Your Global Automation Partner

TURCK

IMX12 | IM12 | IMXK12
Interface Technology

The Right Solution for Every Application

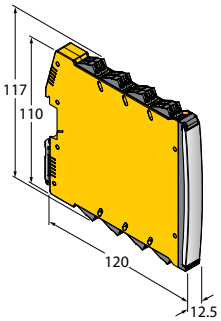
Interface devices are veritable multi-talents in the control cabinet. They combine the tasks of protecting, isolating, converting and supplying in the smallest possible space. The requirements of standards place even further demands on them, with users expecting here a high level of reliability, precision and safety.

With the IMX12 interface device series, Turck is setting a new standard in the field of Ex isolation barriers and Ex analog signal isolators. Fast and precise signal processing where space is at a premium, reliable power supply of the connected instrumentation as well as lasting, zero maintenance operation are key selection criteria.

The IMX12, IM12 and IMXK12 series are setting standards in many areas. The devices were developed in accordance with the latest standards and regulations and therefore offer the most state-of-the-art interface platform on the market. As a user, you are given the benefit of investment security and availability over the long term. The IMX12, IM12 and IMXK12 device series are available for the processing of switching, Namur, frequency, current, voltage and resistance signals.

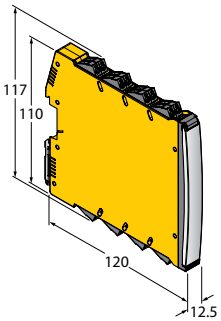
IMX12 – for intrinsically safe signals

EX interface devices for the safe isolation and processing of intrinsically safe standard signals



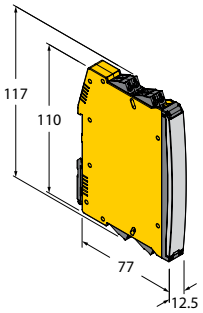
IM12 – for standard applications

Interface devices for the safe isolation and processing of standard signals in machine and plant building, as well as for applications in the process industry not requiring the transfer of intrinsically safe signals.



IMXK12 – the compact series

EX interface devices for the safe isolation and processing of intrinsically safe standard signals in applications requiring small mounting dimensions for restricted spaces, such as in compact control cabinets.



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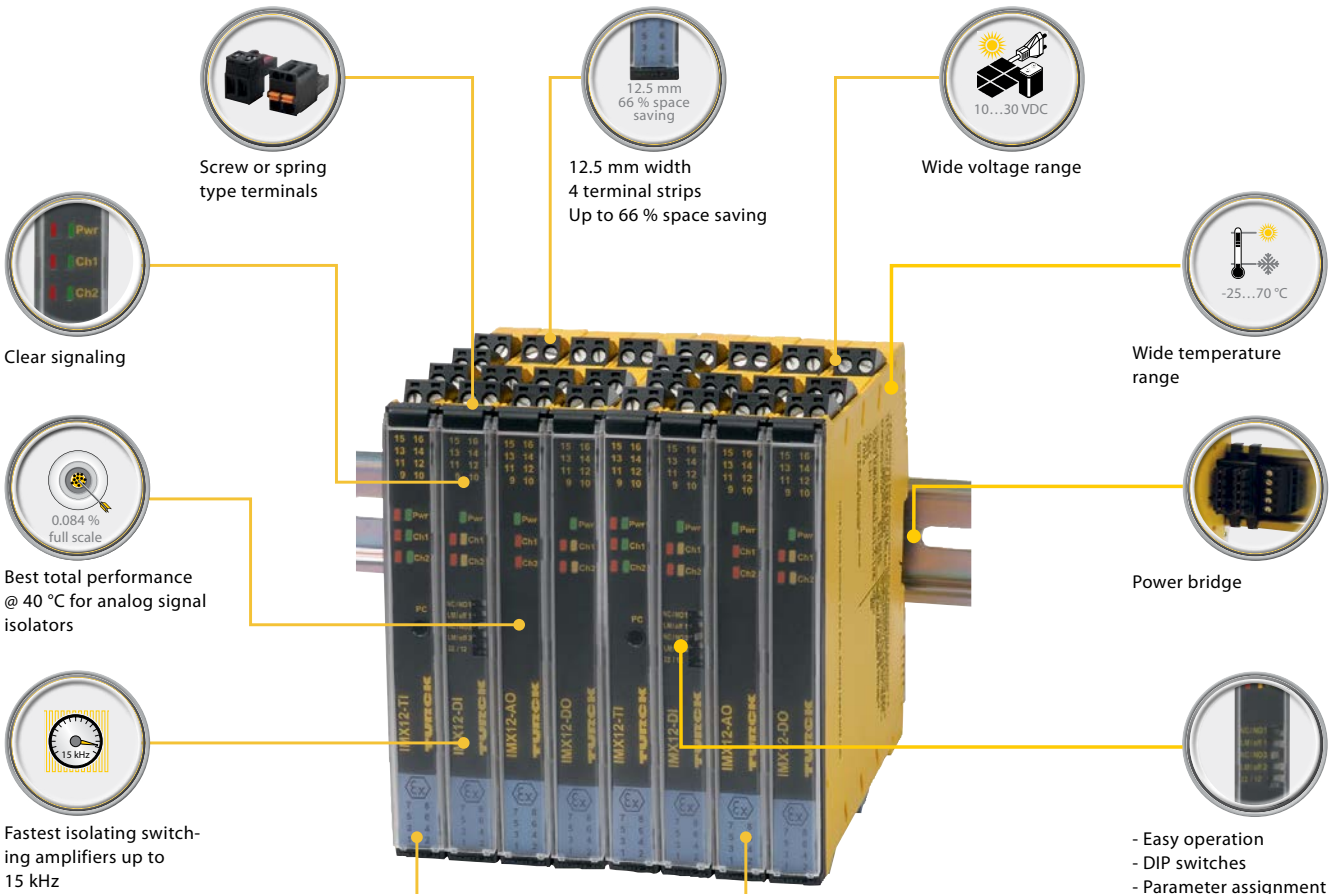
IMX12 | IM12 | IMXK12 – All the Benefits in Detail



50 Jahre Interfacetechnik

Reliable
Turck draws on many years of experience in the field of interface technology. The IMX12, IM12 and IMXK12 series combine this experience with the latest technology. Users benefit here from an excellent basis for long-term investment security.

Global
As a company with worldwide operations, Turck meets all the requirements of international markets. With worldwide approvals we ensure the suitability of the interface devices for a wide range of different applications all round the globe.

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12.5 mm housing width
Ideal for compactly designed systems and large signal volumes when packing density is a key requirement.

Functional safety
The development is in accordance with the IEC 61508 full assessment. The devices can be used in functional safety circuits up to SIL2, the relay couplers up to SIL3.

Power supply voltage 10…30 VDC
Wide voltage range that is adapted to the different supply voltages in plants. The devices offer improved protection for undervoltage and operate with startup processes without any problems. Machines and plants with battery operation make up another application range.

HART® transparent
The HART® signal of a connected transducer is transferred to the higher-level control system.

Power bridge supply
Power bridge supply for multiple devices and for transferring a collective fault signal to the controller.

Suitable for worldwide use
Worldwide use thanks to a comprehensive approval package such as for the IMX12 devices which process intrinsically safe signals: ATEX, IECEx, NEPSI, cULus, INMETRO, Kosha, TR CU, TIIS, cFM.

PC configurable
Speed and temperature transducer parameters can be set easily from the computer.

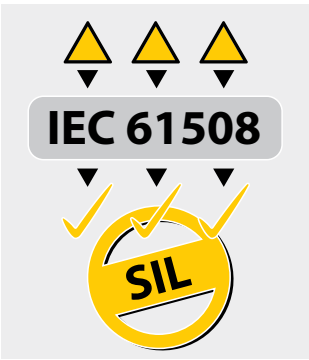
-25…70 °C ambient temperature
Wide temperature range for applications in severe temperature conditions such as outdoor control cabinets.

Explosion protection
IMX12 and IMXK12 interface devices are used for processing intrinsically safe standard signals.

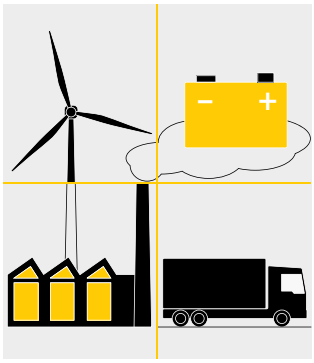
- Application range: II (1) G, II (1) D→ associated equipment for field devices right through to Zone 0
- Explosion protection type: [Ex ia Ga] IIC [Ex ia Da] IIIC Ex ec nC IIC T4 Gc Ex ec IIC T4 Gc

IM12 interface devices are used for non-intrinsically safe standard signals. They can also be installed in the ATEX area in Zone 2.

