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# TURCK

## Product Selection Guide IM12 Interface Series



# IM12 Interface Series

Interface devices are the true all-rounders in the control cabinet. They combine protecting, isolating, converting and supply tasks in the smallest space. A further major challenge are the requirements in standards. In this environment, the users expect reliability, precision and safety.

Turck sets a new standard in the field of safety-barriers and analog-signal isola-

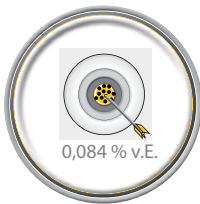
tors with the new IM12 interface device series. Fast and precise signal processing in the smallest space, reliable supply of the connected instrumentation and long maintenance-free operation are the most important criteria in the selection.

The IM12 series sets standards in many respects. The devices were developed according to the current norms and stan-

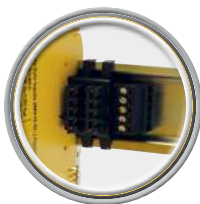
dards, and are the latest interface platform on the market. You therefore benefit from investment security and availability for a long period of time. The devices of the IM12 series are designed for processing of switching, NAMUR, frequency, current, voltage and resistance signals.



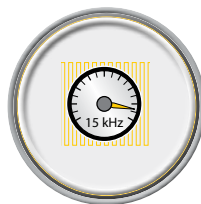
Clear signaling acc. to NE44



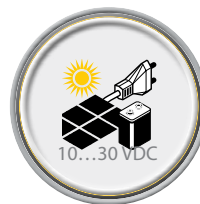
Best total performance at 40 °C for analog signal isolators



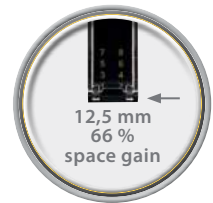
Power rail + Collective fault signal optional



Fastest isolating switching amplifier up to 15 kHz



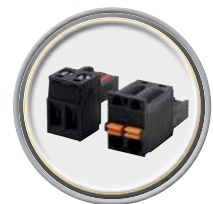
Wide power supply range



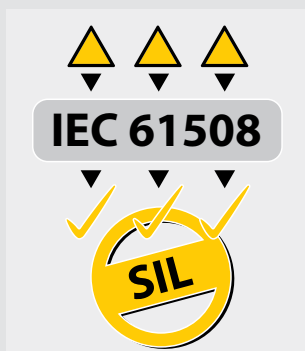
- Width 12.5 mm
- 4 terminal strips
- Up to 66 % space gain



- Simple operation
  - DIP switch
- Parameterizable via FDT/DTM



Screw or cage clamp terminals



**Safe**  
Safety first – is a maxim at Turck. With the IM12 series, we want to contribute to your system security. All devices have been developed and manufactured in accordance with the requirements of the IEC61508 and can be used in safety circuits up to SIL2.



**Global**  
Turck is a globally operating company, thus fulfilling requirements of international markets. We offer worldwide approvals, and thus ensure the applicability of devices in different systems.

# IM12 Interface - Part Number Key

IM12 - DI03 - 1S - 1R - SPR / 24VDC / CC

## Housing

IM12 = non ex 12.5 mm wide

## Device Type & Device Function

DI = Digital Input

- 1 = line fault monitoring
- 2 = no line fault monitoring
- 3 = line fault monitoring with selectable alarm output

FI = Frequency Input

- 1 = Namur/dry contact, or pulse
- 2 = Namur/dry contact, or pulse, or 3-wire

AI = Analog Input

- 1 = 4...20mA active/passive line fault monitoring
- 2 = 4...20mA active/passive no line fault monitoring
- 3 = 0/4...20mA active/passive
- 4 = 4...20mA passive
- 5 = 0/4...20mA passive

TI = Temperature Input

- 1 = 2-4 wire RTD
- 2 = Thermocouple, or 3-4 wire RTD, or mV
- 3 = Thermocouple, or mV

AO= Analog Output

- 1 = 4...20mA active with line fault monitoring
- 2 = 4...20mA active no line fault monitoring

DO= Digital Output

- 1 = curve 1 with line fault monitoring
- 2 = curve 2 with line fault monitoring
- 3 = curve 3 with line fault monitoring
- 4 = curve 4 with line fault monitoring
- 5 = curve 5 with line fault monitoring

