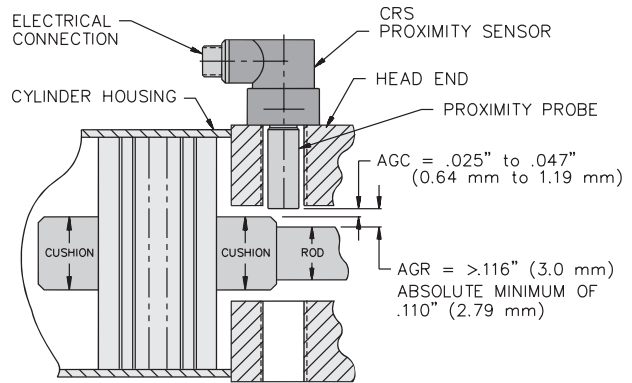
Turck’s CRS sensors are designed to be mounted into the head end or cap end of hydraulic and pneumatic cylinders. They operate at 1,500 psi and mechanically withstand 3,000 psi of continuous pressure.

**AGC - Air Gap Cushion**

This dimension is recommended to allow for mechanical tolerances and wear.

**AGR - Air Gap Rod**

The rod-to-cushion step must be large enough to allow the sensor to turn off when the piston leaves. If the step is too small, the sensor will lock-on due to the hysteresis of the sensor.

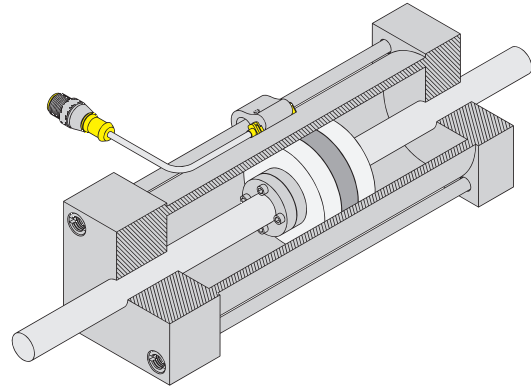


Technical Reference

**Permaprox Inductive Magnet Operated Sensors**

Turck's Permaprox cylinder sensors are used for detection of magnet equipped pistons on pneumatic cylinders through a non-magnetic cylinder wall. A patented electronic magnetic circuit involving new state-of-the-art materials forms the basis of operation for these sensors.

The characteristics of this innovative technology have distinct advantages over Hall effect switches and reed devices. Specific sensors no longer have to be matched to specific magnet strengths. Other features include extremely high repeatability and the elimination of multiple actuation points.



**Actuation Area/Differential Travel**

Figure 5

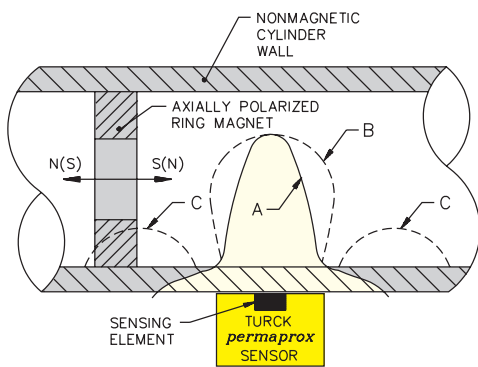
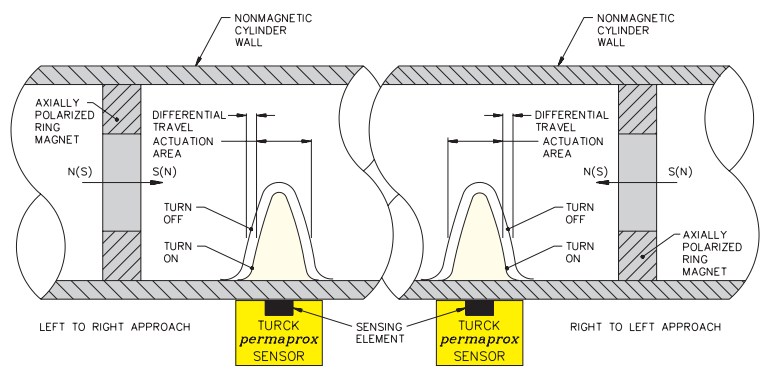


Figure 6



**Figure 5 curve definitions:**

- A) Typical actuation area of Permaprox sensors
- B) Typical primary actuation area for reed switches
- C) Typical secondary actuation area for reed switches

The Permaprox sensors, unlike most magnet operated sensors, respond to only one component of magnetic induction, namely the component parallel to the cylinder. **Figure 5** shows the typical actuation area of a Permaprox sensor compared to that of reed switches. It is a common problem for reed switches to have more than one actuation area. Since these switches operate on a narrow range of magnetic field strengths, mismatching often causes multiple switching points. The Permaprox sensors, however, reliably operate over a range of 20-350 gauss (2-35 mT).

The actuation area will depend on the width and field strength of the magnet. As shown in **Figure 6**, the actuation point will differ depending on the direction of piston travel. These points are not the same, but are very repeatable.

**Permaprox Weld Field Immunity**

All Turck Permaprox sensors with the "S34" suffix in the part number are resistant to AC weld fields. If the field is pulsing, as with AC resistance welders, the sensor locks the output in its last known stable state. When the pulsing field subsides, the sensor updates its output accordingly. The sensors are not immune to constant magnetic fields, such as permanent magnets or DC resistance welders, and will change state.

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## Technical Reference | Capacitive

Capacitive sensors utilize a non-contact sensing technology that detects a wide variety of materials. When equipped with a sensitivity adjustment users can tune out certain materials such as glass or plastic, making this type of sensor a common choice for point level applications. Typical applications include but are not limited to:

- Liquid Level Control for both flammable and non-flammable materials.
- Package Inspection for product content and/or fill level.
- Wire-Break Detection for wire sizes down to .003".
- Plastic Pellet Detection in a hopper for injection molding processes.
- Grain or Food Products Level Detection; intrinsically safe models available.
- Small Metal Parts Detection; greater sensing range than comparable Inductive Sensors.

### Operating Principle

Figure 7

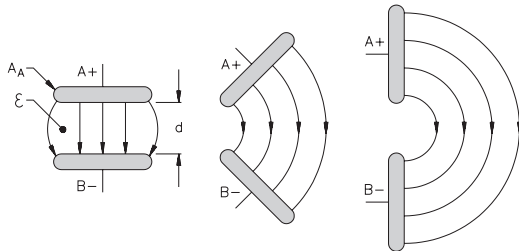
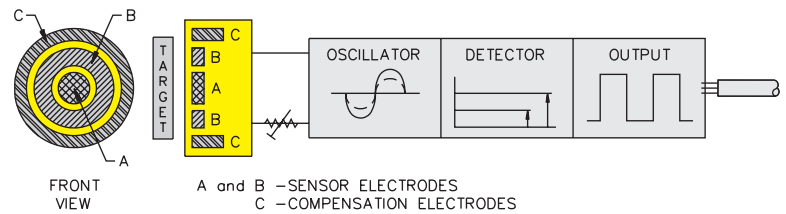


Figure 8



The active element is formed by two metallic electrodes positioned much like an “opened” capacitor (**Figure 7**).

Electrodes A and B are placed in a feedback loop of a high frequency oscillator. When no target is present, the sensor’s capacitance is low, therefore the oscillation amplitude is small. When a target approaches the face of the sensor, it increases the capacitance. This increase in capacitance results in an increased amplitude of oscillation.

The amplitude of oscillation is measured by an evaluating circuit that generates a signal to turn on or off the output (**Figure 8**).

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## Operating Principle

Capacitance is a function of the surface area of either electrodes (A or B), the distance between the electrodes (d), and the dielectric constant of the material ( $\epsilon$ ) between the electrodes.

$$C = \frac{\epsilon \times A}{d}$$

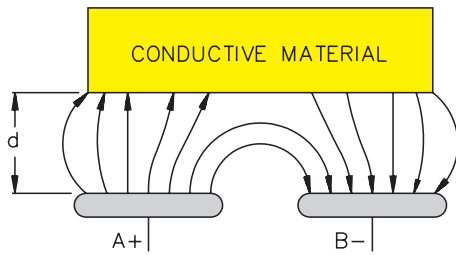
C = capacitance of sensor

A = surface area of either electrode

d = distance between two electrodes

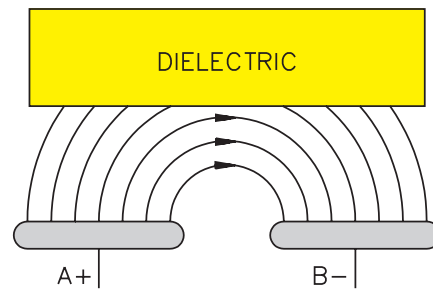
$\epsilon$  = dielectric constant of material between the electrodes

Figure 9



When a Conductive Target enters the sensor's field, it forms a counter electrode to the active face of the sensor, thus decreasing the distance between the electrodes (d) and increasing their average surface area (Figure 9). The capacitance with a metal target present is always greater than the capacitance of the circuit in the absence of the target. Reduction factors for different metals are not a consideration when using capacitive sensors.

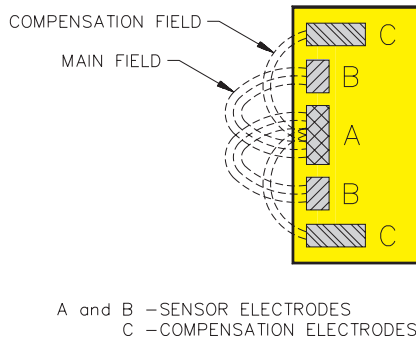
Figure 10



When a Non-Conductive Target enters the sensor's field, it acts as an electrical insulator between electrodes A and B (Figure 10). The dielectric constant of the material ( $\epsilon$ ) is a measure of its insulation properties. All liquids and solids have a greater dielectric constant than air ( $\epsilon_{air} = 1$ ). Therefore, the capacitance with a non-metallic target present is always greater than the capacitance of the circuit in the absence of the target.

**Temperature and Environmental Conditions**

Figure 11



**Compensation Electrode**

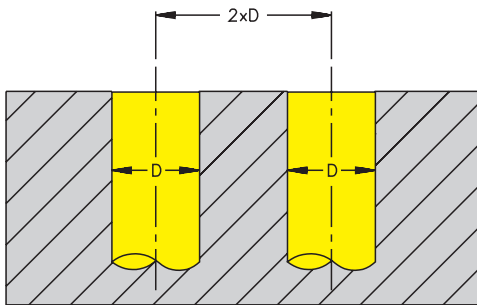
In practice, sensors can be affected by water droplets, humidity, dust, etc., causing false outputs. To combat this effect each Turck sensor incorporates a compensating electrode (C) which forms part of a negative feedback circuit (Figure 11).

When contaminants are on the sensor face, they affect the sensor’s main field, as well as its compensation field. The negative feedback circuit detects the increase in both fields, and can filter out the effects of the contaminants.

When a large target comes into the sensor’s main field, the compensation field is not affected, thus the negative feedback circuit can distinguish a difference between the two fields, and the sensor generates an output.

**Mounting**

Figure 12



**Compensation Electrode**

Most capacitive sensors manufactured by Turck are embeddable, which ensures that the electric field is only effective in front of the active face. They are suitable for flush mounting at the factory setting in any material (conductive and nonconductive).

When sensors are flush mounted, the effect on the operating distance is minimal and can be overcome by adjustment of the potentiometer. Minimum separation distances must be observed to avoid the possibility of interference between the two sensors’ fields (Figure 12).

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## BCF Series – Noise Immunity

Capacitive sensors were originally designed for use in level detection applications in areas that were generally far away from other electrical equipment. As factory automation has become more prevalent throughout industrial markets, these capacitive sensors have gravitated into new environments where electrical noise levels are greatly increased. Electrical noise can be produced by various sources including variable frequency drives, electromechanical motors and standard walkie-talkie devices. These “noisy” environments can have adverse effects on sensing devices causing them to operate improperly and unreliably.

Turck recognizes this and has developed a new circuit for its capacitive sensors. These new “BCF” sensors incorporate a unique filter principle, making them immune to most industrial noise. This principle involves a fixed oscillator frequency combined with a rectifier filter providing superior noise immunity over the competition.

Turck’s fixed oscillator allows the sensor to maintain a constant frequency regardless of sensitivity adjustment. This fixed frequency is high enough to ignore most of the “standard” noise levels seen on plant floors. Electrical noise is mostly symmetrical which makes it easier to identify and separate from the sensor’s input signal. The Turck rectifier filter is able to block this noise allowing only the “useful” input signal, which is in phase with the oscillator frequency, to pass.

These two innovative electrical techniques give Turck the best defense against industrial noise. The list of specifications and test results below demonstrates how Turck meets or exceeds all of the rigid standards established by CE. In fact, the criteria set forth by CE is so stringent that most capacitive sensors offered on the market today cannot pass any or all of these testing requirements. If you have a capacitive sensor application located in a “noisy” environment choose the new “BCF” sensors from Turck to ensure your process operates smoothly.

Test Type		CE "Product" Standard	CE "Generic" Standard	Turck "BCF" Noise Immune Capacitive Sensors
Immunity to Electrostatic Discharge (ESD)	IEC 1000-4-2 EN 61000-4-2	4 kV Direct Contact 8 kV Airborne	4 kV Direct Contact 8 kV Airborne	8 kV Direct Contact 30 kV Airborne
Immunity to Radiated Electromagnetic Fields. Radio Frequency Interference (RFI)	IEC 1000-4-3 EN 61000-4-3	3 V/M 80-1000 MHz	10 V/M 80-1000 MHz	15 V/M 80-1000 MHz
Immunity to Electrical Fast Transients (Burst-High Voltage)	IEC 1000-4-4 EN 61000-4-4	2000 V	2000 V	3000 V
Immunity to Conducted R.F. Voltage (Line Coupled Noise)	IEC 1000-4-6 EN 61000-4-6	Undefined	10 V 150 kHz-80 MHz	>10 V 150 kHz-230 MHz
Immunity to Surges (Lightning Strike)	IEC 255-5	1 kV, 500Ω DC	Undefined	1 kV, 500Ω DC 5 kV, 500Ω AC

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## BCC Series-Plastic Pellets, ESD, and Metal Containers

The BCC series capacitive sensor is specifically designed to provide accurate level detection in the plastic industry. Applications involving plastic pellets often generate high levels of static electricity which can discharge and lead to sensor failure. The BCC series of sensors feature excellent EMC and ESD immunity, allowing them to reliably detect the level of plastic pellets in a hopper while withstanding environmental interference.

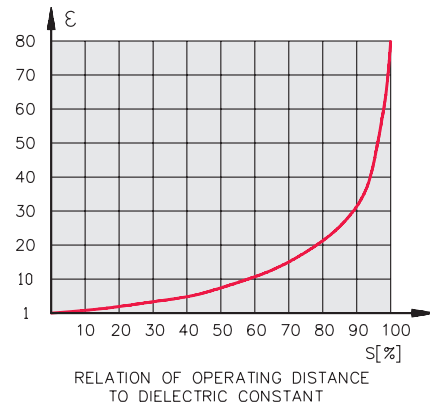
These sensors can also be mounted directly into a metal tank without a reduction in range, a common side-effect for standard capacitive sensors. The BCC incorporates a unique laterally mounted shield that protects the sensors from being influenced by the metal tank. This allows the sensor to detect even low-dielectric materials when the sensor is flush mounted in metal.

Technical Reference | Capacitive

**Sensing Range vs. Dielectric Constant**

When sensing non-conductive targets, the larger the dielectric constant of a material, the greater the achievable operating distance (**Figure 13**). Adjusting the potentiometer affects the total curve; for example, if the potentiometer is adjusted for less sensitivity, it will have less operating distance to all materials. In general terms, the larger the dielectric constant of a material, the greater the achievable operating distance. When detecting organic materials the sensing distance will depend largely on the water content ( $\epsilon_{\text{water}} = 88$ ). It should be noted that a large increase in sensitivity will cause the sensor to become nonembeddable, and may result in an unstable switching point that can be influenced by environmental changes such as temperature, humidity, dust, etc. At adjustments of  $S > S_n$ , the differential travel (hysteresis) can also increase.