- Application range: II 3(1)G / II 3G(1) D→ associated equipment for field devices in Zone 2
- Explosion protection type:Ex ec nC IIC T4 GcEx ec IIC T4 Gc

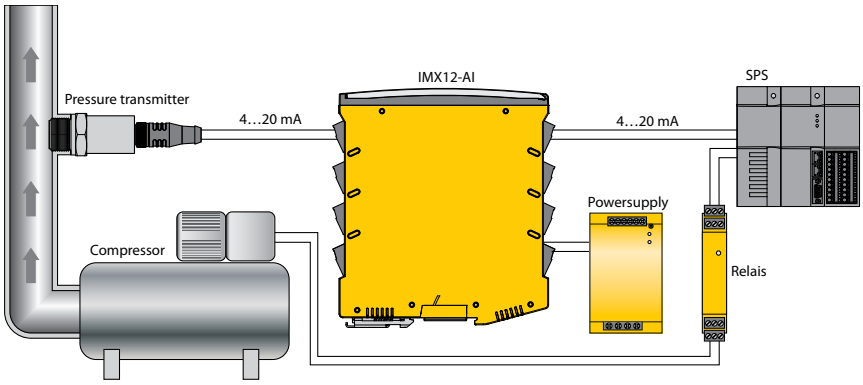


Safe
At Turck, safety is a top priority. The devices of the IMX12, IM12 and IMXK12 series provide a major contribution to the safety of your plant. All devices have been developed and manufactured in accordance with IEC 61508 and can be used in safety-related circuits up to SIL2.



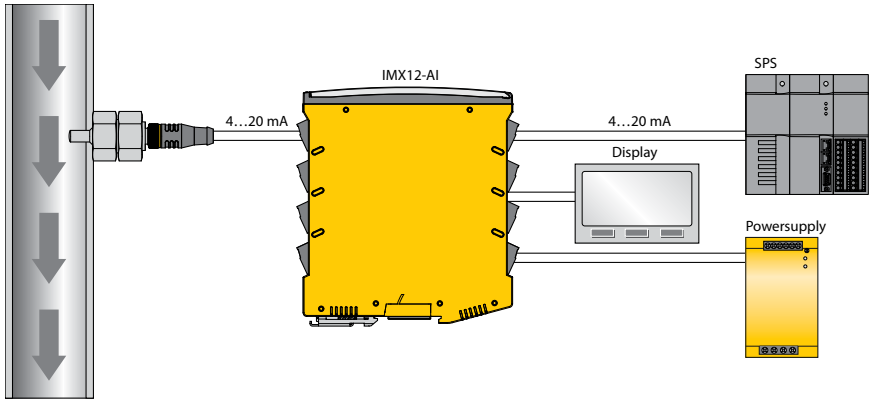
Flexible
Because no application is identical to another, demanding requirements are placed on the adaptability of the instrumentation. With the versatile functionality and a wide power supply range from 10…30 VDC, the IMX12, IM12 and IMXK12 series are designed to meet these requirements.

Application Examples

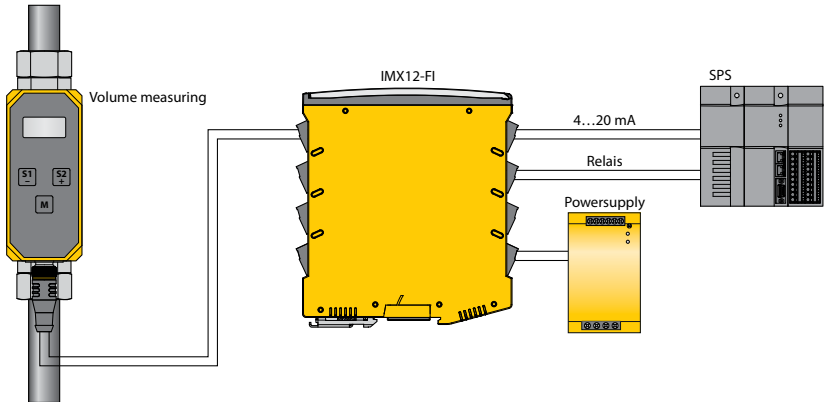


Analog signal transfer from active or passive fieldbus stations via the IMX12-AI isolating transducer. From the intrinsically safe area to the passive input card of the controller. The output side of the IMX12-AI can be adapted to the application as a source or sink. The devices can support a burden of up to 800 ohms on the output side.

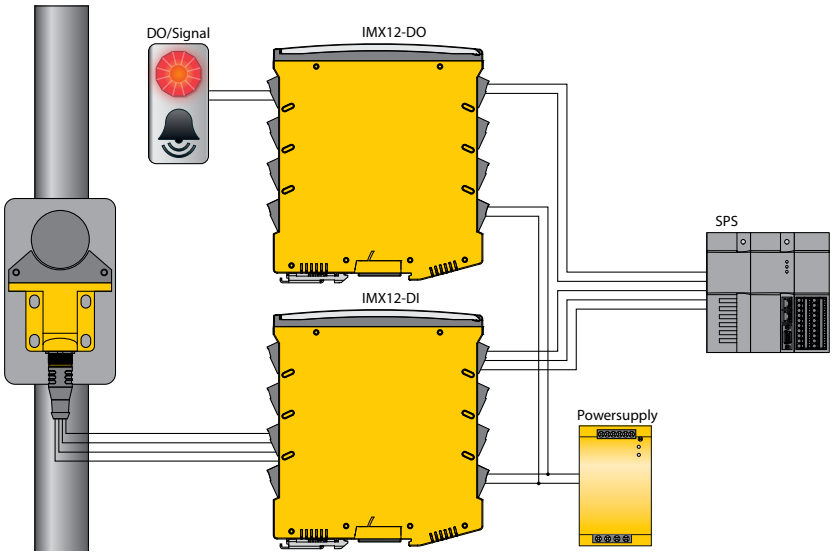
Typical applications include the control of compressors for pressure regulation.



The IMX12-AI-1I-2IU splitter variant multiplies the input signal. For example, this can be used for an additional display for visualization in the field.

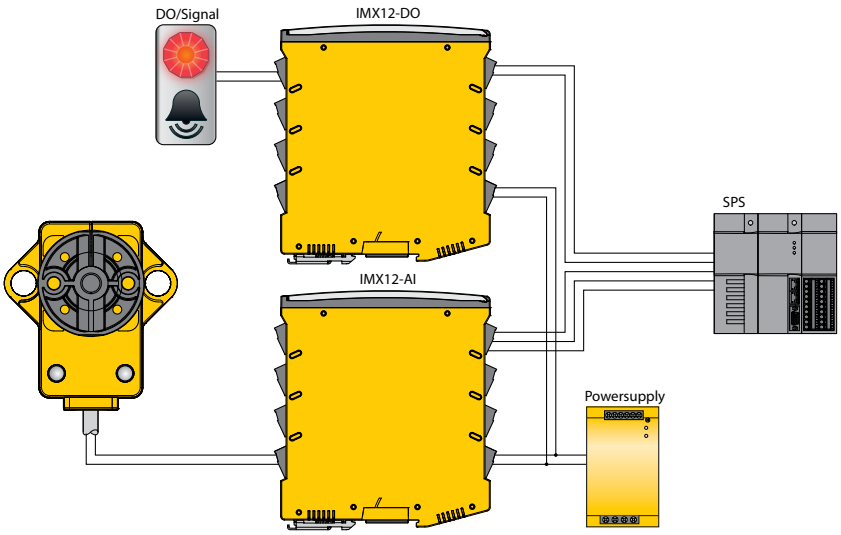


Gas meters in the EX area are another application. The pulses here are counted by the pulse counter function of the frequency transducer/pulse counter and routed to the controller.



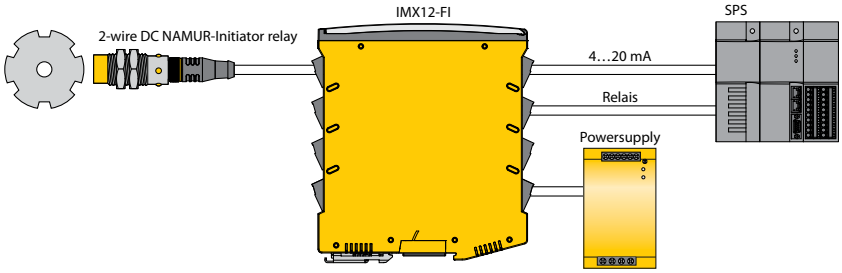
A classical application in the process industry is the querying of valve positions in pipes by means of sensors which pass on their switch points via an IMX12-DI isolating switching amplifier to the controller.

The resulting status indication is handled by the actuation of EX transmitters via the IMX12-DO valve control module.