CD= Coupling Device

- 1 = behavior over terminal blocks

PA = Potentiometer Amplifier

- 2 = 3-5 wire

## Field Side

Channels	Signal Type
1	S = switch
2	NAM = Namur
	F = frequency
	I = current
	U = voltage
	TC = thermocouple
	RTD = resistor temperature detector
	POT = potentiometer
	R = resistor
	MTIS = moisture temperature infrared switch

## Terminal Electrical Connection

- CC = cage clamps
- Blank = screw clamps

## Supply

- 24VDC = 10...30VDC
- L = loop power

## Special Function

- H = hart
- C = parametrized via PC
- PR = power rail
- S = alarm output
- 0 = none

## DCS Side

Channels	Signal Type
1	I = current
2	U = voltage
	T = potential free transistor
	PNP = positive switching transistor
	NPN = negative switching transistor
	MT = mosfet
	R = relay
	RTD = resistor temperature detector
	NAM = Namur
	F = frequency
	PP = push pull (level)

# IM12 Interface - Types and Features

## Digital Input Barriers

Approvals: SIL 2, ATEX, cUL, CE

ID Number	Part Number	Input			Output						Power		Terminal	
		Channels	Line monitoring*	Namur/Dry Contact	Channels	Namur	Relay	Transistor	Push-Pull	Alarm	Connector	Power Rail**	Screw	Cage Clamp
7580028	IM12-DI03-1S-2R-S/24VDC	1	S	•	2		•			•	•		•	
7580029	IM12-DI03-1S-2R-SPR/24VDC	1	S	•	2		•			•		•		•
7580030	IM12-DI03-1S-2R-S/24VDC/CC	1	S	•	2		•			•				•
7580031	IM12-DI03-1S-2R-SPR/24VDC/CC	1	S	•	2		•			•		•		•
7580032	IM12-DI03-1S-2T-S/24VDC	1	S	•	2			•		•			•	
7580033	IM12-DI03-1S-2T-SPR/24VDC	1	S	•	2			•		•		•		•
7580034	IM12-DI03-1S-2T-S/24VDC/CC	1	S	•	2			•		•				•
7580035	IM12-DI03-1S-2T-SPR/24VDC/CC	1	S	•	2			•		•		•		•
7580036	IM12-DI01-2S-2R-0/24VDC	2	S	•	2		•				•		•	
7580037	IM12-DI01-2S-2R-PR/24VDC	2	S	•	2		•					•		•
7580038	IM12-DI01-2S-2R-0/24VDC/CC	2	S	•	2		•				•			•
7580039	IM12-DI01-2S-2R-PR/24VDC/CC	2	S	•	2		•					•		•
7580040	IM12-DI01-2S-2T-0/24VDC	2	S	•	2			•			•		•	
7580041	IM12-DI01-2S-2T-PR/24VDC	2	S	•	2			•				•		•
7580042	IM12-DI01-2S-2T-0/24VDC/CC	2	S	•	2			•			•			•
7580043	IM12-DI01-2S-2T-PR/24VDC/CC	2	S	•	2			•				•		•
7580044	IM12-DI01-2S-2PP-0/24VDC	2	S	•	2				•		•		•	
7580045	IM12-DI01-2S-2PP-PR/24VDC	2	S	•	2				•			•		•
7580046	IM12-DI01-2S-2PP-0/24VDC/CC	2	S	•	2				•		•			•
7580047	IM12-DI01-2S-2PP-PR/24VDC/CC	2	S	•	2				•			•		•
7580048	IM12-DI03-1S-1NAM1R-0/24VDC	1	S	•	2	•	•				•		•	
7580049	IM12-DI03-1S-1NAM1R-PR/24VDC	1	S	•	2	•	•					•		•
7580050	IM12-DI03-1S-1NAM1R-0/24VDC/CC	1	S	•	2	•	•				•			•
7580051	IM12-DI03-1S-1NAM1R-PR/24VDC/CC	1	S	•	2	•	•					•		•
7580052	IM12-DI03-1S-1NAM1T-0/24VDC	1	S	•	2	•		•			•		•	
7580053	IM12-DI03-1S-1NAM1T-PR/24VDC	1	S	•	2	•		•				•		•
7580054	IM12-DI03-1S-1NAM1T-0/24VDC/CC	1	S	•	2	•		•			•			•
7580055	IM12-DI03-1S-1NAM1T-PR/24VDC/CC	1	S	•	2	•		•				•		•