Figure 13



We reserve the right to make technical alterations without prior notice.

**Sensitivity Adjustment**

Capacitive sensors can be adjusted in order to sense a target consistently.

- Physical adjustment - moving the sensor towards or away from the target is the preferred method of adjusting sensitivity when the sensor is not in direct contact with the target. This allows materials to be moved into or out of range while leaving the sensor at the factory setting or after re-calibration to the nominal operating distance  $S_n$ .
- Adjustment of the potentiometer - turning the potentiometer in a clockwise direction increases the sensitivity of the sensor. The potentiometer is factory-set for an operating distance of 0.7 to 0.8  $S_n$  to a grounded standard target (Figure 14). It should be adjusted in increments of no greater than a quarter-turn (**Figure 15**). Increasing the sensitivity results in a greater operating distance to both conductive and non-conductive targets.
- Teachable sensors allow users to teach tank-full and tank-empty conditions using the built in buttons or a teach adapter. The programming process and built in logic ensure the sensor is optimized to reliably detect the desired object.
- IO-Link- sensors equipped with IO-Link feature advanced options including the ability to program the sensors with an IO-Link master. The flexibility provided by IO-Link allows users to adjust sensor settings as their processes change.

Figure 14

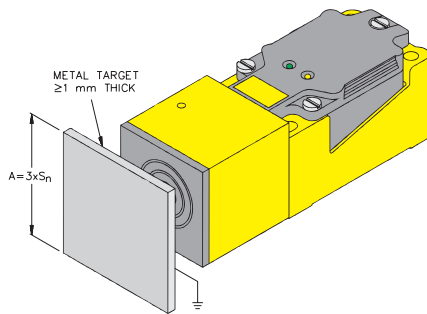
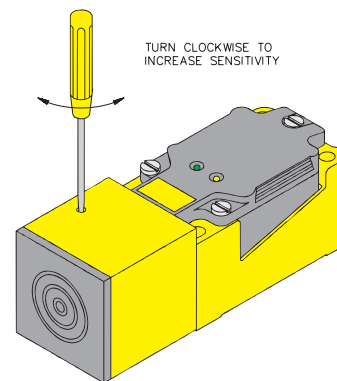


Figure 15



## Example Application 1 - Adjustment

### Problem:

Can a BC20-K40SR-FZ3X2 be used to sense the presence of ammonia from behind a .125" glass panel?

### Solution:

The dielectric constants for these materials can be found on pages 17 and 18.

Dielectric ( $\epsilon_r$ ) of ammonia: 20

Dielectric ( $\epsilon_r$ ) of glass: 10

From Figure 7,  $\epsilon_r = 20$  corresponds to 80% Sn;  $\epsilon_r = 10$  corresponds to 60% Sn.

Since Sn =	20 mm for a BC20:	S for ammonia =	16 mm
		S for glass =	12 mm

The difference is 4 mm. The glass thickness = .125", or 3.1 mm. This application will work with a 0.9 mm margin. This means that by adjusting the potentiometer there should be a reasonable distinction between the glass and the ammonia as seen by the sensor.

### To set up the sensor for this application, the sensing face of the sensor should be flush against the sight glass.

- With no ammonia present (if possible) turn the potentiometer clockwise until the sensor turns on. If the sensor is already on, skip step one.
- Next, turn the potentiometer counter clockwise until the sensor turns off.
- Now add the ammonia so that it covers the glass panel.
- Once again, turn the potentiometer counter clockwise, counting the number of turns until the sensor turns off.\*
- Divide the number of turns by two and turn the potentiometer back clockwise that amount. Using this process will allow for a margin of error in either direction. If this application had called for something other than ammonia, like molasses, that tends to leave buildup behind, step 1 above should be performed with the buildup present (if possible).

\*If sensor does not turn off after 10 full turns, turn back the potentiometer clockwise between three to five turns. Minor adjustments may need to be made to achieve desired setting.

## Example Application 2 - Mounting

### Problem:

A metal tank containing a water-based solution has a 1" outside diameter sight glass. What sensor and bracket could be used for monitoring the liquid level?

### Solution:

The QF 5.5 flat style can be used on non-conductive tubing up to 1.0 inch in diameter with the standard mounting straps provided with the sensor (Figure 16). Other mounting straps for larger diameters are available upon request (consult factory).

Figure 16



# Technical Reference | Capacitive

## Dielectric Constants of Industrial Products

Material Dielectric	Constant
ABS resin, pellet	1.5 - 2.5
Acetic acid	4.1
Acetone	19.5
Acetyl bromide	16.5
Acrylic resin	2.7 - 4.5
Air	1.0
Alcohol, industrial	16 - 31
Alcohol, isopropyl	18.3
Ammonia	15 - 25
Aniline	5.5 - 7.8
Aqueous solutions	50 - 80
Asbestos	3.0
Ash (fly)	1.7
Bakelite	3.6
Barley powder	3.0 - 4.0
Benzene	2.3
Benzyl acetate	5
Butane	1.4
Cable sealing compound	2.5
Calcium carbonate	9.1
Carbon dioxide	1.6
Carbon tetrachloride	2.2
Celluloid	3.0
Cellulose	3.2 - 7.5
Cement	1.5 - 2.1
Cement powder	5 - 10
Cereal	3 - 5
Charcoal	1.2 - 1.8
Chlorine, liquid	2.0
Coke	1.1 - 2.2
Corn	5 - 10
Ebonite	2.7 - 2.9

Material Dielectric	Constant
Epoxy resin	2.5 - 6
Ethanol	24
Ethyl bromide	4.9
Ethylene chloride	10.5
Ethylene dichloride	11.0
Ethylene glycol	38.7
Ethylene oxide	14.0
Ferrous oxide	14.2
Fired ash	1.5
Flour	2.5 - 3.0
Formic acid	59.0
Freon® R22 & 502, liquid	6.1
Gasoline	2.2
Glass	3.1 - 10
Glass, raw material	2.0 - 2.5
Glycerine	47
Hexane	1.9
Hydrochloric acid	4.6
Hydrogen cyanide	95.4
Hydrogen peroxide	84.2
Ice, -5C	2.85
Ice, -18C	3.16
Isobutylamine	4.5
Lime, shell	1.2
Marble	8.0 - 8.5
Melamine resin	4.7 - 10.2
Methane, liquid	1.7
Methanol	33.6
Mica, white	4.5 - 9.6
Milk, powdered	3.5 - 4
Nitrobenzene	36
Neoprene	6 - 9

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## Technical Reference | Capacitive

### Dielectric Constants of Industrial Products

Material	Dielectric Constant
Nylon	4 - 5
Oil, for transformer	2.2 - 2.4
Oil, paraffin	2.2 - 4.8
Oil, peanut	3.0
Oil, petroleum	2.1
Oil, soybean	2.9 - 3.5
Oil, turpentine	2.2
Paint	5 - 8
Paraffin	1.9 - 2.5
Paper	1.6 - 2.6
Paper, hard	4.5
Paper, oil saturated	4.0
Perspex	3.2 - 3.5
Petroleum	2.0 - 2.2
Phenol	9.9 - 15
Phenol resin	4.9
Polyacetal (Delrin®)	3.6
Polyamide (nylon)	2.5
Polycarbonate	2.9
Polyester resin	2.8 - 8.1
Polyethylene	2.3
Polypropylene	2.0 - 2.3
Polystyrene	3.0
Polyvinyl chloride resin	2.8 - 3.1
Porcelain	4.4 - 7
Press board	2 - 5
Propane, liquid	1.6
Propylene, liquid	11.9
Quartz glass	3.7
Rice, dry	3.5

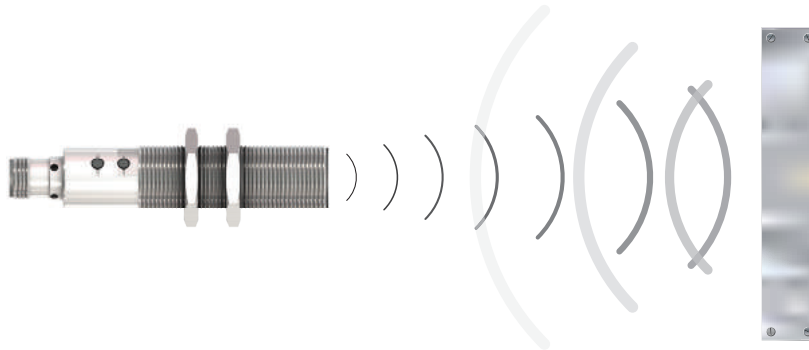
Material	Dielectric Constant
Rubber	2.5 - 35
Salt	6.0
Sand	3 - 5
Shellac	2.0 - 3.8
Silicon dioxide	4.5
Silicone rubber	3.2 - 9.8
Silicone varnish	2.8 - 3.3
Soybean	2.8
Styrene resin	2.3 - 3.4
Sugar	3.0
Sugar, granulated	1.5 - 2.2
Sulfur	3.4
Sulfuric acid	84
PTFE®, PCTFE	2.3 - 2.8
PTFE	2.0
Toluene	2.3
Trichloroethylene	3.4
Urea resin	6.2 - 9.5
Urethane	3.2
Vaseline	2.2 - 2.9
Vinyl chloride	2.8
Water	48 - 88
Wax	2.4 - 6.5
Wood, dry	2 - 7
Wood, pressed board	2.0 - 2.6
Wood, wet	10 - 30
Xylene	2.4
Zinc oxide	1.7
Zirconium oxide	12.5
Zirconium silicate	5.0

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## Technical Reference | Ultrasonic

Ultrasonic sensors use reflected sound waves as a means to detect objects at a greater distance than traditional inductive and capacitive sensors. With ranges of several meters and wide sensing cones, these sensors provide a unique solution to challenging applications.

### Operating Principle



Ultrasonic sensors emit one or several ultrasonic pulses that are broadcasted in the air at the speed of sound. A part of the ultrasonic wave is reflected back to the sensor by the target. The sensor measures the total time of flight from the sensor to the object and back to the sensor. The distance to the object is then calculated with the following formula:

$$D = c \times t / 2$$

D = Distance from the sensor to the object

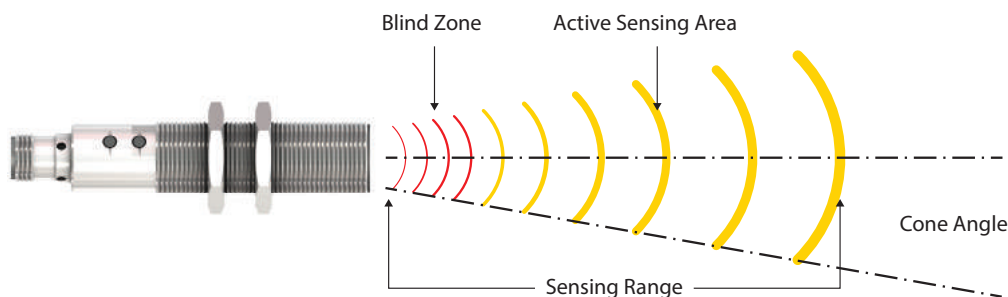
c = Speed of sound in air

t = Time of flight for the ultrasonic pulse

To improve accuracy and reliability, the ultrasonic sensor averages the measurement of several sound pulses before the output is updated.

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### Ultrasonic Terminology



#### Some key terms to understand when looking for an ultrasonic sensor.

- **Blind zone:** the blind zone is the area in front of the sensor where targets cannot be detected.
- **Sensing range:** the coverage of the device is the sensing range, or the maximum distance the sensor can read the sonic wave.
- **Active sensing area:** is the area where the set points or analog values can be established.
- **Cone angle:** the cone angle defines the coverage area of the sensor. This will have to be taken into account when placing the sensor in the application. If the cone is disrupted errors or miscommunication can occur.

### Changes in Temperature

The ultrasonic velocity depends on the composition and the temperature in which the sound is transmitted. In most ultrasonic-applications, the composition of the atmosphere is stable whereas the temperature may often fluctuate. Fluctuations in air temperature affect the speed of sound, which in turn has an effect on the total time for the echo measured by the sensors. Our sensors are temperature compensated and will adjust the range automatically to minimize errors.

The speed of sound in air varies with the temperature according to the following approximation formula:

$$Cm/s = 20 \times \sqrt{273 + TC}$$

Cm/s = Speed of sound in meters per second

TC = Temperature in °C

### Atmosphere Conditions

It is always recommended to set up the ultrasonic sensors desired switch points and/or analog range in the environment that it will be used. Ultrasonic sensors will work in dust, rain and snow but if the conditions are too substantial it may reduce the sensors range or inhibit the sensor to read the target.

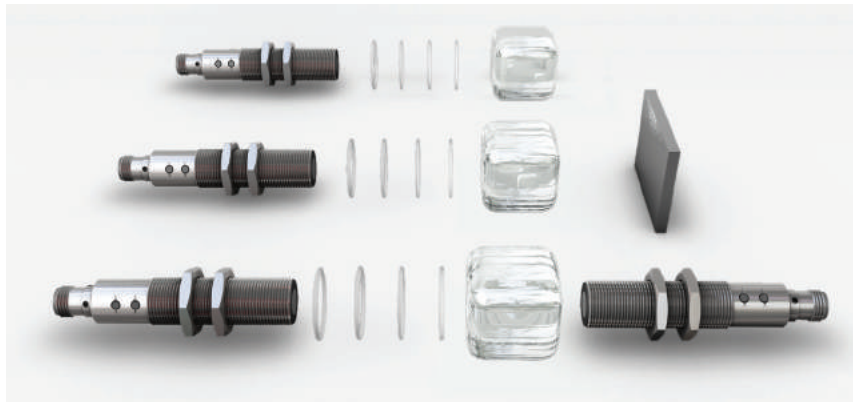


Turck ultrasonic sensors feature a flush face that allows dirt and water to be wicked away with the vibrating motion of the sensing element.

## Modes of Operation

- Diffused mode: standard operation mode where the sensor is emitting sound waves and listening for the reflection and sensing if it is within the selected output zone. This mode can also have an analog output to give a linear measurement.
- Retro: reflective mode—sensor is set up with a reflector and sensing anything that crosses between the sensor and reflector. This is also known as break-beam, which is good for objects with an irregular shape or poor sound-reflecting qualities.
- Opposed mode: enlarges the range of an ultrasonic application. This mode utilizes two sensors of the same type. One sensor sends the signal and the other receives the signal allowing for the sensing range to double.
- Enable mode: allows the sensor to be powered but the piezo element does not fire unless a voltage is applied to pin 5. This allows for the sensor to reduce startup time and only be sensing for a target during a known condition. Enable mode also allows the sensor to be active during predetermined times or under a known condition.

Diffused Mode  
Retro-Reflective Mode  
Opposed Mode



## Synchronization and Multiplexing Mode

- Synchronization mode: any number of ultrasonic sensors of the same type can be operated simultaneously without mutual feedback. The sensors will act as one.
- Multiplexing mode: enables up to nine ultrasonic sensors of the same type to be operated at fixed intervals one after the other without mutual feedback. In order to ensure proper functioning of the multiplexing mode, all connected sensors must have the same type code. In multiplexing mode the addresses must be assigned via PACTware.



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# Technical Reference | Ultrasonic

## Teaching the Ultrasonic Sensor

Ultrasonic sensors can be taught via a teach wire, programming button, or IO-Link, depending on the model.