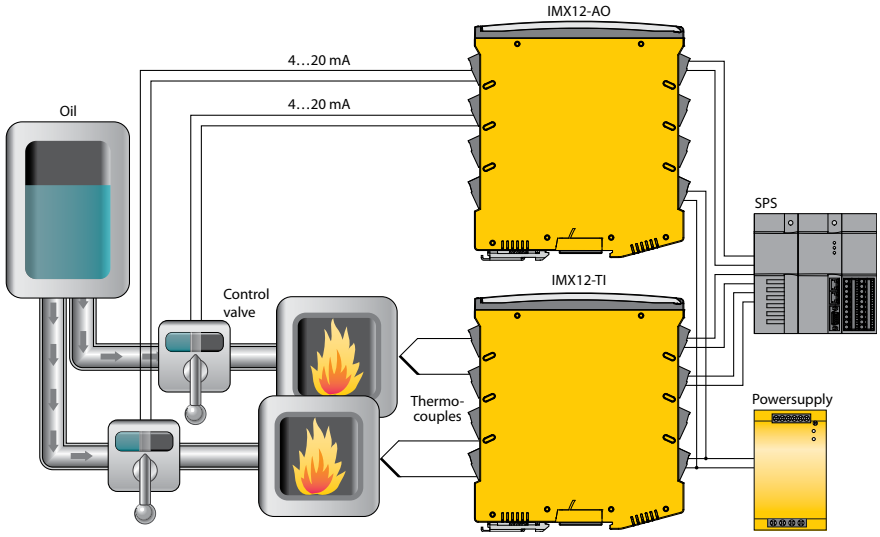
The continuous querying of angles is an important application in the process industry. The IMX12-AI isolating transducers transfer the signal of the sensor to the controller.

The resulting status indication is actuated by the EX sensors via the IMX12-DO valve control module.



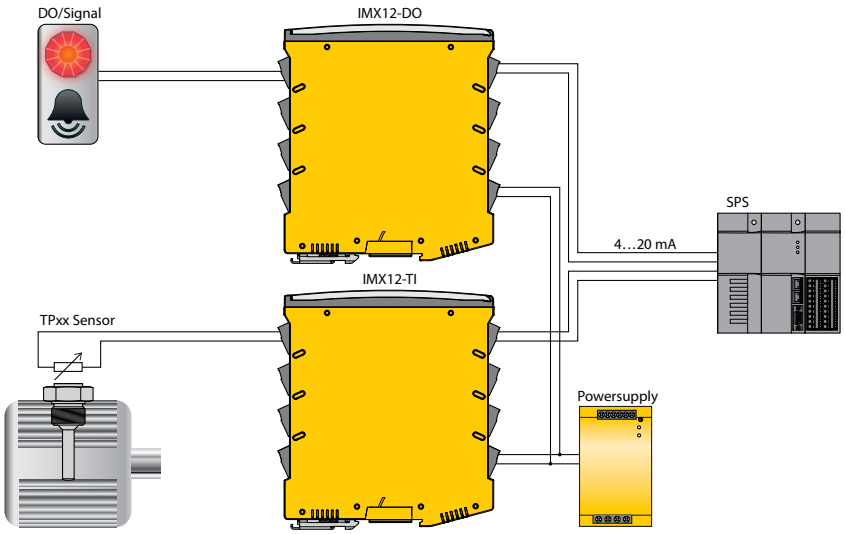
The frequency transducer/pulse counter is provided with intrinsically safe input circuits and transfers intrinsically safe frequency signals up to 20000 Hz from the explosion hazardous area to the safe area. Limit values, slippage, clockwise/anticlockwise rotation can also be monitored.

Application Examples



RTD (PT, NI) and thermocouples can be connected to the temperature measuring amplifiers. Settings such as limit values can be set on the output. The devices can thus also be used for essential tasks even without a controller.

Burner controls are a classical application, in which the temperature differences in the explosion protected areas can be transferred from a temperature transducer to the controller. The control valves are supplied with control signals via output analog signal isolators in the explosion protected area.



The temperature monitoring of motors in the explosion protected area can be implemented using an IMX12-TI temperature measuring amplifier. The overtemperature can be indicated accordingly to the EX area via an IMX12-DO valve control module.

Type Codes

IM X 12 – DI01 – 1S – 2R – PR / 24 VDC CC

IM X Design

Application area/Design

X	Ex-area, intrinsically safe
Blank	Zone 2, non-intrinsically safe
K	Ex-area, intrinsically safe, compact design

Design

IM	Interface module

12 Housing width

Housing width [mm]

12	12 mm
18	18 mm

– DI01 Device functions –

Device functions

DI01	Isolating switching amplifier, digital input, line monitoring can be switched off
DI02	Isolating switching amplifier, digital input, without line monitoring
Di03	Isolating switching amplifier, digital input, NAMUR repeater or alarm output
FI01	Frequency transducer/pulse counter, frequency input
AI01	Isolating transducer, analog input, 4...20 mA active, passive line monitoring
AI02	Isolating transducer, analog input, 4...20 mA active, passive
TI01	Temperature transducer, temperature input, RTD
TI02	Temperature transducer, temperature input TC and RTD, millivolt
AO01	Analog signal isolator, analog output, 4...20 mA active, line monitoring
AO02	Analog signal isolator, analog output, 4...20 mA active
DO01	Solenoid driver, digital output, line monitoring, device-specific curve
LC01	Level control
CD01	Relay coupler, behavior adjustable via terminal connection
PS01	Power supply, power supply unit
CCM	Cabinet guard, see type code CCM

1S Number of inputs –

Number of inputs

1	**S**	Switch
2	**NAM**	NAMUR
3	**F**	Frequency
4	**I**	Current
5	**U**	Voltage
6	**TC**	Thermocouple
7	**RTD**	T resistor
8	**POT**	Potentiometer
9	**R**	Resistor
10	**MTIS**	Humidity
11	**T**	Temperature
12	**NPN**	Infrared
13	**Reed**	Switch

2R Number of outputs –

Number of outputs

1	**I**	Current
2	**U**	Voltage
3	**T**	Potential-free transistor
4	**PNP**	PNP switching transistor
5	**NPN**	NPN switching transistor
	MT	MOSFET
	R	Relay
	RTD	Resistor
	NAM	NAMUR
	F	Frequency
	PP	Push-pull (level)

PR Additional functions

Additional functions

H	HART®
C	PC configurable
PR	Power bridge
0	Without power bridge
S	Fault alarm output
P	Pulse
IOL	IO-Link
Blank	Not parameterizable or parameterizable via switches

/ 24 VDC Power supply

Power supply

24 VDC	10…30 VDC
24 VUC	10…30 VUC
L	Loop-powered
W1	20…250 VAC/20…125 VAC
W2	20…250 VAC/20…250 VAC
W2	20…250 VAC20…250 VDC

CC Electrical connection

Electrical connection

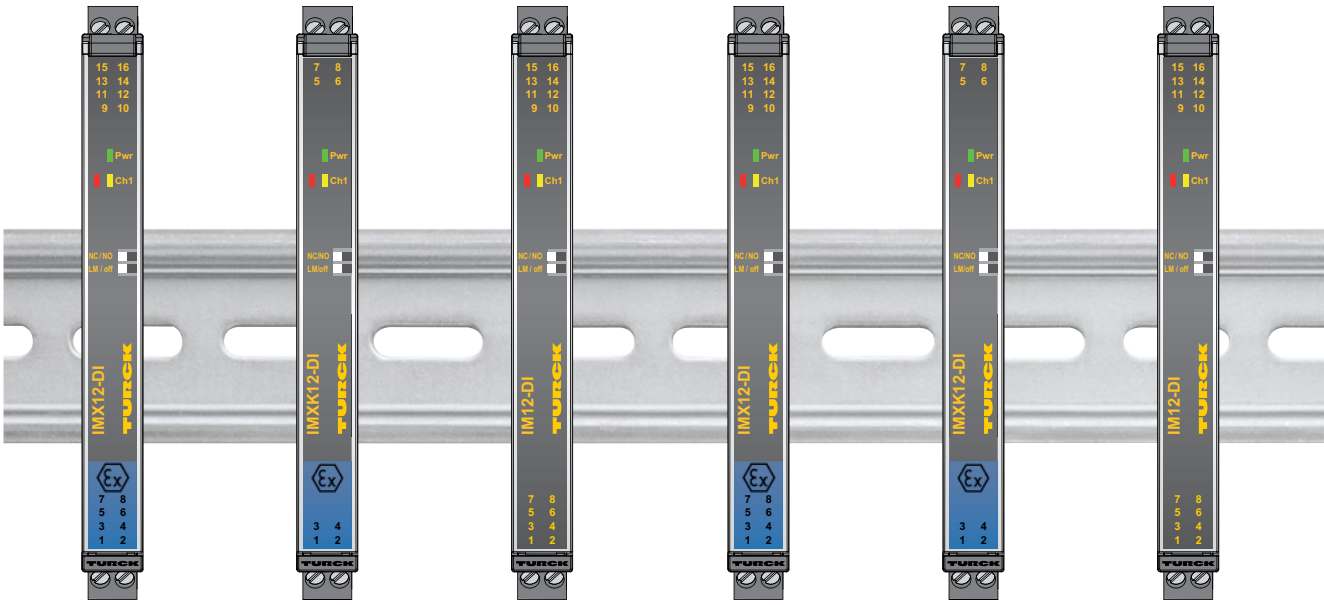
CC	Spring type terminals
Empty	Screw terminals