\* F = Fixed, S = Selectable

\*\* The power rail is a connector based system comprised of an optional power supply module which feeds power to all devices via a power rail connector. (See accessories on page 8)

# IM12 Interface - Types and Features

## Analog Input Barriers

Approvals: SIL 2, ATEX, cUL, CE

ID Number	Part Number	Input			Output			Power		Terminal		
		Channels	Line monitoring*	HART	Channels	4-20 mA Source/Sink	1-5 V Source	HART	Connector	Power Rail**	Screw	Cage Clamp
7580320	IM12-AI01-1I-2IU-HPR/24VDC	1	F	•	2	•	•	•	•	•	•	
7580321	IM12-AI01-1I-2IU-H0/24VDC	1	F	•	2	•	•	•	•	•	•	
7580322	IM12-AI01-1I-2IU-HPR/24VDC/CC	1	F	•	2	•	•	•	•	•	•	•
7580324	IM12-AI01-1I-2IU-H0/24VDC/CC	1	F	•	2	•	•	•	•	•	•	•
7580325	IM12-AI01-2I-2IU-H0/24VDC	2	F	•	2	•	•	•	•	•	•	•
7580326	IM12-AI01-2I-2IU-HPR/24VDC/CC	2	F	•	2	•	•	•	•	•	•	•
7580327	IM12-AI01-2I-2IU-H0/24VDC/CC	2	F	•	2	•	•	•	•	•	•	•
7580332	IM12-AI01-1I-1IU-HPR/24VDC	1	F	•	1	•	•	•	•	•	•	•
7580333	IM12-AI01-1I-1IU-H0/24VDC	1	F	•	1	•	•	•	•	•	•	•
7580334	IM12-AI01-1I-1IU-HPR/24VDC/CC	1	F	•	1	•	•	•	•	•	•	•
7580335	IM12-AI01-1I-1IU-H0/24VDC/CC	1	F	•	1	•	•	•	•	•	•	•

## Analog Output Barriers

Approvals: SIL 2, ATEX, cUL, CE

ID Number	Part Number	Input				Output			Power		Terminal	
		Channels	Line monitoring*	4-20 mA Source/Sink	HART	Channels	4-20 mA Source/Sink	HART	Connector	Power Rail**	Screw	Cage Clamp
7580420	IM12-AO01-1I-1I-HPR/24VDC	1	F	•	•	1	•	•	•	•	•	•
7580421	IM12-AO01-1I-1I-H0/24VDC	1	F	•	•	1	•	•	•	•	•	•
7580422	IM12-AO01-1I-1I-HPR/24VDC/CC	1	F	•	•	1	•	•	•	•	•	•
7580423	IM12-AO01-1I-1I-H0/24VDC/CC	1	F	•	•	1	•	•	•	•	•	•
7580424	IM12-AO01-2I-2I-HPR/24VDC	2	F	•	•	2	•	•	•	•	•	•
7580425	IM12-AO01-2I-2I-H0/24VDC	2	F	•	•	2	•	•	•	•	•	•
7580426	IM12-AO01-2I-2I-HPR/24VDC/CC	2	F	•	•	2	•	•	•	•	•	•
7580427	IM12-AO01-2I-2I-H0/24VDC/CC	2	F	•	•	2	•	•	•	•	•	•

\* F = Fixed, S = Selectable

\*\* The power rail is a connector based system comprised of an optional power supply module which feeds power to all devices via a power rail connector. (See accessories on page 8)