### Programming changes that can be done through the teach wires/buttons are below

- Discrete output condition, normally open/ normally closed
- Window or hysteresis mode
- Sensing range
- Analog output type, current or voltage
- Retro-reflective mode




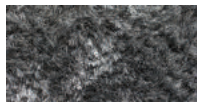
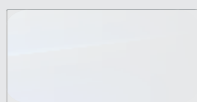

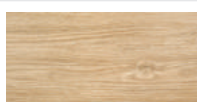
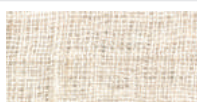

### Programming changes that can be done through IO-Link

- Changing mode of operation
- Discrete output type and condition, NPN/PNP, normally open/ normally closed
- Analog output type, current or voltage
- Teach button/wire lock
- Window or hysteresis mode
- Sensing range
- Analog output type, current or voltage



## Targets

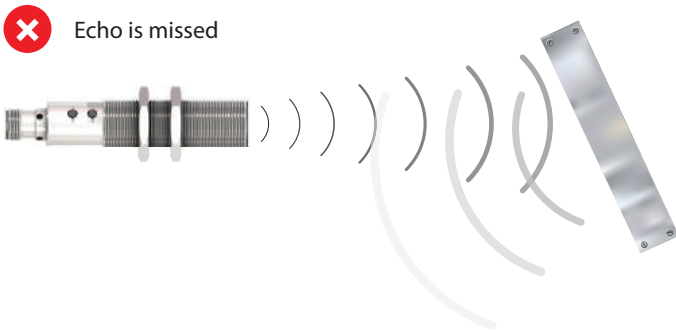
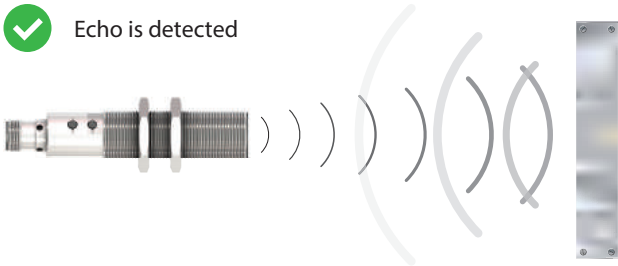
Good ultrasonic targets have a hard smooth surface such as metals, glass, stone, or wood, as well as liquids that are aligned appropriately to the sensor. These targets reliably reflect sonic waves regardless of color or transparency. Cloth, sand, foam or grains absorb some of the sonic energy resulting in limited range or unstable operation. It should be noted that some materials can be detected using retro-reflective mode.

Material	✓	Material	✗
Cardboard		Carpet	
Glass		Foam	
Smooth Wood		Textiles	
Metal			

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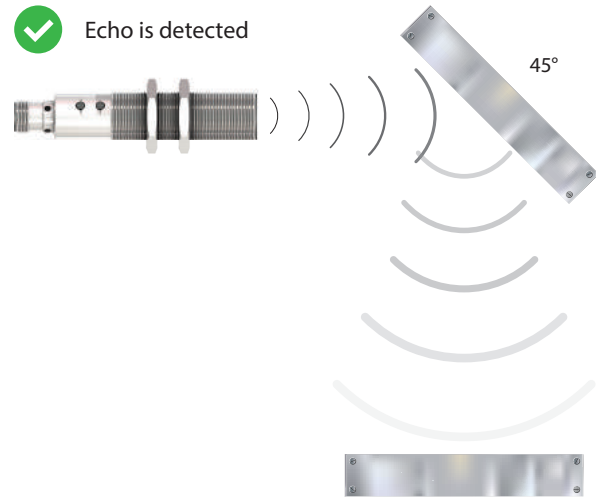
## Application Considerations

### Target Orientation



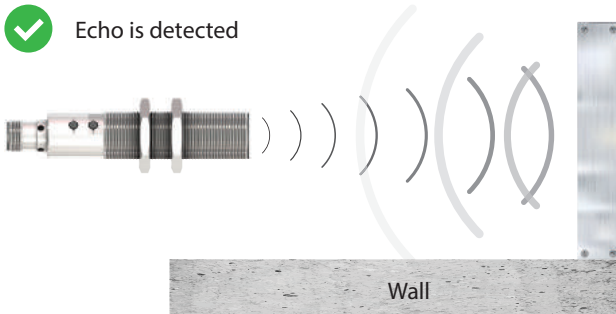
The orientation of a target is important. If the flat surface is at an angle the sensor will not receive the reflected sound.

### Reflector



A reflector at a 45° angle can be used to redirect the signal or allow flexible mounting of the sensor.

### Obstructions



When mounting an ultrasonic sensor the cone angle has to be taken into consideration. Physical obstructions within the cone angle can cause unstable sensor operation. This is common when mounting the sensor too close to the side of a tank, inside of a tube/stilling well, or mounting close to a wall.

### Level Applications



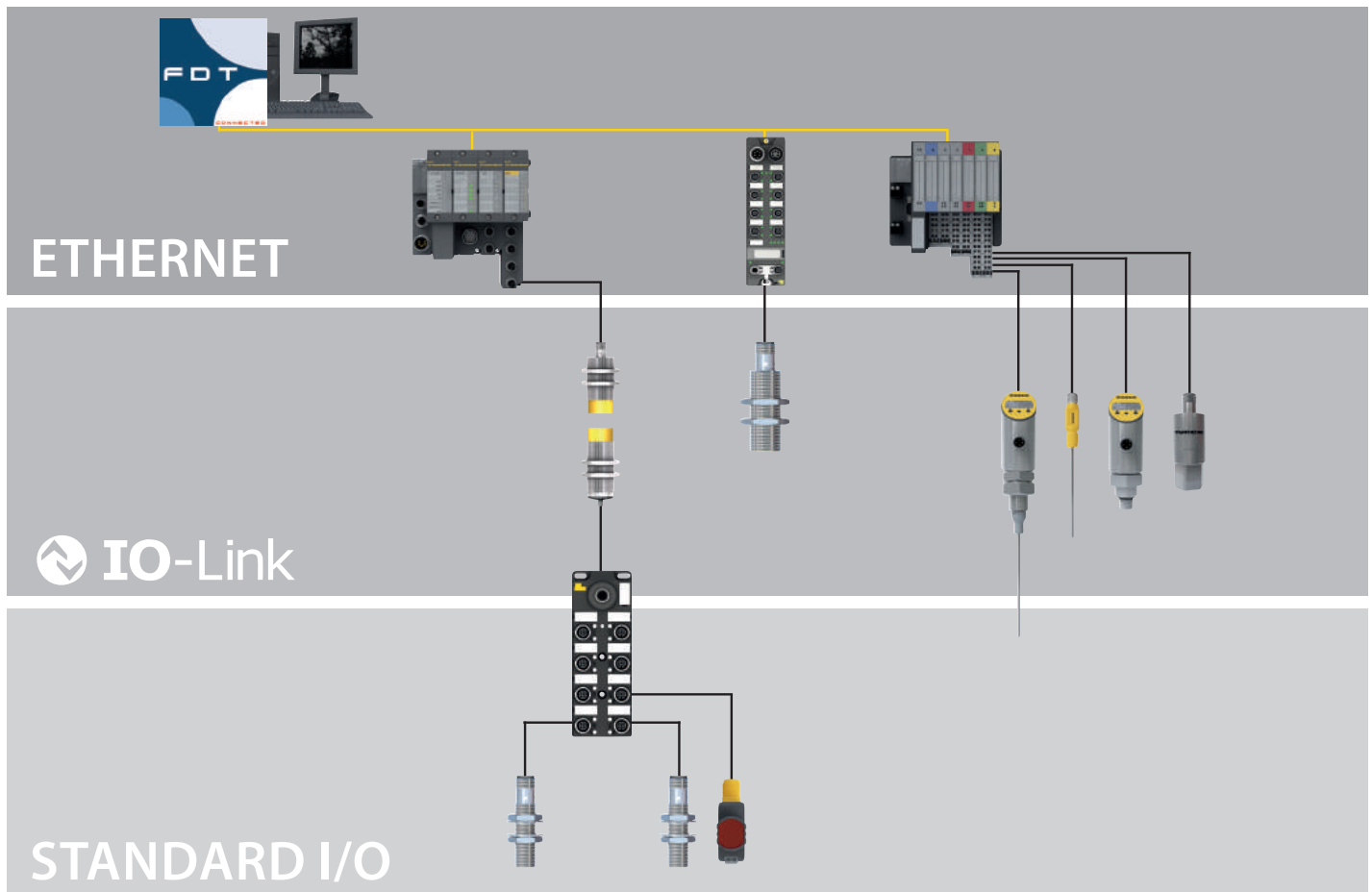
Ultrasonic sensors can be used to monitor the level of both dry materials and liquids. By positioning the sensor above the materials, users can then program switch points or an analog output that corresponds to the actual level.

#### Variables that negatively affect sensor performance

- Foam: foaming media tends to absorb the acoustic signal
- Surface Turbulence: agitation, mixing, and other processes that cause excessive liquid turbulence can cause intermittent signal return problems
- Pressure: pressurized containers should be avoided as they change the sensor characteristics

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## IO-Link: Simple, Seamless, Efficient



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Today, most sensors and actuators are already equipped with microprocessors that are used to control indication, parameterization, and store configuration data. The next step is to overcome the bottleneck of the binary standard interface and make additional functions centrally accessible for the automation system.

For this reason, many well known manufacturers from the field of automation have come together and developed a fieldbus-independent communication interface for sensors and actuators known as IO-Link. Compatibility with existing technologies was the primary objective during development in order to guarantee investment protection.

### What is IO-Link?

IO-Link is based on a point-to-point connection between the sensor/actuator and an interface module. Previously, the binary connection was only designed for transferring switching information, but IO-Link now allows two bytes to be transferred normally in a 2 ms cycle via a combined switching status and data channel. Other information can be exchanged in addition to the process values, such as parameters or diagnostics messages. This enables communication with sensors and actuators down to the "last meter" to be established for universal communication.

### Standard Wiring

IO-Link does not require any special wiring. The sensors and actuators can continue to be connected using the proven, unshielded and attractively priced industrial three core cables. The operating modes available for selection are the standard switch mode and the communication mode.

### Benefits

IO-Link users benefit from reduced machine costs, efficient processes and improved machine availability. Turck provides one of the most comprehensive IO-Link portfolios worldwide, from a variety of sensors, cables and active IO-Link junction boxes to interfaces for various industrial fieldbus protocols, including Turck Multiprotocol Ethernet products.

## Technical Reference | IO-Link

### Engineering Tool Integration

Standardized interfaces (DTM/IODD) implement seamless integration into engineering tools. Furthermore, integration into standalone tools such as Asset management or configuration tools is also made available. Connection into enterprise level tools is accomplished using standard Ethernet mechanisms.



### Device Identification

Integrated device identification ensures that the correct device has been installed in the case of component replacements. As each device contains detailed information regarding the manufacturer, component replacement can be safely handled automatically.



### Wiring

IO-Link uses the same standard unshielded 3-core cables with standardized pinning as conventional I/O. This eliminates problems with complex devices which have no pinning standards and often multipole connectors.



### Ethernet/Fieldbus Connection

IO-Link allows connection to most major fieldbuses, as well as Industrial Ethernet. Turck offers solutions for the full range, including master modules for its modular and block I/O systems featuring Multiprotocol Ethernet, which work seamlessly with PROFINET, EtherNet/IP and Modbus TCP in a single device.



### Sensor Mounting

All IO-Link devices allow parameter changes and diagnostic evaluation within the engineering system or separate tools. Devices can now be mounted in the machine where they make sense for the application, not in inconvenient areas that disrupt work flow in order to allow access to display or switches.



### I/O Hubs

Allow the integration of standard 24 VDC devices into automation systems via IO-Link with Turck I/O hubs. Variants for inputs, outputs and a version with configurable digital I/O are currently available.



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### Efficient Processes

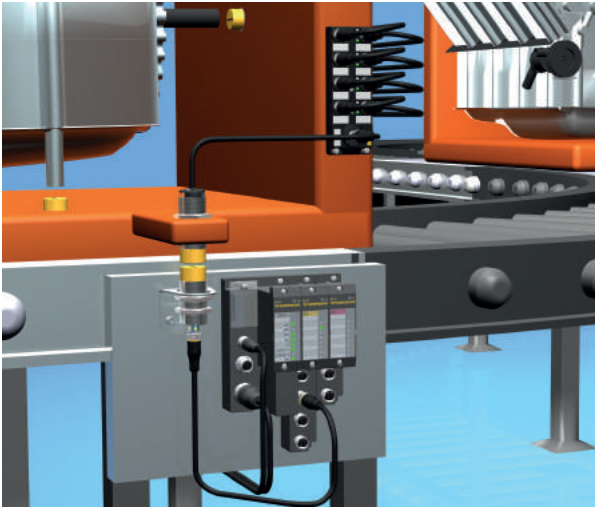
- Extensive parameterization options for just in time parameter changes to devices
- Efficient processes requiring different parameter sets for switching thresholds, gain, sensitivity and so forth due to differing production conditions
- Faster tool change operations

### Improved Machine Availability

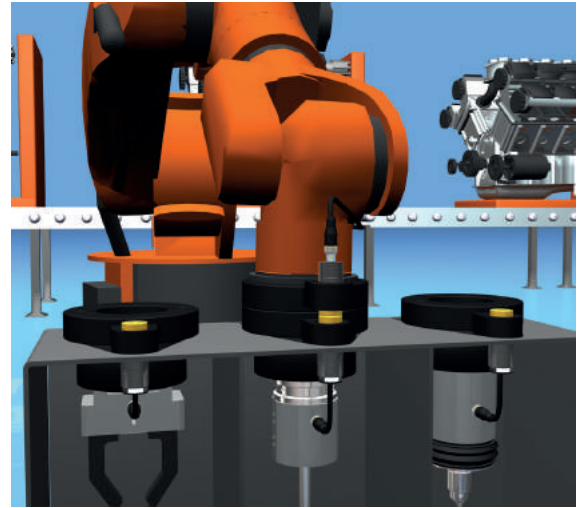
- Comprehensive status information and diagnostic capabilities in the plant lead to drastically reduced machine downtime
- Enhanced information enables cost saving mechanisms such as predictive maintenance or asset management to be easily implemented
- Device replacement without manual intervention to parameterize the new unit alleviates the need for qualified personnel



## Turck: Your Value Added IO-Link Solution Partner



Skid application in an automotive plant



Robotic tool changer application

Many manufacturers offer IO-Link products, which can make it difficult to find the most suitable partner for your needs. Turck offers a wide variety of IO-Link solutions – from sensors through programmable fieldbus and Ethernet gateways – but also provides a deep application knowledge, as the following example shows.

### Tool Changer

Many applications require that parts of a machine are changed to accommodate different phases in the production cycle. This necessitates providing manifold connections between the main (fixed) part of a machine and the exchangeable part. The two elements of the machine must then be linked mechanically and electrically to provide power, pneumatics and I/O signals to enable data exchange within the machine.

The electrical connections require large multi-pin connectors and multicore cables to achieve this end. This complexity has a price: the connections regularly cause problems and are expensive to buy and maintain. The fact that the connections also require a high degree of accuracy regarding the mechanical alignment between machine components further increases machine costs. Another difficulty with this arrangement involves distinguishing between several variants of an exchangeable part. If this is necessary, further I/Os are required, both in the I/O system and on the machine. This not only increases costs, but also the complexity and sizing of the connectors between machine parts.

### Value Added IO-Link Solution

Turck inductive couplers are capable of transferring both data and power over an air gap to resolve the previously mentioned problems. The contactless couplers eliminate the need for other mechanical connectors or costly slip rings, which are liable to wear. Additionally, all Turck IO-Link devices are capable of allocating a so-called “Application Specific Tag” (part of the IO-Link specification), which fulfills the requirement of identifying changeable parts without incurring additional costs. Furthermore, this built-in mechanism allows the use of alphanumeric information, making it likely that existing identification codes can be reused.