Example of devices with spring type terminals:
IM12-DI01-2S-2T-0/24VDC/**CC**

Example of devices with power bridge supply:
IM12-DI01-2S-2T-**PR**/24VDC/CC

Overview

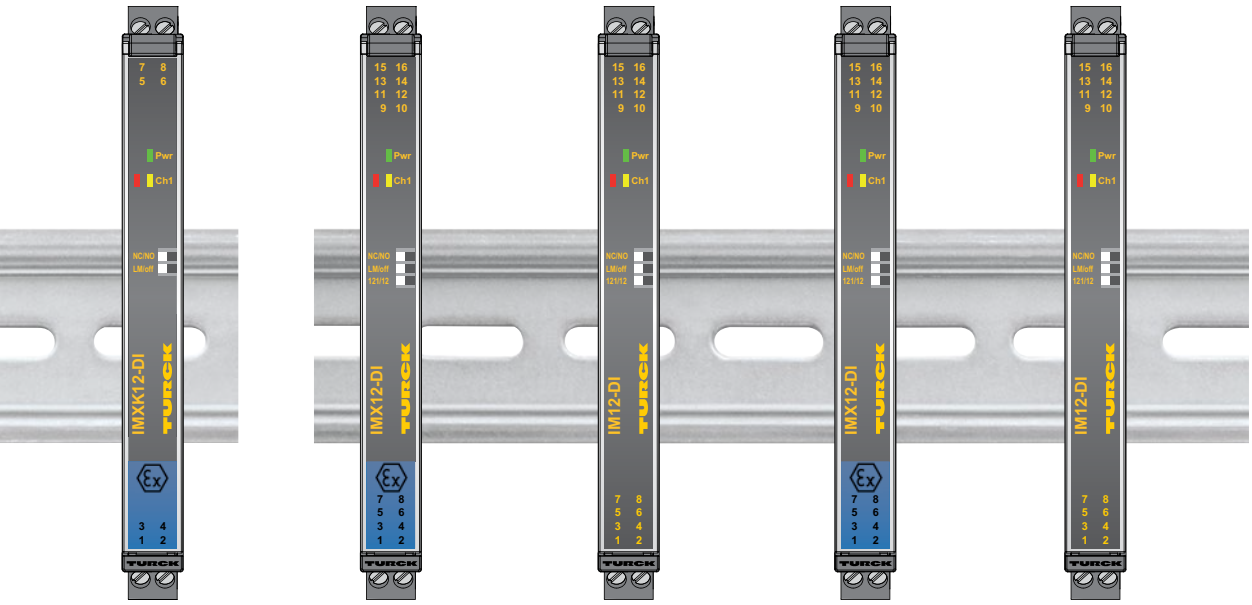
Isolating switching amplifier | Isolating switching amplifier (splitter)



Isolating switching amplifier

1-channel

Type code	IMX12-DI03-1S-1NAM1T-0/24VDC	IMXK12-DI01-1S-1T-0/24VDC	IM12-DI03-1S-1NAM1T-0/24VDC	IMX12-DI03-1S-1NAM1R-0/24VDC	IMXK12-DI01-1S-1R-0/24VDC	IM12-DI03-1S-1NAM1R-0/24VDC
	[Ex ia]	[Ex ia]		[Ex ia]	[Ex ia]	
Design		Compact			Compact	
Ident-no.	7580004	100000681	7580052	7580000	100000679	7580048
Power supply	10…30 V	10…30 V	10…30 V	10…30 V	10…30 V	10…30 V
Inputs	1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact
Outputs	1 Namur and 1 transistor	1 Namur and 1 transistor	1 Namur and 1 transistor	1 Namur and 1 relay (changeover contact)	1 Namur and 1 relay (changeover contact)	1 Namur and 1 relay (changeover contact)
Approvals	ATEX, IECEx, NEPSI, cULus, cFM, INMETRO, Kosha, TIIS, TR CU EAC,	ATEX, IECEx, cULus	ATEX Zone 2, cULus	ATEX, IECEx, NEPSI, cULus, cFM, INMETRO, Kosha, TIIS, TR CU EAC,	ATEX, IECEx, cULus	ATEX Zone 2, cULus
Functional safety	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Special features	Namur repeater, A2 can be set as alarm signal output, line monitoring	Namur repeater, line monitoring	Namur repeater, A2 can be set as alarm signal output, line monitoring	Namur repeater, A2 can be set as alarm signal output, line monitoring	Namur repeater, line monitoring	Namur repeater, A2 can be set as alarm signal output, line monitoring



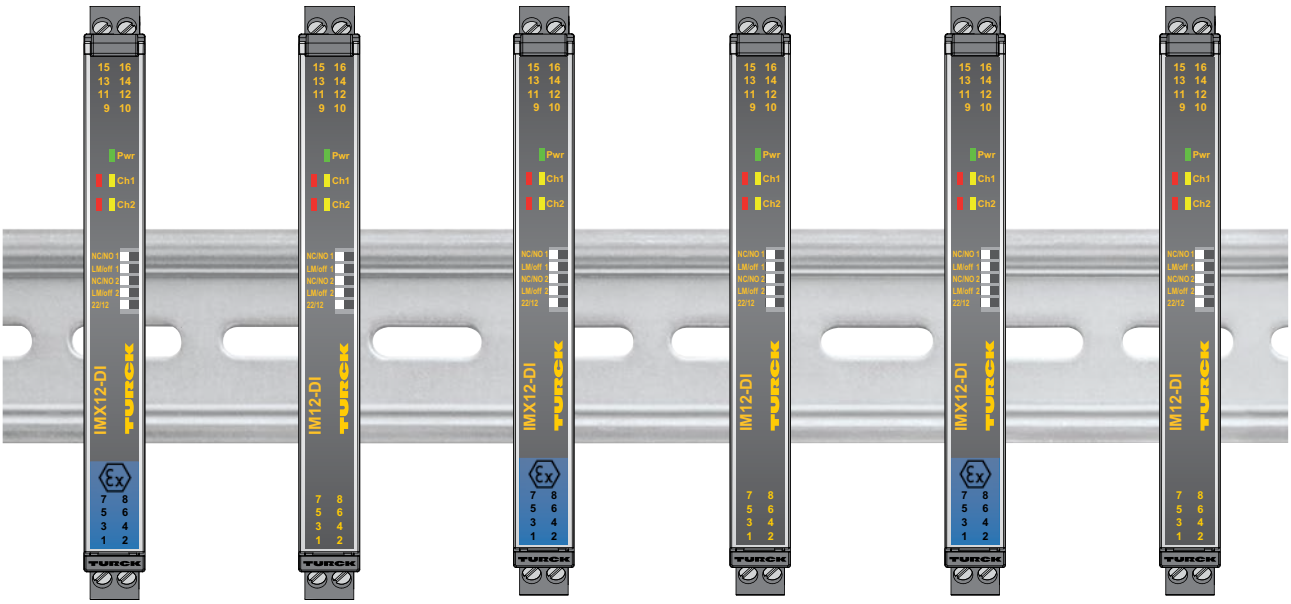
Isolating switching amplifier

Splitter

IMXK12-DI01-1S-1PP-0/24VDC	IMX12-DI03-1S-2R-S/24VDC	IM12-DI03-1S-2R-S/24VDC	IMX12-DI03-1S-2T-S/24VDC	IM12-DI03-1S-2T-S/24VDC
[Ex ia]	[Ex ia]		[Ex ia]	
Compact				
100000683	7580008	7580028	7580012	7580032
10…30 V	10…30 V	10…30 V	10…30 V	10…30 V
1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact	1 NAMUR or 1 contact
1 transistor (push-pull) voltage level	1 Namur and 2 relays (changeover contacts)	1 Namur and 2 relays (changeover contacts)	1 Namur and 2 transistors	1 Namur and 2 transistors
ATEX, IECEx, cULus	ATEX, IECEx, NEPSI, cULus, cFM, INMETRO, Kosha, TIIS, TR CU EAC,	ATEX Zone 2, cULus	ATEX, IECEx, NEPSI, cULus, cFM, INMETRO, Kosha, TIIS, TR CU EAC,	ATEX Zone 2, cULus
SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Switchable: 2-channel or signal doubling, 15 kHz, line monitoring	Signal doubling, A2 can be set as alarm signal output, line monitoring	Signal doubling, A2 can be set as alarm signal output, line monitoring	Signal doubling, A2 can be set as alarm signal output, line monitoring	Signal doubling, A2 can be set as alarm signal output, line monitoring