# IM12 Interface - Types and Features

## Analog Temperature Barriers

Approvals: SIL 2, ATEX, cUL, CE

Configuration: PC Port\*\*\*

ID Number	Part Number	Input						Output			Power		Terminal		
		Channels	Line monitoring*	2, 3, 4-wire RTD	2, 3-wire RTD	mV	Thermocouple	Resistor	Channels	Relay	4-20 mA Active/Passive	Connector	Power Rail**	Screw	Cage Clamp
7580525	IM12-TI02-1TCURTDR-111R-CPR/24VDC	1	F		•	•	•	•	2	•	•		•	•	
7580526	IM12-TI02-1TCURTDR-111R-C0/24VDC/CC	1	F		•	•	•	•	2	•	•		•		•
7580527	IM12-TI02-1TCURTDR-111R-C0/24VDC	1	F		•	•	•	•	2	•	•		•		•
7580528	IM12-TI02-1TCURTDR-111R-CPR/24VDC/CC	1	F		•	•	•	•	2	•	•		•		•
7580529	IM12-TI02-2TCURTDR-2I-CPR/24VDC	2	F		•	•	•	•	2		•		•	•	
7580530	IM12-TI02-2TCURTDR-2I-CPR/24VDC/CC	2	F		•	•	•	•	2		•		•		•
7580531	IM12-TI02-2TCURTDR-2I-C0/24VDC/CC	2	F		•	•	•	•	2		•		•		•
7580532	IM12-TI02-2TCURTDR-2I-C0/24VDC	2	F		•	•	•	•	2		•		•		•
7580533	IM12-TI01-2RTDR-2I-CPR/24VDC	2	F	•				•	2		•		•	•	
7580534	IM12-TI01-2RTDR-2I-C0/24VDC	2	F	•				•	2		•		•	•	
7580535	IM12-TI01-2RTDR-2I-CPR/24VDC/CC	2	F	•				•	2		•		•		•
7580536	IM12-TI01-2RTDR-2I-C0/24VDC/CC	2	F	•				•	2		•		•		•

## Frequency Barriers

Approvals: SIL 2, ATEX, cUL, CE

Configuration: PC Port\*\*\*

ID Number	Part Number	Input					Output			Power		Terminal	
		Channels	Line monitoring*	Namur/Dry Contact	3-wire NPN/PNP	External Signal Source	Channels	Relay	4-20 mA Active/Passive	Connector	Power Rail**	Screw	Cage Clamp
7580224	IM12-FI01-1SF-111R-CPR/24VDC	1	F	•	•	•	2	•	•		•	•	
7580225	IM12-FI01-1SF-111R-C0/24VDC	1	F	•	•	•	2	•	•		•		•
7580226	IM12-FI01-1SF-111R-CPR/24VDC/CC	1	F	•	•	•	2	•	•		•		•
7580227	IM12-FI01-1SF-111R-C0/24VDC/CC	1	F	•	•	•	2	•	•		•		•
7580228	IM12-FI01-2SF-2I-CPR/24VDC	2	F	•	•	•	2		•		•	•	
7580229	IM12-FI01-2SF-2I-C0/24VDC	2	F	•	•	•	2		•		•		•
7580230	IM12-FI01-2SF-2I-CPR/24VDC/CC	2	F	•	•	•	2		•		•		•
7580231	IM12-FI01-2SF-2I-C0/24VDC/CC	2	F	•	•	•	2		•		•		•

\* F = Fixed, S = Selectable

\*\* The power rail is a connector based system comprised of an optional power supply module which feeds power to all devices via a power rail connector. (See accessories on page 8)

\*\*\* PC configuration requires M12 to serial cable and USB Master. (See accessories on page 8)

# IM12 Interface - Types and Features

## Relay Coupler Barriers

Approvals: SIL 2, ATEX, cUL, CE

ID Number	Part Number	Input		Output		Power	Terminal	
		Channels	10...30VDC	Channels	Relay	Loop-powered	Screw	Cage Clamp
7580622	IM12-CD01-2R-2U-0/L	3	•	3	•	•	•	
7580623	IM12- CD01-2R-2U-0/L/CC	3	•	3	•	•		•

# IM12 Interface - Technical Information



Dimensions	Technical data	
	Operating voltage	10...30 VDC
	Suitable for use in safety circuits up to	SIL 2 acc. to IEC 61508
	Dimensions	12.5 x 112 x 110 mm
	Application areas	II 3(1)G / II 3G(1)D
	Explosion protection type	Ex ec nC IIC T4 Gc, Ex ec IIC T4 Gc
	Ambient temperature	-25...+70 °C

## Availability/Reliability

- Transparent cover

## High channel density

- 4 Connection possibilities on each side

## Easily mounted

- Power supply via optional power rail

## Accessories

ID	Part Number	Description
7580942	IMX12-CC-2X-4BK	Removable spring terminals, 2-pin, Black (4pcs)
7580940	IMX12-SC-2X-4BK	Removable screw terminals, 2-pin, Black (4pcs)
7580610	IMX12-PS02-UI-UIR-PR/24VDC	Power supply module w/removable screw terminals
7580611	IMX12-PS02-UI-UIR-PR/24VDC/CC	Power supply module w/removable spring terminals
7525110	IOL-COM/3M	M12 to serial plug device cable
6825482	USB-2-IOL-0002	USB to M12 IO-Link Master



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