### Reduced Machine Costs

- Reduced inventory due to intelligent multi-purpose devices
- Only one I/O module and one inexpensive standard cable required
- Reduced I/O footprint possible
- Displays and switches no longer required on devices
- Reduced engineering and assembly costs and automatic documentation of device parameters during the engineering phase

## Technical Reference | DC Wiring

### DC Outputs

Two-, three-, or four-wire proximity sensors contain a transistor oscillator and a snap-action amplifier. This provides exceedingly high accuracy to a set switching point, even with very slowly approaching targets. Switching characteristics are unaffected by supply voltage fluctuations within the specified limits.

The sensors can drive electromechanical relays, counters, solenoids, or electronic modules, and interface directly with logic systems or programmable controllers without additional interface circuitry. They are available with either NPN output transistors (current sinking) or PNP output transistors (current sourcing).

Load current ratings vary from 100 to 200 mA depending on physical size. Standard voltage range is 10-30 VDC with certain types available for 10-65 VDC. All models incorporate wire-break, transient and reverse polarity protection. Power-On false pulse suppression is also standard.

### Wire-Break Protection

If the supply wire for a Turck DC sensor was damaged or broken the output will stay in the off state.

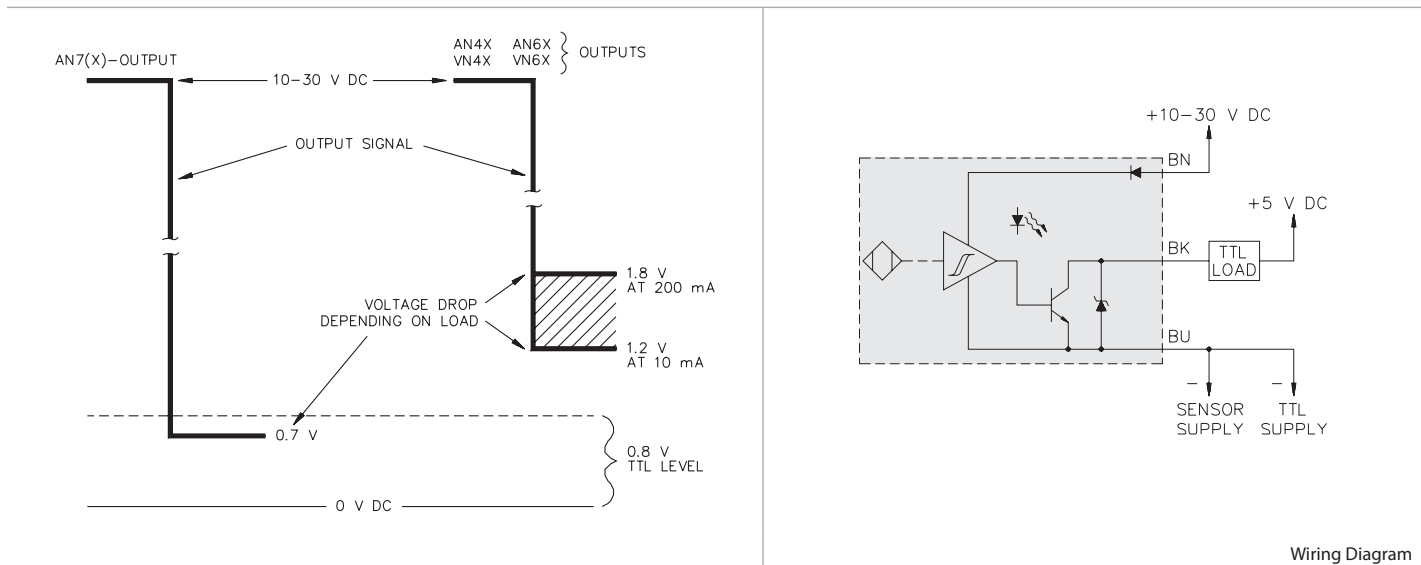
### Short-Circuit and Overload Protection

Turck DC sensors with a Voltage Range designation of "4", "6" or "8" in the part number are short-circuit and overload protected (automatic reset). These sensors incorporate a specially designed circuit which continuously monitors the ON state output current for a short-circuit or overload condition. If either of these fault conditions occurs, the output is turned OFF and pulse tested until the fault is removed. This added protection causes a  $\leq 1.8$  V drop across the output in the normal ON state. This may be a problem when interfacing with some logic low inputs (see TTL compatibility).

### TTL Compatibility

Certain inputs require a 5 VDC signal level to operate correctly. Typically, these types of inputs are described as TTL Level inputs and will only work correctly with a TTL compatible sensor. In order to meet TTL Signal requirements, the output of these sensors will have a voltage drop of  $\leq 0.7$  V (0.3 V typical). Do not use voltage ranges "4" and "6" when TTL compatibility is required. Contact the factory for a list of part numbers with this specification.

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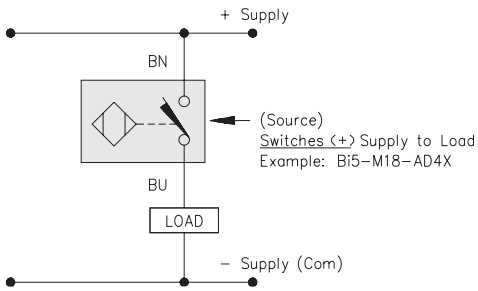


Voltage drop is measured from output wire black (BK) to ground wire blue (BU).

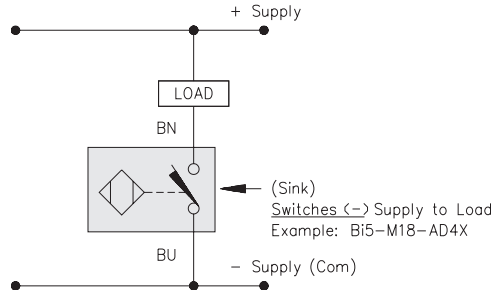
# Technical Reference | DC Wiring

## DC Sourcing and Sinking

### 2-Wire DC



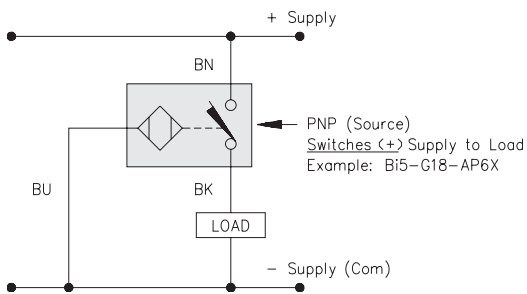
Source (PNP)



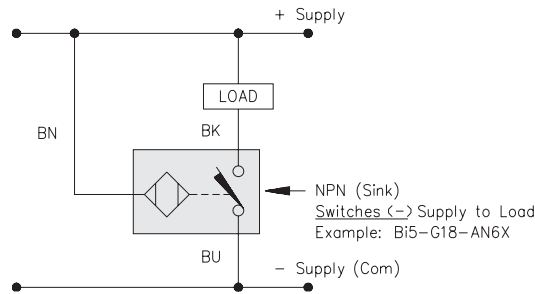
Sink (NPN)

**Note:**  
Turck 2-wire DC sensors with an "AD" designation are not polarity sensitive and can be used to sink or source a load.

### 3-Wire DC



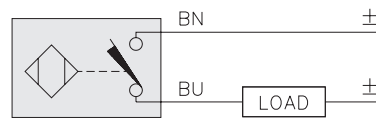
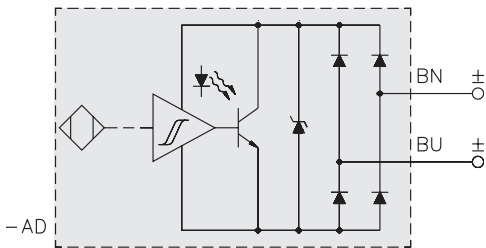
Source (PNP)



Sink (NPN)

## DC Outputs

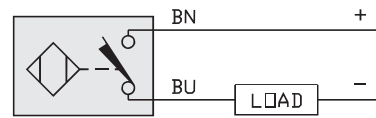
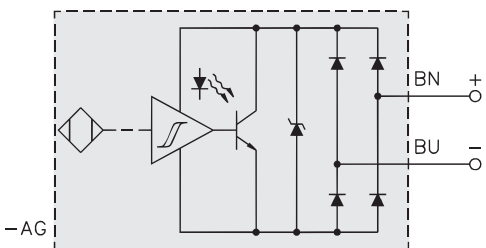
### "AD" 2-Wire DC Output



Wiring Diagram

**Note:**  
Turck 2-wire DC sensors with an "AD" designation are not polarity sensitive and can be used to sink or source a load.

### "AG" 2-Wire DC Output



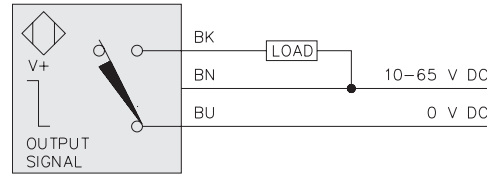
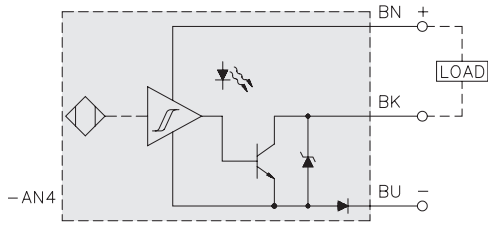
Wiring Diagram

We reserve the right to make technical alterations without prior notice.

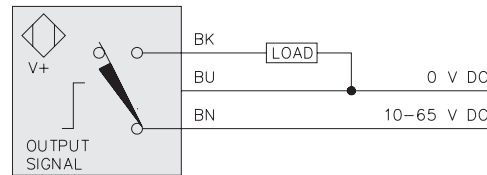
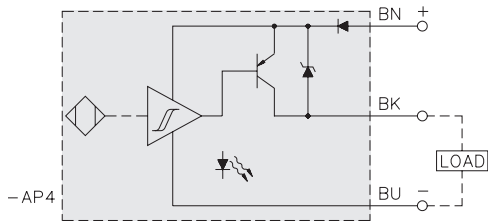
Technical Reference | DC Wiring

**DC Outputs**

**"AN4" and "AP4" 3-Wire DC Outputs**



NPN transistor  
(i.e. current sinking  
negative switching)  
N.O. output

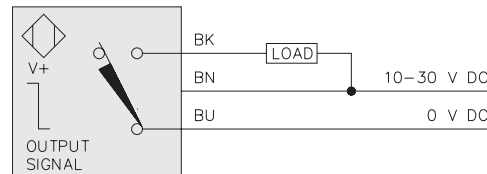
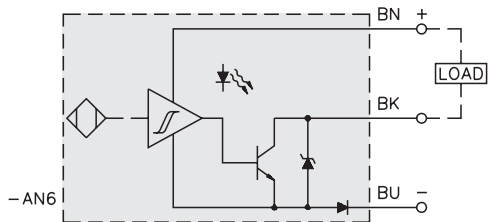


PNP transistor  
(i.e. current sourcing  
positive switching)  
N.O. output

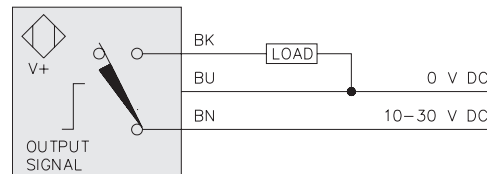
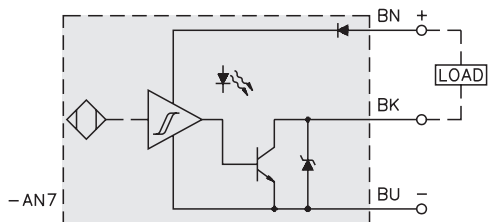
Electronic Output Circuit

Wiring Diagram

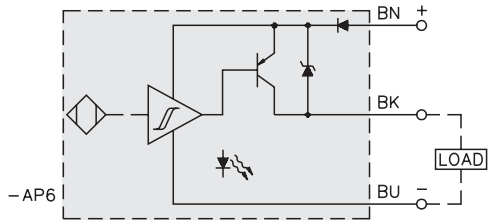
**"AN6(7)" and "AP6" 3-Wire DC Outputs**



NPN transistor  
(i.e. current sinking  
negative switching)  
N.O. output



PNP transistor  
(i.e. current sourcing  
positive switching)  
N.O. output



Electronic Output Circuit

Wiring Diagram

We reserve the right to make technical alterations without prior notice.

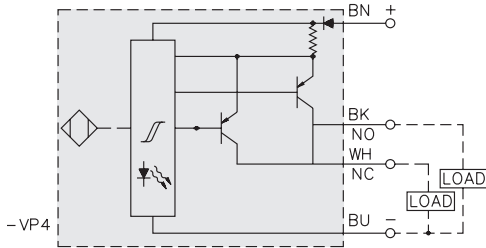
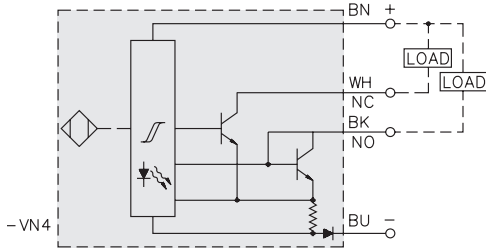
**Note:**

Order current sinking (NPN) sensors with the voltage range "7" only when low voltage drop for TTL gates is required. In all other cases, order sensors with voltage ranges "4" or "6".

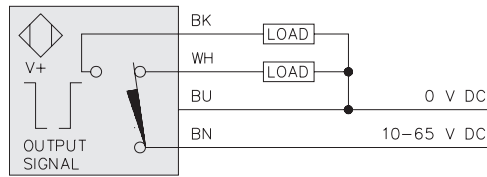
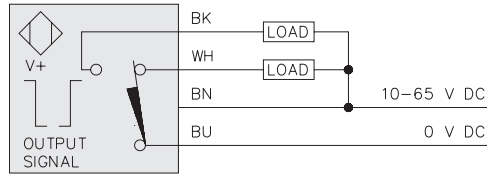


**DC Outputs**

**"VN4" and "VP4" 4-Wire DC Outputs**



Electronic Output Circuit

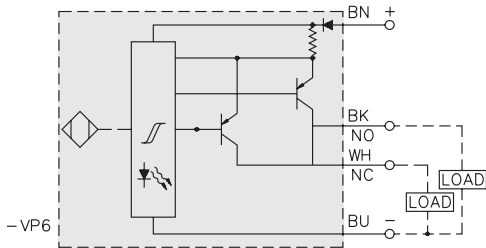
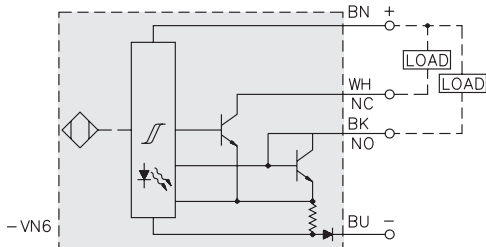


Wiring Diagram

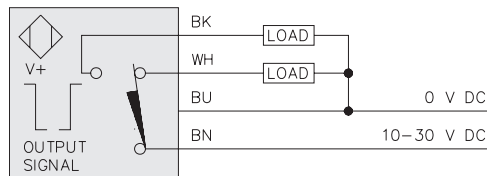
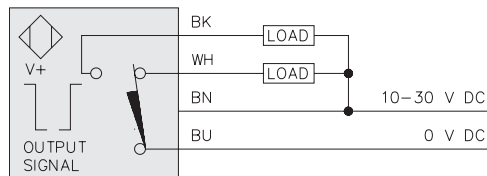
NPN transistor  
(i.e. current sinking  
negative switching)  
complementary  
output (SPDT)

PNP transistor  
(i.e. current sourcing  
positive switching)  
complementary  
output (SPDT)

**"VN6" and "VP6" 4-Wire DC Outputs**



Electronic Output Circuit



Wiring Diagram

NPN transistor  
(i.e. current sinking  
negative switching)  
complementary  
output (SPDT)

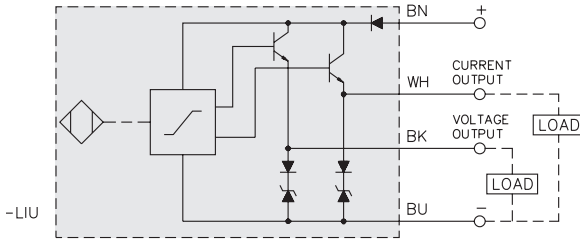
PNP transistor  
(i.e. current sourcing  
positive switching)  
complementary  
output (SPDT)

We reserve the right to make technical alterations without prior notice.