Overview

Isolating switching amplifier | Valve control module
HART® transparent isolating transducer



Isolating switching amplifier

2-channel

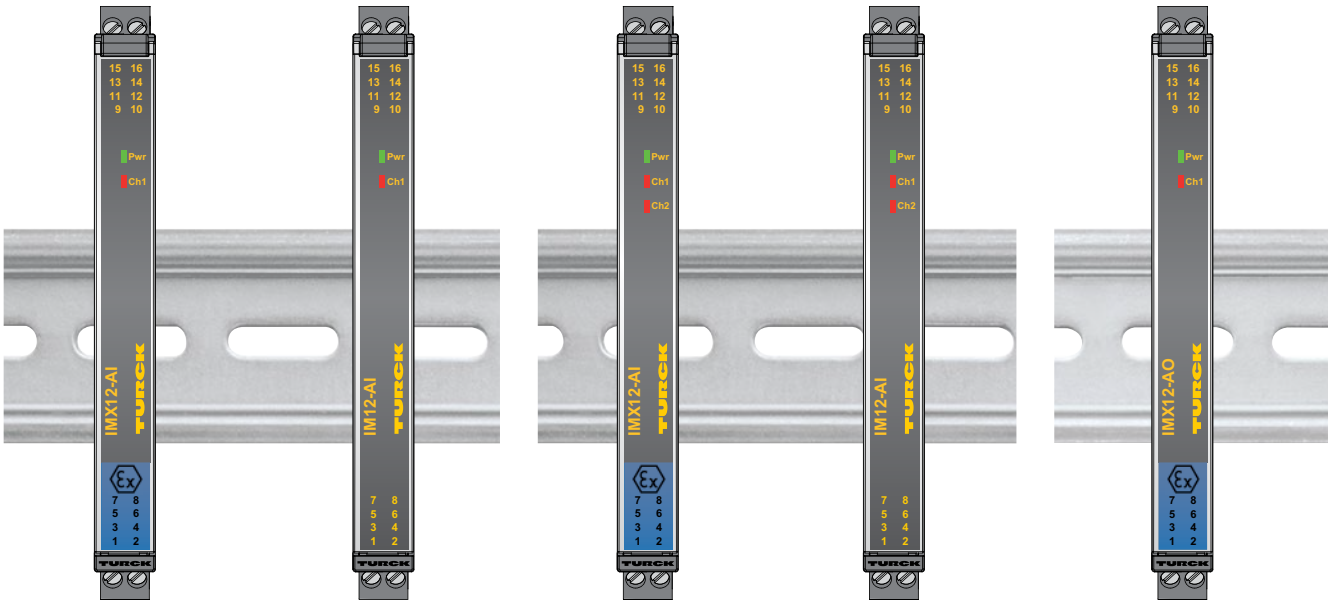
Type code	IMX12-DI01-2S-2R-0/24VDC	IM12-DI01-2S-2R-0/24VDC	IMX12-DI01-2S-2T-0/24VDC	IM12-DI01-2S-2T-0/24VDC	IMX12-DI01-2S-2PP-0/24VDC	IM12-DI01-2S-2PP-0/24VDC
	[Ex ia]		[Ex ia]		[Ex ia]	
Design						
Ident-no.	7580016	7580036	7580020	7580040	7580024	7580044
Power supply	10…30 V	10…30 V	10…30 V	10…30 V	10…30 V	10…30 V
Inputs	2 NAMUR or 2 contacts	2 NAMUR or 2 contacts	2 NAMUR or 2 contacts	2 NAMUR or 2 contacts	2 NAMUR or 2 contacts	2 NAMUR or 2 contacts
Outputs	2 relays, (change-over contacts)	2 relays, (change-over contacts)	2 transistors	2 transistors	2 transistors (push-pull) voltage level	2 transistors (push-pull) voltage level
Approvals	ATEX, IECEx, NEPSI, cULus, cFM, INMET-RO, Kosha, TIIS, TR CU EAC, DNV, GL	ATEX Zone 2, cULus	ATEX, IECEx, NEPSI, cULus, cFM, INMET-RO, Kosha, TIIS, TR CU EAC, DNV, GL	ATEX Zone 2, cULus	ATEX, IECEx, NEPSI, cULus, cFM, INMET-RO, Kosha, TIIS, TR CU EAC, DNV, GL	ATEX Zone 2, cULus
Functional safety	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Special features	Switchable: 2-channel or signal doubling, line monitoring	Switchable: 2-channel or signal doubling, line monitoring	Switchable: 2-channel or signal doubling, line monitoring	Switchable: 2-channel or signal doubling, line monitoring	Switchable: 2-channel or signal doubling, 15 kHz, line monitoring	Switchable: 2-channel or signal doubling, 15 kHz, line monitoring

Valve control module		HART® transparent isolating transducer	
1-channel	2-channel	1-channel	

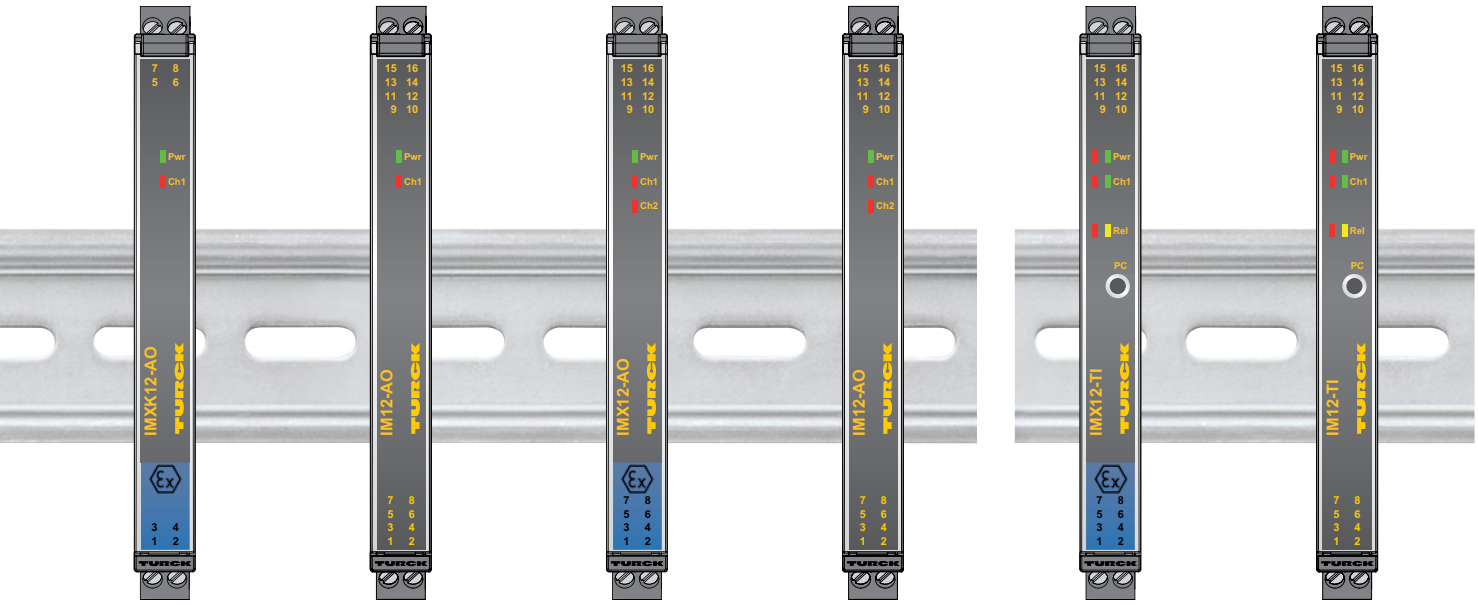
IMX12-DO01-1U-1U-0/24VDC	IMXK12-DO01-1U-1U-0/24VCD	IMX12-DO01-2U-2U-0/24VDC	IMX12-AI01-1I-1IU-H0/24VDC	IMXK12-AI01-1I-1IU-H0/24VDC	IM12-AI01-1I-1IU-H0/24VDC
[Ex ia]	[Ex ia]	[Ex ia]	[Ex ia]	[Ex ia]	
	Compact			Compact	
7580101	100000709	7580105	7580313	100000687	7580333
Direct switching	Direct switching	Direct switching	10…30 V	10…30 V	10…30 V
0 signal 0…5 VDC, 1 signal 10…30 VDC	0 signal 0…5 VDC, 1 signal 10…30 VDC	0 signal 0…5 VDC, 1 signal 10…30 VDC	Supply voltage: ≥ 17 V/20 mA, current input: 4…20 mA	Supply voltage: ≥ 17 V/20 mA, current input: 4…20 mA	Supply voltage: ≥ 17 V/20 mA, current input: 4…20 mA
24 V/56 mA	24 V/56 mA	24 V/56 mA	Output current: Source/sink (15…28 V) 4…20 mA output voltage: 1…5 V	Output current: Source/sink (15…28 V) 4…20 mA Output voltage: 1…5 V	Output current: Source/sink (15…28 V) 4…20 mA Output voltage: 1…5 V
ATEX, IECEx, cULus, cFM, INMETRO, NEPSI, Kosha, TR CU EAC, TIIS	ATEX, IECEx, cUL	ATEX, IECEx, cULus, cFM, INMETRO, NEPSI, Kosha, TR CU EAC, TIIS	ATEX, IECEx, cFM,NEP-SI, INMETRO, Kosha, TR CU EAC CMI,	ATEX, IECEx	ATEX Zone 2, cULus
SIL 2	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Line monitoring	Line monitoring	Line monitoring	HART® transmission, input and output as source or sink, 800 ohm burden, line monitoring	HART® transmission, input and output as source or sink, 800 ohm burden, line monitoring	HART® transmission, input and output as source or sink, 800 ohm burden, line monitoring

Overview

HART® transparent isolating transducer | HART® transparent output analog signal isolator
Universal temperature transducer



Type code	IMX12-AI01-1I-2IU-H0/ 24VDC	IM12-AI01-1I-2IU-H0/ 24VDC	IMX12-AI01-2I-2IU-H0/ 24VDC	IM12-AI01-2I-2IU-H0/ 24VDC	IMX12-AO01-1I-1I-H0/ 24VDC
	[Ex ia]		[Ex ia]		[Ex ia]
Design					
Ident-no.	7580301	7580321	7580305	7580325	7580401
Power supply	10…30 V	10…30 V	10…30 V	10…30 V	10…30 V
Inputs	Supply voltage: ≥ 17 V/20 mA, current input: 4...20 mA	Supply voltage: ≥ 17 V/20 mA, current input: 4...20 mA	Supply voltage: ≥ 17 V/20 mA, current input: 4...20 mA	Supply voltage: ≥ 17 V/20 mA, current input: 4...20 mA	4…20 mA
Outputs	Output current: 2 x source/sink (15…28 V) 4…20 mA Output voltage: 2 x 1…5 V	Output current: 2 x source/sink (15…28 V) 4…20 mA Output voltage: 2 x 1…5 V	Output current: 2 x source/sink (15…28 V) 4…20 mA Output voltage: 2 x 1…5 V	Output current: 2 x source/sink (15…28 V) 4…20 mA Output voltage: 2 x 1…5 V	4…20 mA
Approvals	ATEX, IECEx, cFM,NEPSI, INMETRO, Kosha, TR CU EAC CMI	ATEX Zone 2, cULus	ATEX, IECEx, cFM, cULus, NEPSI, INMETRO, Kosha, TR CU EAC CMI, TIIS,	ATEX, IECEx, cFM, cULus, NEPSI, INMETRO, Kosha, TR CU EAC CMI, TIIS,	ATEX, IECEx, cFM, cULus, NEPSI, INMETRO, Kosha, TR CU EAC CMI, TIIS,
Functional safety	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Special features	HART® transmission, signal doubling input and output as source or sink, 800 ohm burden, line monitoring	HART® transmission, signal doubling input and output as source or sink, 800 ohm burden, line monitoring	HART® transmission, input and output as source or sink, 800 ohm burden, line monitoring	HART® transmission, input and output as source or sink, 800 ohm burden, line monitoring	HART® transmission, 800 ohm burden, line monitoring



HART® transparent output analog signal isolator

1-channel | 2-channel

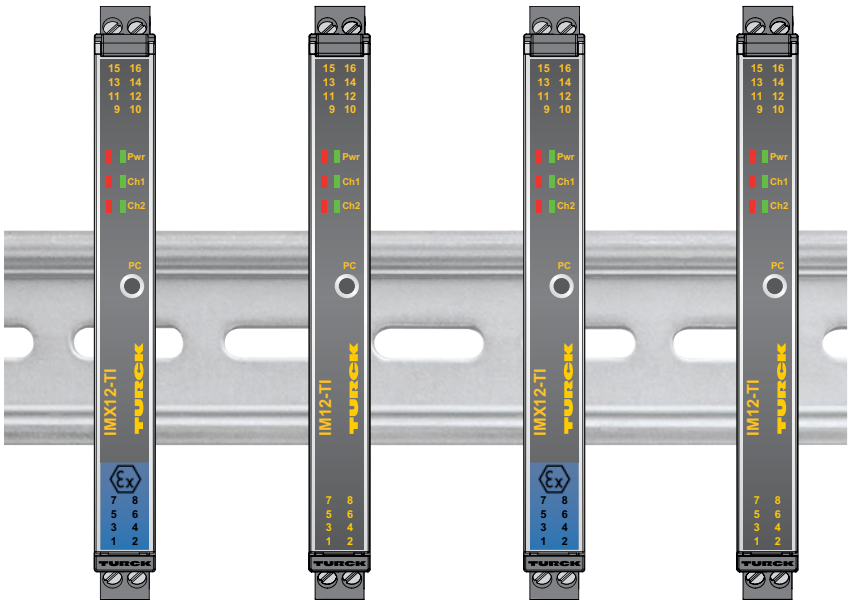
Universal temperature transducer

1-channel

IMXK12-AO01-1I-1I-H0/24VDC	IM12-AO01-1I-1I-H0/24VDC	IMX12-AO01-2I-2I-H0/24VDC	IM12-AO01-2I-2I-H0/24VDC	IMX12-TI02-1TCURT-DR-1I1R-C0/24VDC	IM12-TI02-1TCURTDR-1I1R-C0/24VDC
[Ex ia]		[Ex ia]		[Ex ia]	
Compact					
100000703	7580421	7580405	7580425	7580505	7580527
10…30 V	10…30 V	10…30 V	10…30 V	10…30 V	10…30 V
4…20 mA	4…20 mA	2 x 4…20 mA	2 x 4…20 mA	RTD (Pt, Ni), thermo-couples, mV input, resistance input	RTD (Pt, Ni), thermo-couples, mV input, resistance input
4…20 mA	4…20 mA	2 x 4…20 mA	2 x 4…20 mA	1 x relay (change-over contact) Output current: Source/sink (15…28 V) 0/4…20 mA	1 x relay (change-over contact) Output current: Source/sink (15…28 V) 0/4…20 mA
ATEX, IECEx	ATEX Zone 2, cULus	ATEX, IECEx, cFM, cU-Lus, NEPSI, INMETRO, Kosha, TR CU EAC CMI, TIIS,	ATEX Zone 2, cULus	ATEX, IECEx, cFM, cU-Lus, NEPSI, INMETRO, Kosha, TR CU EAC CMI,	ATEX Zone 2, cULus
SIL 2	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
HART® transmission, 800 ohm burden, line monitoring, compact	HART® transmission, 800 ohm burden, line monitoring	HART® transmission, 800 ohm burden, line monitoring	HART® transmission, 800 ohm burden, line monitoring	Parameter setting via PC, limit values, 4-wire technology, GOST temperature curves, multiple RTD and TC variants, cold junction: internal, external, adjustable, line monitoring	Parameter setting via PC, limit values, 4-wire technology, GOST temperature curves, multiple RTD and TC variants, cold junction: internal, external, adjustable, line monitoring