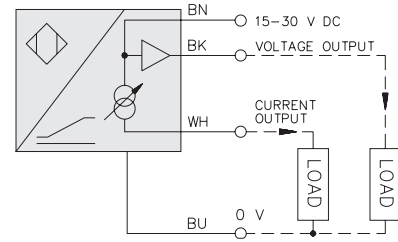
# Technical Reference | DC Wiring

## DC Outputs

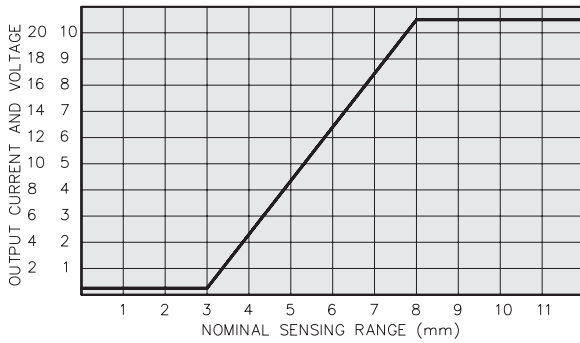
### "LIU" 4-Wire Linear Analog DC Output



Electronic Output Circuit



Wiring Diagram



Typical Response Curve

Linear Analog Output; Current and Voltage

## Series/Parallel Connection

### Logic functions with DC proximity sensors:

Self-contained proximity sensors can be wired in series or parallel to perform such logic functions as AND, OR, NAND, NOR. The wiring diagrams show the hook-up of four sensors with NPN and PNP outputs. Take into account the accumulated no-load current and voltage drop per sensor added in the series string.

#### Series-connection:

- N.O. sensors: AND Function  
(target present, all sensors: load "on")
- N.C. sensors: NOR Function  
(target present, any sensor: load "off")

#### Parallel-connection:

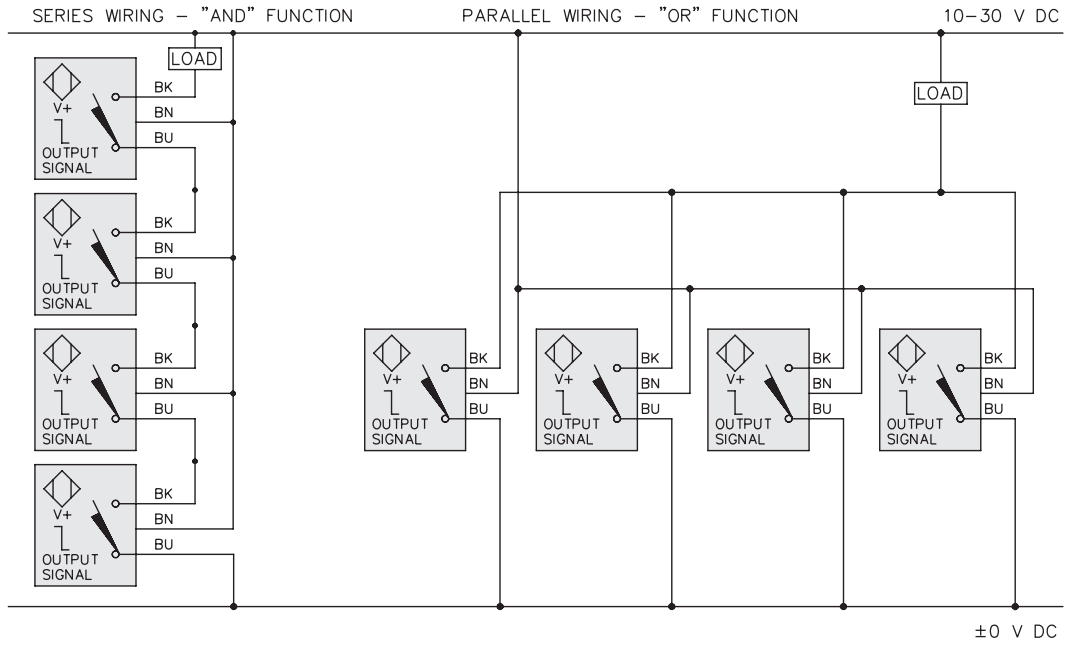
- N.O. sensors: OR Function  
(target present, any sensor: load "on")
- N.C. sensors: NAND Function  
(target present, all sensors: load "off")

### Turck Tip

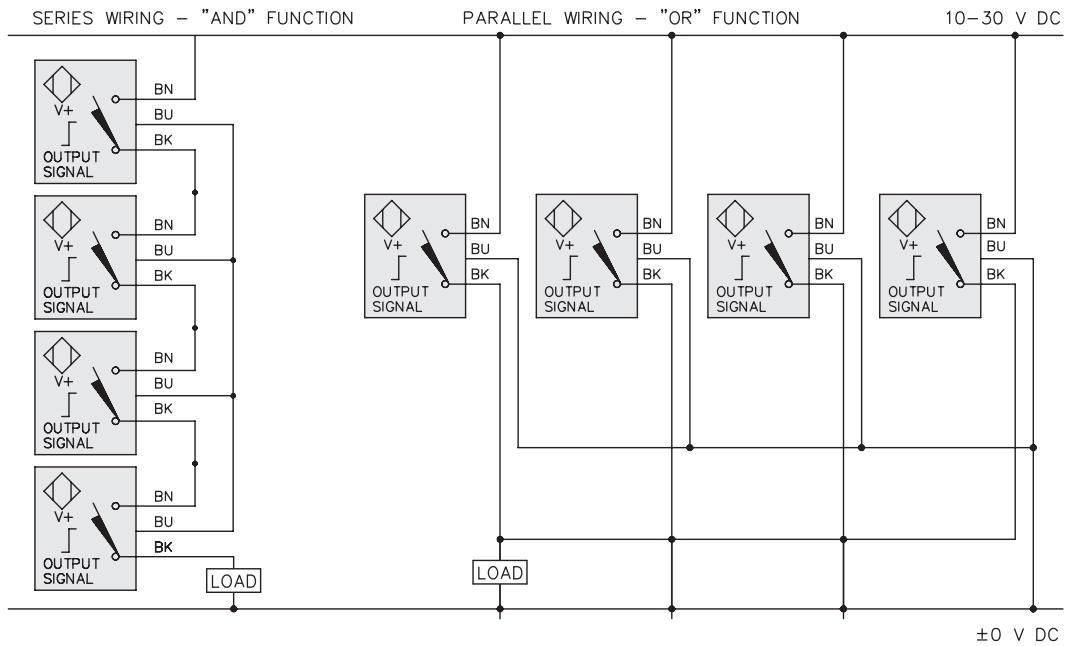
To prevent the load from seeing the cumulative voltage drop of multiple 3-wire sensors in series, alternating polarity sensors can be used provided that the desired polarity is at the load. Wiring 3-wire sensors in series delays the load by the accumulated "time delay before availability" of all sensors in the string.

We reserve the right to make technical alterations without prior notice.

Series/Parallel Connection



NPN Connection



PNP Connection

We reserve the right to make technical alterations without prior notice.

Technical Reference | AC Wiring

**Short-Circuit and Overload Protection**

Turck AC sensors with the Voltage Range designation "30" or "32" are short-circuit and overload protected (manual reset). These sensors incorporate a specially designed circuit which continuously monitors the ON state output current for a short-circuit or overload condition. If either of these fault conditions occurs, the output is latched OFF until the power has been cycled OFF and ON again.

Always select short-circuit and overload protected sensors whenever possible.



**CAUTION!**



**DO NOT** operate an incandescent light bulb as a load. The extremely high cold current will cause an overload condition.



**DO NOT** directly operate a motor with a proximity sensor. The inrush current can cause an overload condition. Always use a motor starter, relay or other appropriate device.



**DO NOT** operate a proximity sensor from a wall outlet without a load. This is considered a "dead" short and can cause catastrophic damage to nonshort-circuit protected sensors.



**DO NOT** forget to ground. AC and AC/DC sensors must be grounded or there exists a potential of electrical shock.

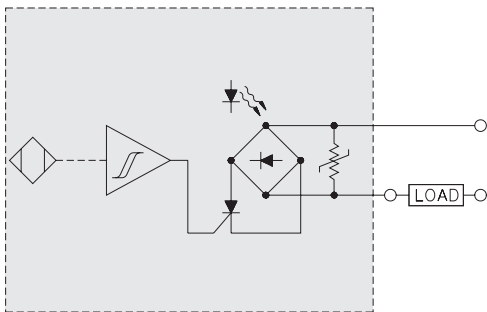
We reserve the right to make technical alterations without prior notice.

**AC and AC/DC Outputs**

These sensors are used as pilot devices for AC-operated loads such as relays, contactors, solenoids, etc. The solid-state output permits use of the sensors directly on the line in series with an appropriate load. They, therefore, replace mechanical limit switches without alteration of circuitry, where operating speed or environmental conditions require the application of solid-state sensors.

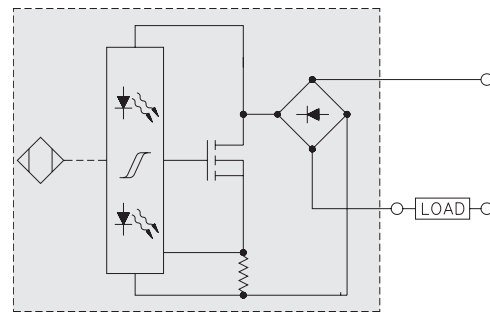
These sensors are typically available in a voltage range of 20-250 VAC. All models are available with either normally open (N.O.), normally closed (N.C.) or programmable outputs (from N.O. to N.C.). Careful consideration must be given to the voltage drop across AC/DC sensors when used at 24 VDC.

AC/DC Outputs - "3", "31", "33", non-SCP



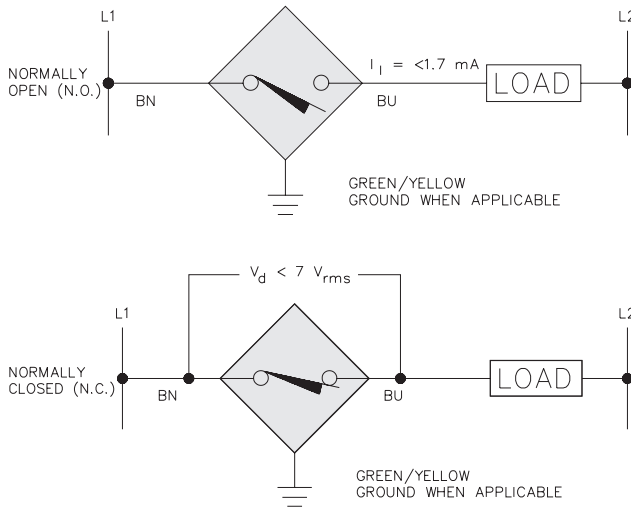
Electronic Output Circuit

AC/DC Outputs - "30", "32", SCP



Electronic Output Circuit

## AC and AC/DC Outputs



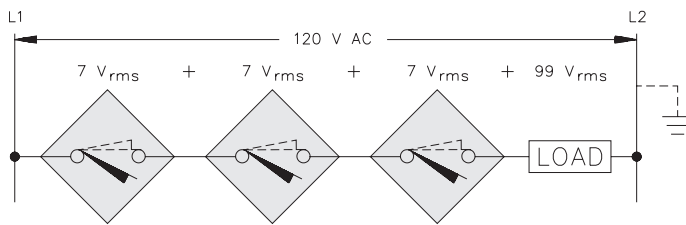
Electro-Mechanical Equivalents

Since the sensors are connected in series with the load by means of only two leads, an off-state current flows through the load in the magnitude of approximately 1.7 mA.

This, however, does not affect the proper and reliable performance of most AC loads. Another characteristic of solid state sensors is a 5 to 7 volt drop developed across the sensor in the ON state.

All models contain a snubber network to protect against transients from inductive loads, which can cause false triggering.

## Series Connection

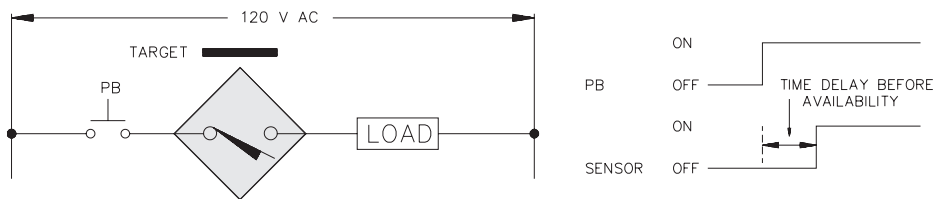


### Series-connection:

- N.O. sensors: AND Function (target present, all sensors: load "ON")
- N.C. sensors: NOR Function (target present, any sensor: load "OFF")

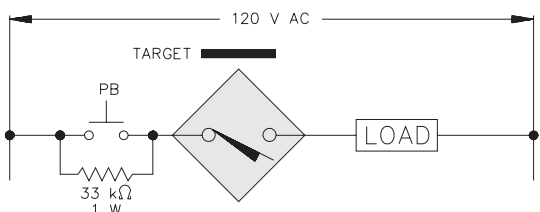
The maximum number of sensors to be operated in series depends on the stability of the line voltage and the operating characteristics of the load in question. The supply voltage minus the accumulative on state voltage drop across the series connection (approximately 7 V<sub>rms</sub> per sensor) must be ≥ the minimum required load voltage.

## Mechanical Switches in Series



### Problem:

Mechanical switches in series with proximity sensors should always be avoided because they can create an open circuit, leaving the proximity sensor without power. In order to operate properly, a proximity sensor should be powered continuously. A typical problem encountered when the mechanical contact closes while the target is present is a short time delay that is experienced before the load energizes (time delay before availability).

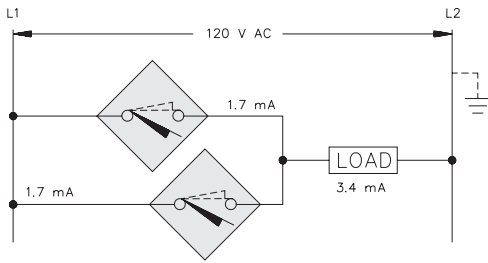


### Solution:

A 33 kΩ, 1W by-pass resistor can be added across the mechanical contact to eliminate the time delay before availability. This will allow enough leakage current to keep the sensor ready for instantaneous operation.

Technical Reference | AC Wiring

**Parallel Connection**



**Parallel Connection:**  
 N.O. sensors: OR Function  
 (target present, any sensor: load "ON")  
 N.C. sensors: NAND Function  
 (target present, all sensors: load "OFF")

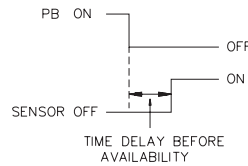
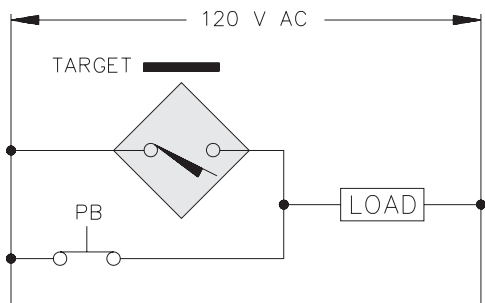
Wiring AC proximity sensors in parallel can result in inconsistent operation and should generally be avoided.

**On-state voltage drop:** With any sensor ON, the voltage across all other sensors is typically 7 Vrms. Since the minimum rated voltage for AC sensors is 20 Vrms, no other sensor with a target present can turn ON until the first sensor turns OFF. This transition is not instantaneous due to the time delay before availability, during which the load may drop out.

**Leakage current through the load:** This is equal to the total leakage of all sensors wired in parallel. Too much leakage into a solid state load can cause the input to turn ON and not turn OFF. Small relays may not drop out if the leakage current exceeds the relay's holding current.

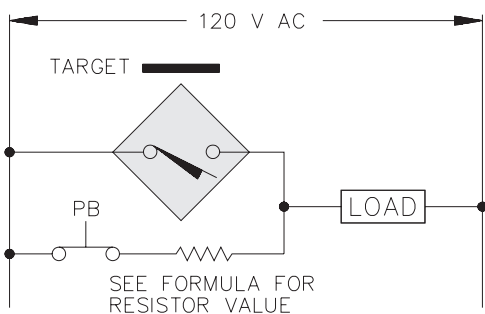
We reserve the right to make technical alterations without prior notice.

**Mechanical Switches in Parallel**



**Problem:**  
 As previously discussed, proximity sensors should be powered continuously to avoid the time delay before availability during power-up.

With mechanical switches in parallel, the sensor is shorted out every time the contact is closed, leaving it without power. If the target is present when the mechanical contact is opened, a small delay will be experienced during which the load may drop out.



**Solution:**  
 This delay can be avoided by adding a resistor in series with the mechanical contact. The voltage drop developed across the resistor with the contact closed will be enough to keep the sensor active. Use the formula below to determine the value and wattage.

**Formula:**

$$R = \frac{\text{minimum operating voltage of proximity sensor}}{\text{load current at operating voltage}}$$

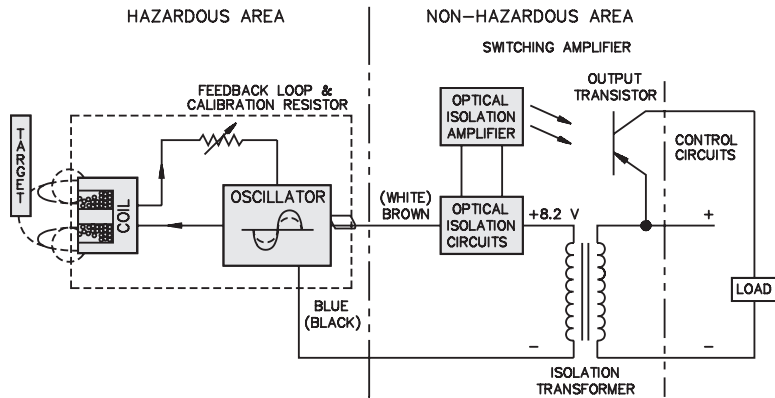
**Example:**

$$R = \frac{20\text{ V}}{180\text{ mA}}$$

$$R = 110\ \Omega$$

Minimum resistor wattage rating:  $E \times I$   
 Example:  $20\text{ V} \times 180\text{ mA} = 3.6\text{ W} \approx 5\text{ watts}$  recommended

**NAMUR (Y0 and Y1) Output**



The NAMUR (Y0 and Y1) sensor behaves like a variable resistor when a target approaches. The impedance increases or decreases between 1 kΩ and 8 kΩ.

NAMUR sensors are 2-wire sensing devices used with switching amplifiers. Because of the small amount of energy needed to operate NAMUR sensors, they can be used in intrinsically safe applications.

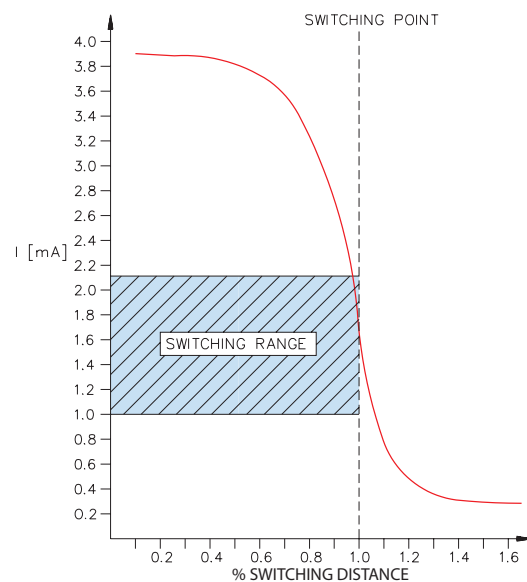
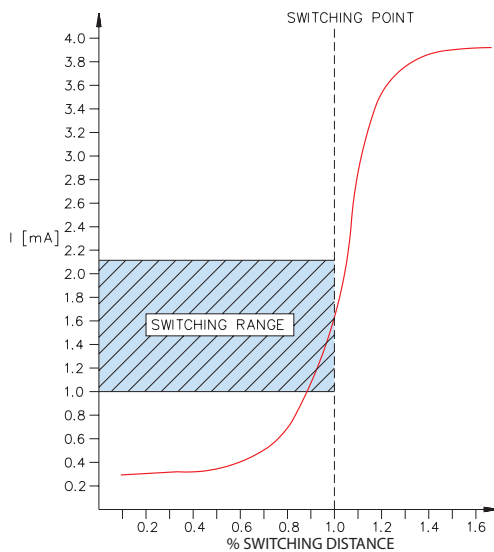
The operation of this sensor is similar to that of a variable resistor with a change in impedance as a target approaches the sensor. When no metal is being sensed, the inductive sensor is in a low impedance state and draws a current of more than 2.2 mA. When a metal target enters the high-frequency field radiated from the sensor head, the impedance increases as the target approaches. When fully damped, the sensor draws less than 1.0 mA.

**Note: For capacitive and inductive magnet operated sensors, the current change characteristics are opposite.**

The current differential from the undamped to the damped (metal present) state is used to trigger an amplifier at a defined switching point. These sensors contain a relatively small number of components, which allows the construction of small devices and also assures a high degree of reliability.

In the undamped and damped state, the devices have fairly low impedance and are therefore, unaffected by most transients. NAMUR sensor circuits operate on direct current. Therefore, cable runs of several sensors may be run parallel to one another without mutual interference.

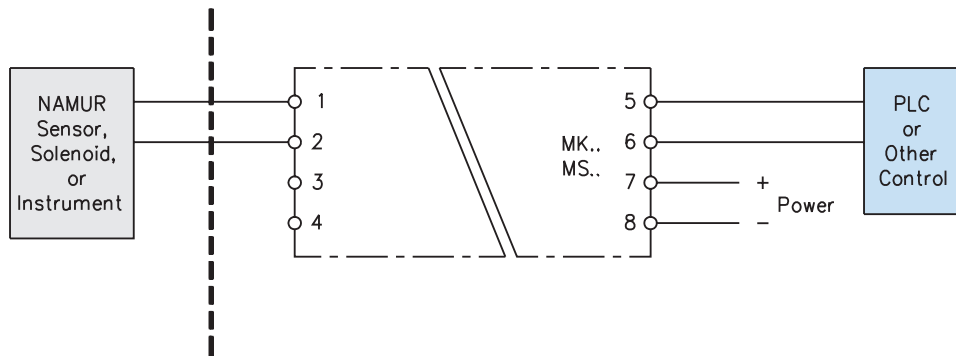
**Typical Output Curves**



**Note:** The typical curve of current versus sensing distance with 8.2 V DC supply and 1 kΩ source impedance. All NAMUR (Y0 and Y1) sensors are calibrated to pass through 1.55 mA at nominal sensing range ±10%.

# Technical Reference | Namur Wiring

## Typical Intrinsically Safe Installation

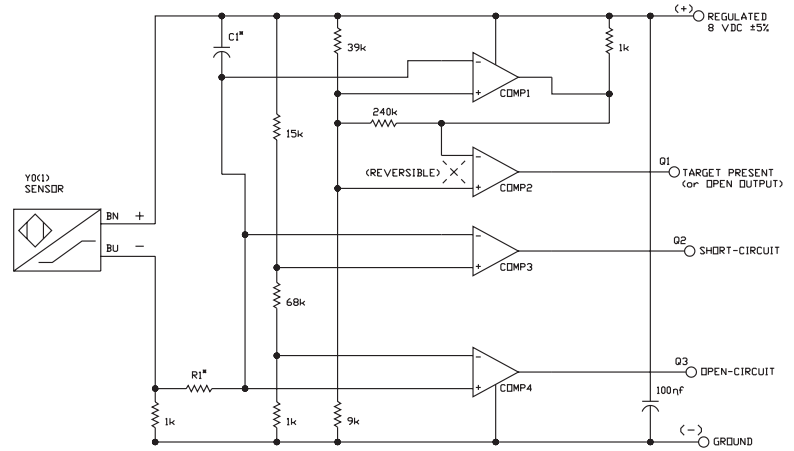
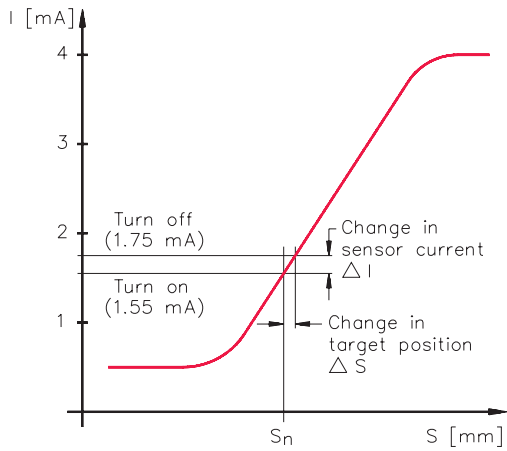


For guidance on installation of Turck intrinsically safe systems, refer to the Instrument Society of America publication ISA-RP12.6-1995, "Wiring Practices for Hazardous (Classified) Locations Instrumentation".

The complete line of Intrinsically Safe and Associated Apparatus can be found on Turck's website.

We reserve the right to make technical alterations without prior notice.

## Custom Interface Circuits



NAMUR sensors can operate outside the nominal operating values when the sensor is used in a nonhazardous area. The supply voltage limits are:  $V_{min} = 5 \text{ VDC}$ ;  $V_{max} = 30 \text{ VDC}$









Within this voltage range the load resistance  $R_l$  must be adjusted for the supply voltage. The following table gives typical values:

$V_{supply} \text{ (DC)}$	$R_l \text{ (k}\Omega\text{)}$	$I_{sn} \text{ (mA)}$	$\Delta I \text{ (mA)}$
5	0.39	$\approx 0.7$	$\approx 0.1$
12	1.8	$\approx 2.3$	$\approx 0.3$
15	2.2	$\approx 2.9$	$\approx 0.4$
24	3.9	$\approx 3.8$	$\approx 0.5$

If these values are used, the current  $I_{sn}$  corresponds to the rated operating distance ( $S_n$ ) of the sensor. NAMUR sensors are short-circuit protected up to 15 VDC and reverse polarity protected up to 10 VDC.



## Technical Reference | Compliances

Third Party Approval and Certification Bodies		
<b>Canadian Standards Association (CSA)</b>	CSA is a Canadian provider of product testing and certification services. CSA certifies products for use in hazardous (classified) locations as well as non-hazardous locations. CSA is accredited by the Standards Council of Canada and is also a US NRTL (Nationally Recognized Test Laboratory), an ATEX Notified Body, and an IECEx ExCB (IECEx Certification Body).	
<b>FM Approvals (FM)</b>	FM approves devices for use in hazardous (classified) locations as well as products in other loss prevention categories. FM is a US NRTL (Nationally Recognized Test Laboratory), an ATEX Notified Body, and an IECEx ExCB (IECEx Certification Body), and is SCC accredited for Canada.	
<b>Underwriters Laboratories (UL)</b>	UL is a US-based provider of product safety testing and certification services for a broad range of both industrial and consumer products. UL lists stand-alone devices, such as sensors, and recognizes system components, such as relays, PWAs, etc. UL is a US NRTL (Nationally Recognized Test Laboratory), an ATEX Notified Body, and an IECEx ExCB (IECEx Certification Body), and is SCC accredited for Canada.	
<b>ATEX</b>	ATEX is the name of the European Union Directive 2014/34/EU covering hazardous location equipment and environments. Product testing and certification is carried out by ATEX Notified Bodies, which are organizations that have been accredited by an EU member state to conduct such testing according to EN Standards.	
<b>IECEx</b>	The IECEx System is the International Electrotechnical Commission's (IEC) system for providing assurance that products meet specified IEC standards. The system aims to provide internationally accepted and standardized certifications. Product testing and certification are carried out by IECEx ExCBs (IECEx Certification Bodies).	
<b>CE</b>	CE marking is a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA).[1] The CE marking is also found on products sold outside the EEA that are manufactured in, or designed to be sold in, the EEA. This makes the CE marking recognizable worldwide even to people who are not familiar with the European Economic Area. It is in that sense similar to the FCC Declaration of Conformity used on certain electronic devices sold in the United States.	
<b>CCC</b>	CCC stands for China Compulsory Certificate Mark and is required for products imported into China as well as products built in China. The CCC Mark was created in 2002 when China joined the World Trade Organization. The CCC applies to a wide range of products. As part of the approval process, product samples are subjected to conformity testing and once approved the manufacture will be subject to regular audits. The approval is required for sensors with operating voltages in excess of 36 volts.	
<b>RoHS</b>	RoHS stands for Restriction of Hazardous Substances. RoHS, also known as Directive 2002/95/EC, originated in the European Union and restricts the use of specific hazardous materials found in electrical and electronic products. All applicable products in the EU market after July 1, 2006 must pass RoHS compliance.	

We reserve the right to make technical alterations without prior notice.




**Note:**

Turck products comply with many International standards. Consult factory for more information.


## Technical Reference | Compliances

### Hazardous Location Approvals

The NAMUR sensors shown in this catalog are Intrinsically Safe per the following:

<p><b>USA</b></p>	<p>Class I, Division I, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1 Class I, Zone 0, AEx ia Group IIC T5 Intrinsically Safe when connected to an appropriately certified associated apparatus. See Turck Control Drawing IS-1.118 for US installations.</p>	
<p><b>Canada</b></p>	<p>Class I, Division I, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1 Ex ia Group IIC T4-T6 Intrinsically Safe when connected to an appropriately certified associated apparatus. See Turck Control Drawing IS-1.203 for Canada installations.</p>	
<p><b>European Union</b></p>	<p>II 1 G Exia IIC T4-T6 Ga II 2 G Ex ia IIC T4-T6 Gb II 1 D Ex ia T95°C or T115°C Da Intrinsically Safe when connected to an appropriately ATEX-certified associated apparatus. See ATEX certificate at Turck.com or contact factory for information on certified devices.</p>	
<p><b>IEC member countries per IECEx</b></p>	<p>Zone 0 Ex ia IIC T4-T6 Ex ia IIC T4-T6 Ex ia D 20 T95°C or T115°C Intrinsically Safe when connected to an appropriately IECEx-certified associated apparatus. See IECEx certificate at Turck.com or contact factory for information on certified devices.</p>	

Many 3-wire DC sensors are approved for Class I, Division 2 hazardous locations:

<p><b>USA and Canada</b></p>	<p>Class I, Division 2, Groups A, B, C, D Selected Sensors with -AN6X, -AP6X, -RN6X or -RP6X outputs. Part numbers include /S1751 option code Integral cables have ITC rating See Control Drawing Ni-2.409 for US and Canada installations.</p>	
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Standards for Intrinsically Safe systems may be found in the following publications:

<p><b>USA</b></p>	<p>National Electrical Code, ANSI/NFPA 70, Articles 504 and 505 Underwriters Laboratories Standard UL 913 Underwriters Laboratories Standard UL 60079-11 FM Approvals Standard Class 3610</p>
<p><b>Canada</b></p>	<p>Canadian Electrical Code, C22.1 Section 18 and Appendix F CSA C22.2 No. 157 CSA C22.2 No. 60079-11</p>
<p><b>Europe (EU)</b></p>	<p>EN 60079-11</p>
<p><b>IECEx</b></p>	<p>IEC 60079-11</p>

We reserve the right to make technical alterations without prior notice.