Overview

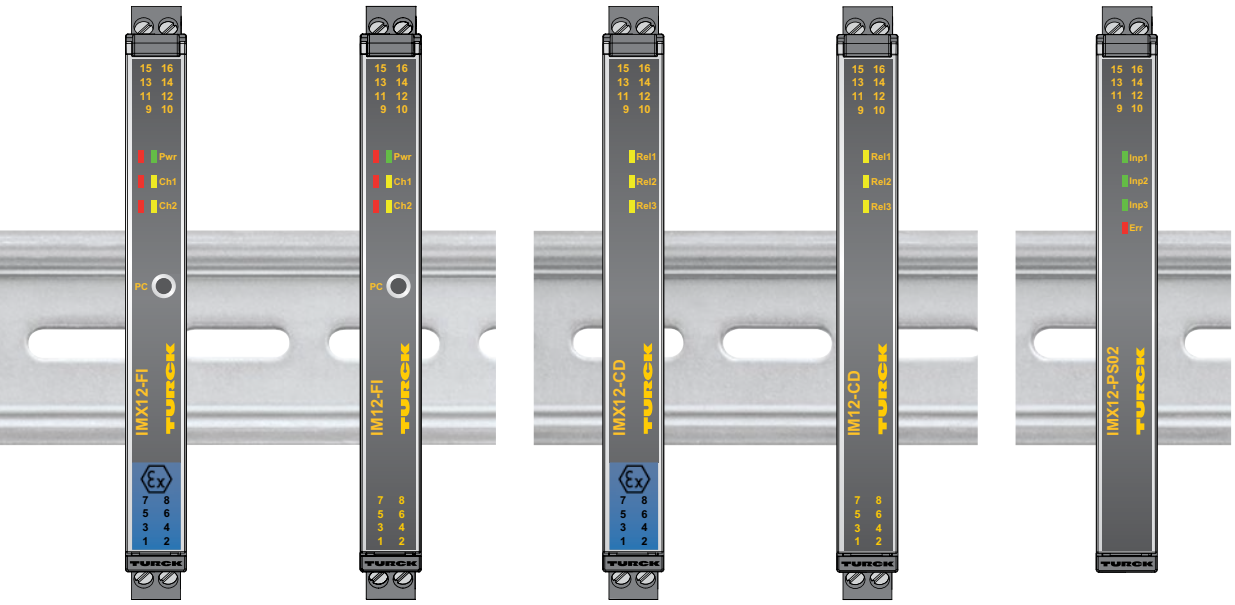
Temperature transducer | Frequency transducer | Relay coupler
Power Bridge supply module



Temperature transducer
2-channel

Frequency transducer
1-channel

Type code	IMX12-TI02-2TCURTDR-2I-C0/24VDC	IM12-TI02-2TCURTDR-2I-C0/24VDC	IMX12-TI01-2RTDR-2I-C0/24VD	IM12-TI01-2RTDR-2I-C0/24VDC	IMX12-FI01-1SF-1I1R-C0/24VDC	IM12-FI01-1SF-1I1R-C0/24VDC
	[Ex ia]		[Ex ia]		[Ex ia]	
Ident-no.	7580509	7580532	7580513	7580534	7580205	7580225
Power supply	10…30V	10…30V	10…30 V	10…30 V	10…30 V	10…30V
Inputs	2 x RTD (Pt, Ni), thermocouples, mV input, resistance input	2 x RTD (Pt, Ni), thermocouples, mV input, resistance input	2 x RTD (Pt, Ni), resistance input	2 x RTD (Pt, Ni), resistance input	2 x NAMUR or 2 contacts	2 x NAMUR or 2 contacts
Outputs	Output current: 2 x source / sink (15…28V) 0/4….20 mA	Output current: 2 x source / sink (15…28V) 0/4…20 mA	Output current: 2 x source/sink (15…28 V) 0/4…20 mA	Output current: 2 x source/sink (15…28 V) 0/4…20 mA	Output current: 2 x source/sink (15…28 V) 0/4…20 mA 1 x relay (NO contact)	Output current: 2 x source/sink (15…28 V) 0/4…20 mA
Approvals	ATEX, IECEx, cFMus, cULus, NEPSI, INMETRO, Kosha TR CU EAC CMI	ATEX Zone 2, cULus	ATEX, IECEx, cFM, cULus, NEPSI, INMETRO, Kosha, TR CU EAC CMI,	ATEX Zone 2, cULus	ATEX, IECEx, cFM, cULus, NEPSI, INMETRO, Kosha, TR CU EAC CMI, TIIS,	ATEX Zone 2, cULus
Functional safety	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2
Special features	Parameter setting via PC, GOST temperature curves, multiple RTD and TC variants, cold junction: internal, external, adjustable, line monitoring	Parameter setting via PC, GOST temperature curves, multiple RTD and TC variants, cold junction: internal, external, adjustable, line monitoring	Unique: 2-channel device with 4-wire technology, parameter setting via PC, GOST temperature curves, multiple RTD and TC variants, line monitoring	Unique: 2-channel device with 4-wire technology, parameter setting via PC, GOST temperature curves, multiple RTD and TC variants, line monitoring	Parameter setting via PC, limit values, slippage monitoring or clockwise/anti-clockwise detection, counter function, 20 kHz	Parameter setting via PC, slippage monitoring, counter function, 20 kHz



Frequency transducer
2-channel

Relay coupler

Power Bridge power supply module

IMX12-FI01-2SF-2I-C0/24VDC	IM12-FI01-2SF-2I-C0/24VDC	IMX12-CD01-2R-2U-0/L	IM12-CD01-2R-1U-0/L	IMX12-PS02-UI-UIR-PR/24VDC
[Ex ia]		[Ex ia]		
7580209	7580229	7580620	7580622	7580610
10…30V	10…30 V	10…30 V	10…30 V	11…30 VDC
2 x NAMUR or 2 contacts	2 x NAMUR or 2 contacts	3 x 0 signal 0…5 VDC, 1 signal 10…30 VDC	0 signal 0…5 VDC1 signal 10…30 VDC	
Output current: 2 x source/sink (15…28 V) 0/4…20 mA	Output current: 2 x source/sink (15…28 V) 0/4…20 mA1 x relay (NO contact)	3 x relay changeover switches	2 x relay changeover switches	Relay (collective fault signal)
ATEX, IECEx, cFM, NEPSI, cULus, INMETRO, Kosha, TR CU EAC CMI, TIIS,	ATEX Zone 2, cULus	ATEX, IECEx, NEPSI, cULus, cFM, INMETRO, Kosha, TR CU EAC,	ATEX Zone 2, cULus	ATEX, IECEx, NEPSI, cUL, cFM, INMETRO, Kosha, TR CU EAC
SIL 2	SIL 2	SIL 3	SIL 3	
Parameter setting via PC, slippage monitoring, counter function, 20 kHz	Parameter setting via PC, limit values, slippage monitoring or clockwise/anti-clockwise detection, counter function, 20 kHz		SIL2 splitter or 1-channel SIL3	Evaluation of collective fault signal (relay), 7A, power supply single or redundant with LED indication

Overview

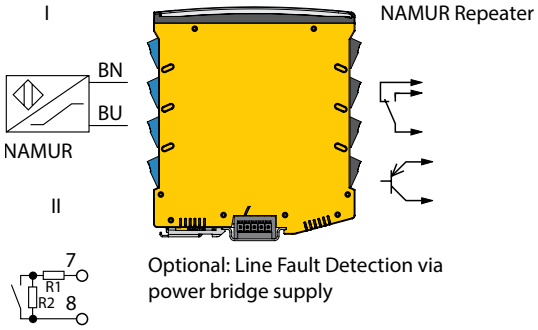
Power supply| 3-phase power supply

Power supply

Type code	IM82-24-2,5	IM82-24-5,0	IM82-24-10
Power supply	85…264 VAC, 90…375 VDC	90…132 VAC, 186…264 VAC, 210…370 VDC	90…132 VAC, 186…264 VAC, 210…370 VDC
Outputs	24 V/2.5 A	24 V/5 A	24 V/10 A
Approvals		UL	UL
Special features		Class 1 Div 2 SEMI F47	Class 1 Div 2 SEMI F47

IM82-24-20
90…264 VAC, 120…370 VDC
24 V/20 A
UL
Class 1 Div 2 SEMI F47

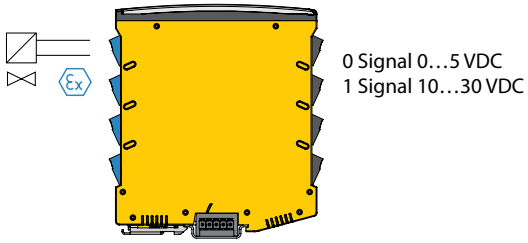
Device overview



Optional: Line Fault Detection via power bridge supply

Isolating switching amplifier

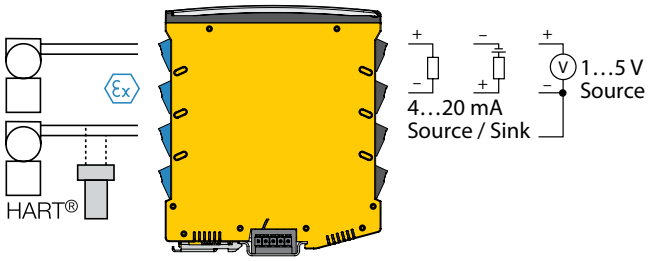
Sensors according to EN 60947-5-6 (NAMUR) or potential-free contacts can be connected to the isolating switching amplifier. The output side is designed for use either as a Namur repeater, relay, transistor or push-pull transistor circuit. The device meets the requirements of NE21.