## Technical Reference | Compliances

### Hazardous Location Definitions

#### Class/Division Classifications:

<b>Class I</b>	Locations in which flammable gases or vapors exist or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.
<b>Class II</b>	Locations that are hazardous because of the presence of combustible dust.
<b>Class III</b>	Locations that are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be suspended in the air in quantities sufficient to produce ignitable mixtures.
<b>Division 1</b>	Locations in which hazardous concentrations in the air exist continuously, intermittently, or periodically under normal operating conditions.
<b>Division 2</b>	Locations in which hazardous materials are handled, processed or used, but in which they are normally confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown.
<b>Group A</b>	Atmospheres containing acetylene.
<b>Group B</b>	Atmospheres containing hydrogen, fuel and combustible process gases containing more than 30% hydrogen by volume, or gases or vapors of equivalent hazard such as butadiene, ethylene oxide, propylene oxide and acrolein.
<b>Group C</b>	Atmospheres such as ethyl ether, ethylene, acetaldehyde, cyclopropane, or gases or vapors of equivalent hazard.
<b>Group D</b>	Atmospheres such as acetone, alcohol, ammonia, benzene, butane, cyclopropane, ethylene dichloride, gasoline, hexane, lacquer solvent vapors, methane, natural gas, naphtha, propane, xylene, or gases or vapors of equivalent hazard.
<b>Group E</b>	Atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys, and other combustible dusts with similarly hazardous characteristics.
<b>Group F</b>	Atmospheres containing combustible carbonaceous dusts, including carbon black, charcoal and coal.
<b>Group G</b>	Atmospheres containing other combustible dusts, such as chemical, agricultural or plastic dusts.

We reserve the right to make technical alterations without prior notice.

#### Class I Zone Classifications:

<b>Zone 0</b>	Locations in which ignitable mixtures exist continuously or for long periods of time.
<b>Zone 1</b>	Locations in which ignitable mixtures are likely to occur during normal operation.
<b>Zone 2</b>	Locations in which ignitable mixtures are not likely to occur during normal operation.
<b>Gas Group IIC</b>	Atmospheres containing acetylene or hydrogen, or gases and vapors of equivalent hazard.
<b>Gas Group IIB</b>	Atmospheres containing ethylene, or gases and vapors of equivalent hazard.
<b>Gas Group IIA</b>	Atmospheres containing propane, or gases and vapors of equivalent hazard.

## Technical Reference | Protection

### Enclosure Ratings

#### NEMA 250-1991

<b>NEMA 1</b>	Enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling dirt.
<b>NEMA 3</b>	Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust, and damage from external ice formation.
<b>NEMA 4</b>	Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water, and damage from external ice formation.
<b>NEMA 4X</b>	Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water and damage from external ice formation.
<b>NEMA 6</b>	Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during occasional temporary submersion at a limited depth, and damage from external ice formation.

#### IEC 529

<b>IP 40</b>	Protection against solid bodies larger than 1 mm. No protection against liquids.
<b>IP 65</b>	Dust tight. Protection against water spray from all directions at 14.2 PSI through a 12.5 mm nozzle.
<b>IP 67</b>	Dust tight. Protection against the effects of immersion in water for 30 minutes at 1 meter.
<b>IP 68</b>	Dust tight. Protection against the effects of indefinite immersion in water at a pressure specified by the manufacturer. Ex. Turck's IP 68 definitions is IP 67 plus. <ul style="list-style-type: none"> <li>■ 24 hours at 70 °C</li> <li>■ 24 hours at -25 °C</li> <li>■ 7 days at 1 meter under water at a constant temperature</li> <li>■ 10 cycles +70 °C and -25 °C, minimum of 1 hour at each temperature</li> </ul>
<b>IP 69K</b>	Hot steam jet cleaning per EN 60529 (IP enclosure ratings) and DIN 40050-9.

We reserve the right to make technical alterations without prior notice.

#### Turck Tip



#### For oily environments

Use plastic sensors with quick disconnects and Turck TPU "/>



#### For washdown environments

Use Turck's Uprox+ Washdown Sensors and appropriate mating cordsets.

## Material Descriptions

### Plastics

<b>ABS - Acrylonitrile-Butadiene-Styrene</b>	Impact resistant, rigid. Resistant to aqueous acids, alkalis, salts, alcohols, oils, concentrated hydrochloric acid; disintegrated by concentrated sulfuric or nitric acids, esters, ketones
<b>CPE, Thermoset (rubber cables)</b>	Excellent resistance to oils, acids, chemicals, ozone, extreme temperatures, cuts, abrasions; flame retardant in welding applications
<b>PA - Polyamide (nylon)</b>	Good mechanical strength, temperature resistant
<b>PA, Amorphous (Trogamid T)</b>	Similar properties to nylon, but transparent. Hard, rigid, good chemical resistance
<b>PA 12-GF30</b>	Nylon 12, 30% glass filled
<b>PA 66-GF25-V0</b>	Nylon 66, 25% glass filled, self-extinguishing
<b>PBT - Polybutylene Terephthalate (when glass reinforced, Crastin®)</b>	Good mechanical strength; resistant to abrasion; resistant to alcohols, oils, some acids, trichloroethylene
<b>PBT-GF30-V0</b>	PBT, 30% glass filled, self-extinguishing
<b>PEI - Polyetherimide (Ultem®)</b>	Excellent resistance to most commercial automotive fluids, fully hydrogenated hydrocarbons, alcohols, weak aqueous solutions. Withstands higher temperatures.
<b>POM - Polyoxymethylene / Polyacetal (Delrin®)</b>	High impact resistance; good mechanical strength; good resistance to oils, alcohols, alkalis, gasoline, xylene, toluene. Dielectric constant 3.7
<b>PP - Polypropylene</b>	Excellent resistance against chemicals including acids, solvents and solutions. High temperature resistance and good mechanical strength
<b>PTFE - Polytetrafluoroethylene</b>	Optimum resistance against high temperature and chemicals; low dielectric constant (2.0)
<b>TPU, Thermoplastic Polyurethane</b>	Elastic, resistant to abrasion, impact-resistant, oil- and grease-tolerant
<b>PVC - Polyvinylchloride</b>	Good mechanical strength, viscosity to impact; resistant to acids, alkalis
<b>PVC, irradiated</b>	Heat and chemical resistant, withstands short-term temperatures to 482° F
<b>PVDF - Polyvinylidene fluoride (Kynar®)</b>	Resistant to high and low temperatures, good resistance to chemicals (similar to PTFE), high mechanical strength
<b>Silicon</b>	For use at high or low ambient temperatures (-50 to +180 °C), moderate mechanical strength, average resistance against alkalis, acids, oils, and solvents
<b>IRPA12 - Irradiated Polyamide (nylon)</b>	Good mechanical strength, temp. resistant
<b>EPTR - Elastomer, Polymer Thermal Plastic</b>	Good fluid resistance
<b>TROG - Trogamid T</b>	Hard, rigid, good chemical resistance

### Metals

<b>AG</b>	Armorguard®
<b>SS</b>	Stainless Steel
<b>CPB</b>	Chrome Plated Brass
<b>CuZn - Brass</b>	Generally good resistance to industrial atmospheres
<b>GD - AISI12 - Aluminum, die-cast</b>	Low specific weight, long-life characteristics
<b>GD - ZnAl4Cu1 (Z410) - Zinc, die-cast</b>	Long-life characteristics
<b>TC</b>	PTFE Coated
<b>WG</b>	Weldguard®
<b>AL</b>	Anodized Aluminum
<b>SF - Stoneface®</b>	High abrasion resistance, excellent for MIG welding applications, high heat and weld flow immunity
<b>TS - Tool Steel</b>	Excellent durability

## Technical Reference | General Specifications

### Chemical Compatibility

The information in this chart is derived from reputable industry sources and is to be used only as a guide in selecting materials suitable for your application. Turck does not warrant in any fashion that the information in this chart is accurate or complete, or that any material is suitable for any purpose.

Most ratings listed here apply to a 48-hour exposure period.

Ratings: A - No effect  
 B - Minor effect  
 C - Moderate effect  
 D - Severe effect  
 φ - No specific data, but probable rating.

Housing Style	ABS	Trog. T	PA 12	PBT	PEI	POM	PP	PTFE	PUR	PVC	PVDF	306 SS	Al	Brass	Zinc
Ammonia, liquid	B	B	A	B	D	C/D	A	A	C	A	A	B	A	D	A
Chlorine anhydrous liquid	nd	nd	D	D	nd	C	D	A	C	D	A	C	D	D	nd
De-ionized water	nd	nd	A	nd	A	nd	A	A	nd	A	A	A	A	A	nd
Formic acid	D	D	D	A	nd	C	A	A	C	A	A	A/B	A	D	D
Gasoline	D	A	A	A	A	A	C	A	A	C	A	A	A	A	nd
Hydrochloric acid <40%	A	A/B	D	A	A	C	C	A	D	B	A	D	D	D	D
Hydrofluoric acid <50%	C	D	D	B	A	D	A	A	C	B	A	D	D	D	nd
Methanol	D	D	B	A	A	A	A	A	B	A	A	A	A	A	A
Phosphoric acid <40%	B(C)	D	B	A	A	D	A	A	Dφ	B	B	D	C	D	D
Potassium hydroxide <15%	A	A	C	B	A	B	A	A	C	A	A	B	D	D	nd
Sodium hydroxide <55%	A	A	C	B	A	B	A	A	B	A	D	B	D	D	D
Sodium hypochlorite ≤13%	B	nd	B	A	nd	C	A	A	B	A	A	C	D	D	A
Sulfuric acid <75%	B	A	D	A	A	D	A	A	C	A	A	D	D	D	D
Toluene	D	A	A	A	A	A	C	A	C	D	A	A	A	A	nd
Trichloroethylene	D	A	C	A	nd	B		A	D	D	B	A/B	D	A	A

We reserve the right to make technical alterations without prior notice.

### Maximum Tightening Torque Specifications

The tightening torque should be considered for all threaded sensors to prevent premature failures of sensors due to stresses on the barrel and/or internal electronics. The values below are the absolute maximum ratings and apply only to the mounting hardware provided with each sensor. It is recommended to always allow for tolerances when specifying a tightening torque to prevent accidental over-tightening of the sensor. Liquid thread sealants of an anaerobic base, such as Loctite, are recommended if strong vibrations are likely.

Caution: Sensor barrels are typically brass. Consider break torque when selecting grade of thread sealant.

Barrel Size	Metal Barrel	Plastic Barrel
5 mm	5 Nm (3.7 ft-lb)	----
8 mm	5 Nm (3.7 ft-lb)	----
8 mm (M08 Ferrite)	7 Nm (5.2 ft-lb)	----
12 mm	10 Nm (7.4 ft-lb)	1 Nm (0.7 ft-lb)
18 mm	25 Nm (18 ft-lb)	2 Nm (1.4 ft-lb)
30 mm	75 Nm (55 ft-lb)	5 Nm (3.7 ft-lb)
47 mm	90 Nm (66 ft-lb)	----



# Technical Reference | Conversions

## Fahrenheit to Celsius Temperature

\* Water Freezing Point

\*\* Water Boiling Point

For temperature conversions not given use the following formulas:

$$^{\circ}\text{Celsius} = (^{\circ}\text{Fahrenheit} - 32) \times .556$$

$$^{\circ}\text{Fahrenheit} = (^{\circ}\text{Celsius} \times 1.8) + 32$$



Degrees Fahrenheit	Degrees Celsius
-70	-56.7
-65	-53.9
-60	-51.2
-55	-48.4
-50	-45.6
-45	-42.8
-40	-40.0
-35	-37.3
-30	-34.5
-25	-31.7
-20	-28.9
-15	-26.1
-10	-23.4
0	-17.8
5	-15.0
10	-12.2
15	-9.5
20	-6.7
25	-3.9
30	-1.1
*32	*0.0
35	1.7
40	4.4
45	7.2
50	10.0
55	12.8
60	15.6
65	18.3
70	21.1

Degrees Fahrenheit	Degrees Celsius
75	23.9
80	26.7
85	29.2
90	32.2
95	35.0
100	37.8
105	40.6
110	43.4
115	46.1
120	48.9
125	51.7
130	54.5
135	57.3
140	60.0
145	62.8
150	65.6
155	68.4
160	71.2
165	73.9
170	76.7
175	79.5
180	82.3
185	85.1
190	87.8
195	90.6
200	93.4
205	96.2
210	99.0
**212	**100.0

We reserve the right to make technical alterations without prior notice.

## Drill Hole Sizes for Metric Threads

Thread Size	Pitch	Thru Hole (mm)	Tap Hole Dia. (mm)	Thru Hole (in)	Tap Hole Dia. (in)
M5 x 0.5	0.5	5.0	4.5	13/64	5/32
M8 x 1	1.0	8.0	7	21/64	1/4
M12 x 1	1.0	12.0	11	31/64	13/32
M18 x 1	1.0	18.0	17	23/32	41/64
M30 x 1.5	1.5	30.0	28	1-3/16	1-5/64
PG 13.5	1.41	20.4	19	13/16	23/32
PG 36	1.59	47.0	45.5	1-7/8	1-47/64

# Technical Reference | Conversions

## Millimeters Equivalents of Decimals and Fractions

Notes:

1M = 100 cm = 1000 mm

For conversions not given use the following formulas:

Millimeters = Inches x 25.4

Inches = Millimeters ÷ 25.4



We reserve the right to make technical alterations without prior notice.

Millimeters	Inches	Fraction
0.10	0.0039	
0.20	0.0079	
0.30	0.0118	
0.40	0.0157	
0.50	0.0197	
0.60	0.0236	
0.70	0.0276	
0.80	0.0315	
0.90	0.0354	
1.00	0.0394	
1.59	0.0625	1/16
2.00	0.0787	
3.00	0.1181	
3.18	0.1250	1/8
4.00	0.1575	
4.76	0.1875	3/16
5.00	0.1969	
6.00	0.2362	
6.35	0.2500	1/4
7.00	0.2756	
7.94	0.3125	5/16
8.00	0.3150	
9.00	0.3543	
9.53	0.3750	3/8
10.00	0.3937	
11.00	0.4331	
11.11	0.4375	7/16
12.00	0.4724	
12.70	0.5000	1/2
13.00	0.5512	
14.00	0.5512	
14.29	0.5625	9/16
15.00	0.5906	
15.88	0.6250	5/8
16.00	0.6299	
17.00	0.6693	
17.46	0.6875	11/16
18.00	0.7087	
19.00	0.7480	
19.05	0.7500	3/4
20.00	0.7874	

Millimeters	Inches	Fraction
20.64	0.8125	13/16
21.00	0.8268	
22.00	0.8661	
22.23	0.8750	7/8
23.00	0.9055	
23.81	0.9375	15/16
24.00	0.9449	
25.40	1.000	1
26.00	1.024	
27.00	1.063	
28.00	1.102	
29.00	1.142	
30.00	1.181	
31.00	1.220	
32.00	1.260	
33.00	1.299	
34.00	1.339	
35.00	1.378	
36.00	1.417	
37.00	1.457	
38.00	1.496	
39.00	1.535	
40.00	1.575	
41.00	1.614	
42.00	1.654	
43.00	1.693	
44.00	1.732	
45.00	1.772	
46.00	1.811	
47.00	1.850	
48.00	1.890	
49.00	1.929	
50.00	1.969	
51.00	2.008	
52.00	2.047	
53.00	2.087	
54.00	2.126	
55.00	2.165	
56.00	2.205	
57.00	2.244	
58.00	2.283	

Millimeters	Inches	Fraction
59.00	2.323	
60.00	2.362	
61.00	2.402	
62.00	2.441	
63.00	2.480	
64.00	2.520	
65.00	2.559	
66.00	2.598	
67.00	2.638	
68.00	2.677	
69.00	2.717	
70.00	2.756	
71.00	2.795	
72.00	2.835	
73.00	2.874	
74.00	2.913	
75.00	2.953	
76.00	2.992	
77.00	3.031	
78.00	3.071	
79.00	3.110	
80.00	3.150	
81.00	3.189	
82.00	3.228	
83.00	3.268	
84.00	3.307	
85.00	3.346	
86.00	3.386	
87.00	3.425	
88.00	3.465	
89.00	3.504	
90.00	3.543	
91.00	3.583	
92.00	3.622	
93.00	3.661	
94.00	3.701	
95.00	3.740	
96.00	3.780	
97.00	3.819	
98.00	3.858	
99.00	3.898	
100.00	3.937	

Technical Reference



## Technical Reference | Glossary

### **Axial Approach**

The approach of the target with its center maintained on the sensor reference axis.

### **Axially Polarized Ring Magnet**

A ring magnet whose poles are the two flat sides of the disk. Mounted on pistons for permaprox® cylinder position sensing through nonmagnetic cylinder walls.

### **Capacitive Proximity Sensor**

A proximity sensor producing an electrostatic field that senses conductive targets and nonconductive materials having a dielectric constant of >1 within its sensing zone.

### **Complementary Output**

Two outputs, one normally open and one normally closed, that can be used simultaneously.

### **Continuous Load Current**

The maximum current allowed to continuously flow through the sensor output in the ON state.

### **Correction Factors**

Percentage of the rated operating distance (Sn) that represents the operating distance for targets constructed from materials other than mild steel (mild steel's correction factor is 1.0).

### **Differential Travel (Hysteresis)**

The difference between the operating point as the target approaches the sensor face, and the release point as the target moves away. Given as a percentage of the operating distance (Sn).

### **Dynamic Output**

A sensor output that stays energized for a set duration of time, independent of the time the target is present (one-shot).

### **Embeddable (Shielded) Proximity Sensor**

A sensor that can be flush-mounted in any material without that material influencing the sensing characteristics.

### **Free Zone**

The space around a proximity sensor that must be kept free of any material capable of affecting the sensing characteristics.

### **Inductive Proximity Sensor**

A proximity sensor producing an electromagnetic field that senses only metal targets within its sensing zone.

### **Inductive Magnet Operated Sensor (Permaprox®)**

A solid-state proximity sensor using inductive technology to detect magnetic fields, giving a switch point output similar to that of an inductive proximity sensor.

### **Inrush Current**

The maximum instantaneous load current that a sensor can tolerate when switching the output. Commonly seen with capacitive loads.

### **IP Rating**

Ingress Protection rating per IEC 529.

### **Lateral Approach**

The approach of a target perpendicular to the sensor reference axis.

### **Load**

A device or circuit that is operated by the energy output of another device such as a proximity sensor.

### **M Threading**

ISO 68 Metric straight threading, designated as "Nominal Size" X "Pitch", in mm. (Ex. M5X0.5)

### **Minimum Load Current**

For 2-Wire sensors, the minimum load current defines the smallest specified current that a sensor requires for reliable operation.

### **NAMUR**

The acronym for a European standards organization.

### **NAMUR Sensor**

A 2-wire variable-resistance DC sensor whose operating characteristics conform to DIN 19 234. Requires a remote amplifier for operation. Typically used for intrinsically safe applications.

### **NEMA Rating**

An enclosure rating per NEMA Standard 250.

### **No-Load Current**

The current drawn by a DC proximity sensor from the power supply when the outputs are not connected to a load.

### **Nonembeddable (Nonshielded) Proximity Sensor**

A sensor is nonembeddable when a specified free zone must be maintained around its sensing face in order not to influence the sensing characteristics.

### **Normally Closed (N.C.)**

The output is OFF when the target is detected by the sensor.

### **Normally Open (N.O.)**

The output is ON when the target is detected by the sensor.

### **NPN Output (Current Sinking)**

A transistor output that switches the common or negative voltage to the load. Load is between sensor and positive supply voltage.

### **NPSM Threading**

American National Standard Straight Pipe Thread for Free-Fitting Mechanical Parts.

### **NPT Threading**

American National Standard Taper Pipe Thread.

## Technical Reference | Glossary

### Off-State (Leakage) Current

The current that flows through the load circuit when the sensor is in the OFF-state. Also known as leakage or residual current.

### Operating Distance

A distance at which the target approaching the sensing face along the reference axis causes the output signal to change.

### PG Threading

Steel conduit threading per German standard DIN 40 430.

### PNP Output (Current Sourcing)

Transistor output that switches the positive voltage to the load. Load is between sensor and common.

### Programmable Output

Sensor output whose N.O. or N.C. function can be selected by means of a jumper or specific terminal connection.

### Radially Polarized Ring Magnet

A ring magnet whose poles are the inner and outer diameter rings.

### Rated Operating Distance (Sn)

A conventional quantity used to designate the operating distance. It does not take into account either manufacturing tolerances or variations due to external conditions such as operating voltage and temperature.

### Reference Axis

An axis perpendicular to the sensing face and passing through its center.

### Repeatability

The deviation in the actual operating distance measured at a constant temperature and voltage over an 8-hour period. It is expressed as a percentage (%) of the rated operating distance (Sn).

### Response frequency

The maximum rate that the output can change in response to the input and still maintain linearity.

### Response Time

The time required for the device switching element to respond after the target enters or exits the sensing zone.

### Reverse Polarity Protection

Internal components that prevent damage to the sensor due to the incorrect connection of the power supply.

### Ripple

The alternating component remaining on a DC signal after rectifying, expressed in percentage of rated voltage.

### Sensing Face

The surface of the proximity sensor through which the electromagnetic (or electrostatic) field emerges.

### Short-Circuit Protection

The ability of a sensor to withstand a shorted condition (no current-limiting load connected) without damage.

### Slew Rate

The rate of change of the output voltage with respect to a step change in input. A change in output of 0 to 10 volts at a slew rate of 1.25 V/ms would take 8 ms to slew to the new value.

### Solid State

Pertains to devices using semiconductors instead of mechanical parts.

### Static Output

A sensor output that stays energized as long as the target is present.

### Switching Frequency

The maximum number of times per second that the sensor can change state (ON and OFF) under ideal conditions, usually expressed in Hertz (Hz).

### Time-Delay Before Availability

The length of time after power is applied to the sensor before it is ready to operate correctly, expressed in milliseconds (ms).

### Uprox Sensor®

An inductive proximity sensor that detects all metals at the same range. Uprox sensors are inherently weld-field immune, operate over a wider temperature range and have a higher switching frequency than standard inductive sensors.

### Uprox+ Sensor®

Same basic characteristics as the Uprox Sensor, but with a redesigned multi coil system which provides increased sensing capabilities. Uprox+ also carries an IP68 environmental rating

### Weld-Field Immunity (WFI)

The ability of a sensor not to false-trigger in the presence of strong magnetic fields typically produced by resistance welders.

### Wire-Break Protection

Results in the output being OFF on a DC sensor if either supply wire is broken.

# Notes



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# Warranty Terms and Conditions

## **RISK OF LOSS**

Delivery of the equipment to a common carrier shall constitute delivery to the Purchaser and the risk of loss shall transfer at that time to Purchaser. Should delivery be delayed due to an act or omission on the part of the Purchaser, risk of loss shall transfer to the Purchaser upon notification by Turck Inc. that the order is complete and ready for shipment.

## **WARRANTIES**

Turck Inc. (hereinafter "Turck") offers five (5) WARRANTIES to cover all products sold. They are as follows:

- 1) The **12-MONTH WARRANTY** is available for the products listed - generally those not covered by **LIFETIME, 5-YEAR, 24-MONTH or 18-MONTH** warranty. No registration required.
- 2) The **18-MONTH WARRANTY** is available for the products listed - generally those not covered by **LIFETIME or 5-YEAR WARRANTY**. No registration is required.
- 3) The **24-MONTH WARRANTY** is available for the products listed - generally those not covered by **LIFETIME, 5-YEAR or 18-MONTH**. No registration is required.
- 4) The **5-YEAR WARRANTY** is available generally for the products listed. No registration is required.
- 5) A **LIFETIME WARRANTY** is available for the products listed. It becomes effective when the accompanying **TURCK LIFETIME WARRANTY REGISTRATION** is completed and returned to Turck.

## **GENERAL TERMS AND CONDITIONS FOR ALL WARRANTIES**

- **12-MONTH STANDARD WARRANTY**
- **18-MONTH STANDARD WARRANTY**
- **24-MONTH STANDARD WARRANTY**
- **5-YEAR WARRANTY**
- **LIFETIME WARRANTY**

Turck warrants the Products covered by the respective WARRANTY AGREEMENTS to be free from defects in material and workmanship under normal and proper usage for the respective time periods listed above from the date of shipment from Turck. In addition, certain specific terms apply to the various WARRANTIES.

**THESE EXPRESS WARRANTIES ARE IN LIEU OF AND EXCLUDE ALL OTHER REPRESENTATIONS MADE - BOTH EXPRESSED AND IMPLIED. THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE FOR PRODUCTS COVERED BY THESE TERMS AND CONDITIONS.**

Turck warrants that the goods sold are as described, but no promise, description, affirmation of fact, sample model or representation, oral or written shall be part of an order, unless set forth in these terms and conditions, or are in writing and signed by an authorized representative of Turck. These WARRANTIES do not apply to any Product which has been subject to misuse, negligence, or accident - or to any Product which has been modified or repaired, improperly installed, altered, or disassembled - except according to Turck's written instructions.

These WARRANTIES are subject to the following conditions:

- 1) These WARRANTIES are limited to the electronic and mechanical performance only, as expressly detailed in the Product specifications and NOT to cosmetic performance.
- 2) These WARRANTIES shall not apply to any cables attached to, or integrated with the Product. However, the **18-MONTH WARRANTY** shall apply to cables sold separately by Turck.
- 3) These WARRANTIES shall not apply to any Products which are stored, or utilized, in harsh environmental or electrical conditions outside Turck's written specifications.
- 4) The WARRANTIES are applicable only to Products shipped from Turck subsequent to January 1, 1988.

## **ADDITIONAL SPECIFIC TERMS FOR:**

**(12-MONTH STANDARD WARRANTY) for Linear Displacement Transducers, EZ Track, RFID Products, Draw Wire Assemblies and Slip Rings.**

**(18-MONTH STANDARD WARRANTY) FOR Q-TRACK INDUCTIVE SENSORS, ULTRASONIC SENSORS, FLOW SENSORS, PRESSURE SENSORS, TEMPERATURE SENSORS, INCLINOMETERS, CABLES AND ALL NON-SENSING PRODUCTS SOLD BY TURCK INC. INCLUDING MULTI-SAFE, MULTI-MODUL, MULTI-CART AND RELATED AMPLIFIER PRODUCTS, RELAYS AND TIMERS.**

**(24-MONTH STANDARD WARRANTY) FOR ENCODERS excluding Draw Wire Assemblies.**

**5-YEAR WARRANTY FOR INDUCTIVE AND CAPACITIVE PROXIMITY SENSORS: The periods covered for the above WARRANTIES and Products shall be 12 MONTHS, 18-MONTHS, 24-MONTHS and 5-YEARS, respectively, from the date of shipment from Turck.**

**LIFETIME WARRANTY (OPTIONAL - REGISTRATION REQUIRED) FOR INDUCTIVE, INDUCTIVE MAGNET OPERATED AND CAPACITIVE PROXIMITY SENSORS SOLD TO THE ORIGINAL PURCHASER FOR THE LIFETIME OF THE ORIGINAL APPLICATION.**

# Warranty Terms and Conditions

## **THE FOLLOWING TERMS APPLY TO THE LIFETIME WARRANTY IN ADDITION TO THE GENERAL TERMS:**

- 1) This WARRANTY shall be effective only when the LIFETIME WARRANTY REGISTRATION has been completed, signed by the End User and an authorized Turck Representative or Distributor and has been received by Turck no later than six (6) months after installation in the End User's Plant, or two (2) years from the date product was shipped from Turck, whichever is sooner.
- 2) This warranty is available only to Turck's authorized Representatives, Distributors and to the Original User. (The term "Original User" means that person, firm, or corporation which first uses the Product on a continuous basis in connection with the operation of a production line, piece of machinery, equipment, or similar device.) In the event the ownership of the product is transferred to a person, firm or corporation other than the Original User, this WARRANTY shall terminate.
- 3) This WARRANTY is applicable only to the Original Application. In the event the machinery, equipment, or production line to which the Product is connected, or on which it is installed, is substituted, changed, moved or replaced, the WARRANTY shall terminate.
- 4) This WARRANTY shall be valid only if the Product was purchased by the Original User from Turck, or from an authorized Turck Distributor, or was an integral part of a piece of machinery and equipment obtained by the Original user from an Original Equipment Manufacturer, which itself, was purchased directly from Turck or from an authorized Distributor.

## **PURCHASER'S REMEDIES**

This Remedy shall apply to all WARRANTIES. If a Turck Distributor desires to make a WARRANTY Claim, the Distributor shall, if requested by Turck, ship the Product to Turck's factory in Minneapolis, Minnesota, postage or freight prepaid. If the User desires to make a WARRANTY Claim, they shall notify the authorized Turck Distributor from whom it was purchased or, if such Distributor is unknown, shall notify Turck. Turck shall, at its option, take any of the following two courses of action for any products which Turck determines are defective in materials or workmanship.

- 1) Repair or replace the Product and ship the Product to the Original Purchaser or to the authorized Turck Distributor, postage or freight prepaid; or
- 2) Repay to the Original Purchaser that price paid by the Original Purchaser; provided that if the claim is made under the LIFETIME WARRANTY, and such Product is not then being manufactured by Turck, then the amount to be repaid by Turck to the Original Purchaser shall be reduced according to the following schedule:

<u>Number of Years Since Date of Purchase by Original Purchaser</u>	<u>Percent of Original Purchase Price To Be Paid by Turck</u>
10	50%
15	25%
20	10%
More than 20	5%

**PURCHASER'S REMEDIES SHALL BE LIMITED EXCLUSIVELY TO THE RIGHT OF REPLACEMENT, REPAIR OR REPAYMENT AS PROVIDED AND DOES NOT INCLUDE ANY LABOR COST OR REPLACEMENT AT ORIGINAL PURCHASER'S SITE. TURCK SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF ANY WARRANTY, EXPRESSED OR IMPLIED, APPLICABLE TO THE PRODUCT, INCLUDING WITHOUT LIMITATION, ANY DAMAGES RESULTING FROM PROPERTY DAMAGE, PERSONAL INJURY OR BUSINESS INTERRUPTION.**

## **CONSIDER SAFETY AND PROTECTION PRECAUTIONS**

Turck takes great care to design and build reliable and dependable products, however, some products can fail eventually. You must take precautions to design your equipment to prevent property damage and personal injury in the unlikely event of failure. As a matter of policy, Turck does NOT recommend the installation of electronic controls as the sole device FOR THE PROTECTION OF PERSONNEL in connection with power driven presses, brakes, shears and similar equipment and, therefore, the customer should build in redundancy or dual control using approved safety devices for these applications.

Turck Inc. sells its products through Authorized Distributors. These distributors provide our customers with technical support, service and local stock. Turck distributors are located nationwide – including all major metropolitan market areas.

For Application Assistance or for the location of your nearest Turck distributor, call:

1-800-544-7769

Specifications in this manual are subject to change without notice. Turck also reserves the right to make modifications and makes no guarantee of the accuracy of the information contained herein.

Literature and Media questions or concerns?  
Contact Turck USA Marketing – [tusa.marketing@turck.com](mailto:tusa.marketing@turck.com)

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