Optional: Line Fault Detection via power bridge supply

Valve control module

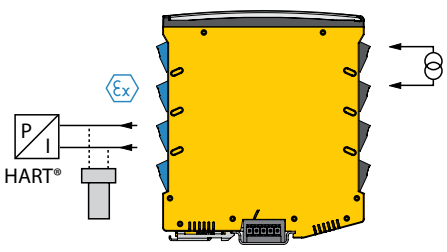
The valve control module type provides an intrinsically safe output signal with a limited voltage and current. This enables them to be used directly for supplying loads in the Ex area. Typical applications include the actuation of Ex i pilot valves, the supply of indicators and transmitters.



Optional: Line Fault Detection via power bridge supply

HART® transparent isolating transducer

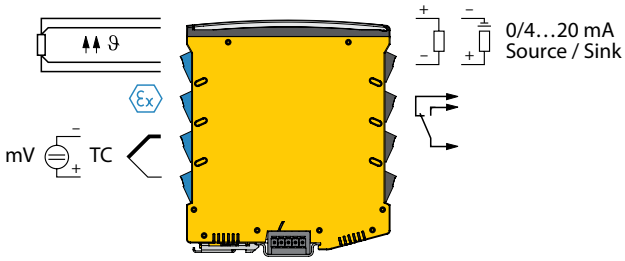
The HART® transparent isolating transducers are used to operate intrinsically safe 2-wire HART® transducers in the Ex area and to transmit the measurement signals to the non-Ex area. In addition to the analog signals, digital HART® communication signals can also be transferred bidirectionally. It is also possible to operate passive 2-wire HART® transmitters.



Optional: Line Fault Detection via power bridge supply

HART® transparent output analog signal isolator

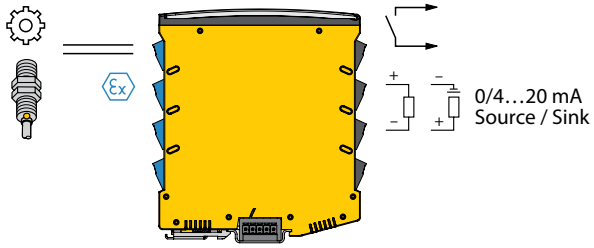
The signal isolator transfers the 1:1 galvanically isolated standard current signal from the non-Ex area to the Ex area. Besides the analog signal, digital HART® communication signals can also be transferred bidirectionally. Typical applications are for example, the control of I/P converters or indicators in the Ex area.



Optional: Line Fault Detection via power bridge supply

Temperature transducer

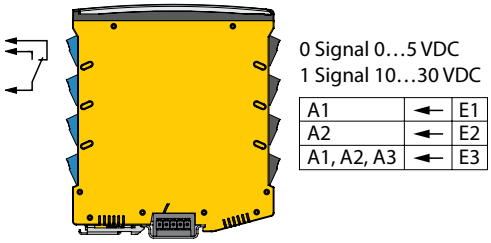
The temperature transducers are provided with inputs for thermocouples in accordance with IEC 60584, DIN 43710, GOST R 8.585-2001, extra low voltages (-150...+150 mV), RTDs in accordance with IEC 60751, DIN 43760, GOST 6651-94 (2-, 3-wire) as well as 0...5 kΩ resistors (2-, 3-wire). The devices can be programmed via the PC with PACTware™.



Optional: Line Fault Detection via power bridge supply

Frequency transducer

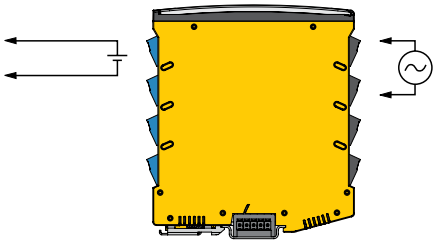
The frequency transducer/pulse counter is provided with intrinsically safe input circuits and transfers intrinsically safe frequency signals up to 20000 Hz from the explosion hazardous area to the safe area. Limit values, slippage, clockwise/anticlockwise rotation can also be monitored. The devices are suitable for operation in Zone 2 and can be programmed with PACTware™ via the PC.



Optional: Line Fault Detection via power bridge supply

Relay coupler

The relay coupler switches intrinsically safe or current limited circuits on the field side and ensures the safe galvanic isolation between input and output circuits (relay). Possible applications include for example remote resets, the fire alarm test or the remote calibration of strain gauges. The device is suitable for operation in Zone 2. This makes it suitable for safety-related applications up to and including SIL3 (high and low demand according to IEC 61508).



Line Fault Detection via power bridge supply

Power supply module

The power supply module supplies the voltage to the IMX12 and IM12 series modules via the Power Bridge and transfers the collective fault signal of the connected devices via the relay output. Faults are indicated by LED and an output relay. The power supply can be fed both singly and also redundantly via two power supply units.

Accessories

Software

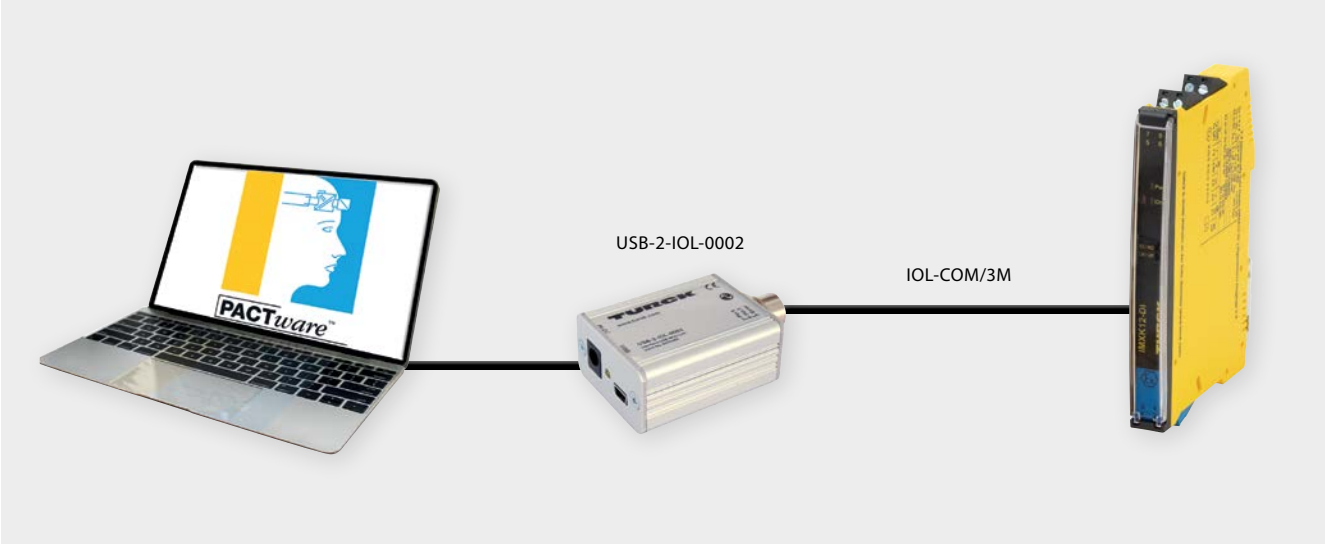
Designation	Description
IODD	Configuration file for PC configurable devices such as IMX12-TI temperature transducers and IMX12-FI frequency transducers. Download via Turck Software Manager or from www.turck.com
PACTware™	Download via Turck Software Manager or from www.turck.com

Hardware

Figure	Ident-no.	Type code	Description
	6825482	USB-2-IOL-0002	IO-Link master programming adapter
	7525110	IOL-COM/3M	Programming cable
	100003646	IMX12-2-CJT	Terminals for external measurement of cold junction temperature
	7580940	IMX12-SC-2X-4BK	Spare screw terminals (black)
	7580941	IMX12-SC-2X-4BU	Spare screw terminals (blue)
	7580942	IMX12-CC-2X-4BK	Spare spring type terminals (black)
	7580943	IMX12-CC-2X-4BU	Spare spring type terminals (blue)

Parameterization

Easy connection via USB and parameter assignment via PACTware



The IM(X)12-FI frequency transducer and IM(X)12-TI temperature transducer are parameterized easily with PACTware.

With temperature transducers:

- Selection of the measuring method: RTD or TC
- Selection of the cold junction
- Selection of sensor types
- Connection type: 2-, 3-, 4-wire technology
- Limit values and window functions
- Diagnostics

With frequency transducers:

- Selection of the measuring method: Measure frequency or count pulses
- Slippage monitoring
- Monitoring of running direction
- Limit values and window functions
- Diagnostics

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