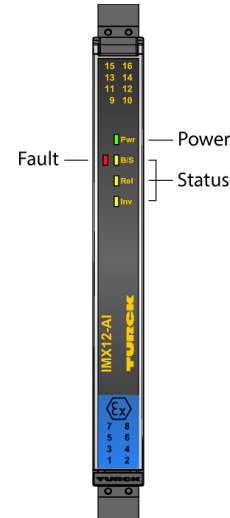
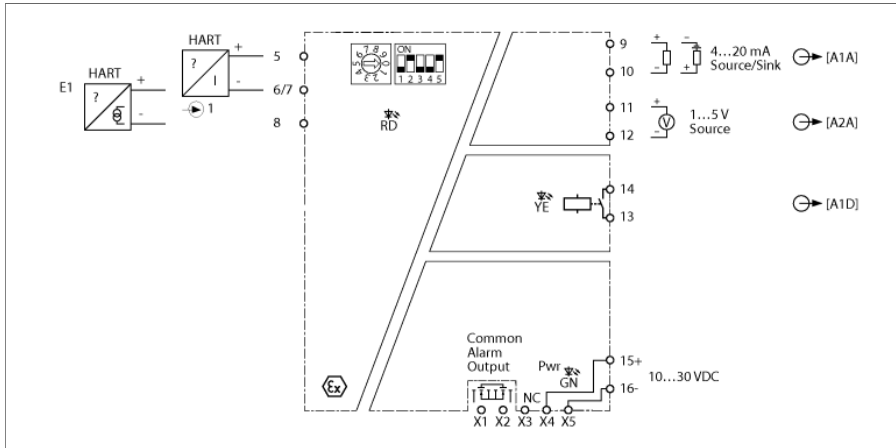


# Isolating transducer 1-channel IMX12-AI01-1I-1IU1R-HPR/24VDC/CC



The IMX12-AI01-1I-1IU1R-H... isolating transducers are equipped with intrinsically safe input circuits and transfer analog measured signals from the Ex area to the non-Ex area. In addition, the devices monitor the input signals for exceeding or falling below an adjustable limit value. The devices are suitable for operation in Zone 2. Intrinsically safe (passive) 2-wire transducers, as well as active and passive HART transmitters, can be used on the devices in Ex areas.

The IMX12-AI01-1I-1IU1R-HPR/24VDC/CC isolating transducer is equipped with input circuits of 4...20 mA and output circuits of 4...20 mA (either as source or sink) and 1...5 V (source). Input signals are transmitted in the 3.8 mA...20.5 mA range 1:1 from the Ex area to the non-Ex area at output [A1A] without impairment. Alternatively, the input current signal is provided proportionally as a normalized voltage in the 1 V...5 V range (source) at output [A2A]. In addition, digital signals can also be transmitted bidirectionally in accordance with the HART protocol.

The input circuit is monitored for wire breaks and short circuits. Via the Power-Bridge connection, the device can be supplied and a group fault signal can be transmitted.

The devices are configured via DIP and rotary coding switches on the device side. The analog output to be used (current output A1A or voltage output A2A) as well as the switching point (5...20 mA in 1-mA increments), the effective direction (NC/NO) and the switching behavior of the relay output (A1D) when exceeding/falling below the set switching point are adjustable.

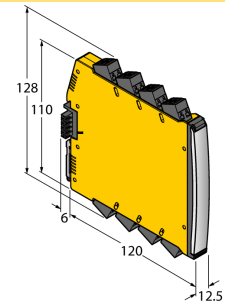
The devices have a green power LED (Pwr). Two red status LEDs are provided to indicate wire breaks and short circuits, respectively, in the input circuit. A fault in the input circuit causes the red LED to flash according to NE44. Two yellow status LEDs indicate the switching status and the set effective direction of the relay output. In the event of a wire break (< 3.5 mA) or short circuit (> 22 mA) in the input circuit, a current value of < 3.5 mA or a voltage value of < 0.875 V is output at the analog output.

The device can be used in safety circuits up to SIL 2 (high and low demand according to IEC 61508) (hardware fault tolerance HFT = 0).

The device is equipped with removable spring-type terminals.

- Current input 0/4...20 mA
- Current output 0/4...20 mA (source or sink)
- Voltage output 1 V...5 V (source)
- Relay output (invertable) for monitoring an adjustable limit value
- Configuration via rotary coding switches and DIP switches
- Wire-break monitoring of input circuit
- Full galvanic isolation
- Reverse-polarity-protected input
- HART transparent
- Removable spring-type terminals
- Power-Bridge (male connector incl. in delivery)
- ATEX, IECEx
- Use in Zone 2
- SIL 2

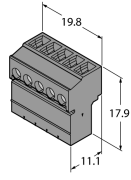
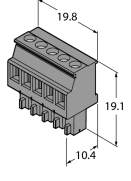
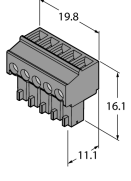
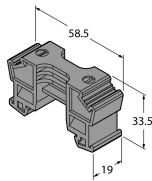
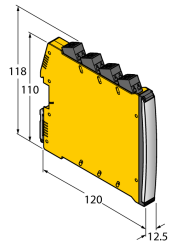
## Dimensions



Type	IMX12-AI01-11-1IU1R-HPR/24VDC/CC
ID	7580310
Nominal voltage	24 VDC
Operating voltage	10...30 VDC
Power consumption	≤ 4 W
Power dissipation, typical	≤ 1.5 W
<b>Transmitter connection</b>	
Supply voltage	≥ 17 V / 20 mA
Input current	4...20 mA
<b>Output circuits</b>	
Output current	Source/sink 4...20 (sink: 15...28 V) mA
Output voltage	1...5 V
Load resistance current output	≤ 0.8 kΩ
Output circuits (digital)	1 x relay (NO)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Power-Bridge common alarm output	MOSFET, U <sub>max</sub> = 30 V, I <sub>max</sub> = 100 mA
<b>Response characteristic</b>	
Rise time (10...90 %)	≤ 5 ms
Fall time (90...10 %)	≤ 5 ms
Measuring accuracy (including linearity, hysteresis and repeatability)	≤ 0.05 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.002 % of full scale/K
<b>Galvanic isolation</b>	
Test voltage	2.5 kV RMS
Input 1 to output 1	375 V peak value acc. to EN 60079-11
Input 1 to supply	375 V peak value acc. to EN 60079-11
Output 1 to supply	50 V RMS acc. to EN 50178 and EN 61010-1
Important note	For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.
Application area	II (1) G, II (1) D
Ignition protection category	[Ex ia Ga] IIC; [Ex ia Da] IIIC
Application area	II 3 (1) G
Ignition protection type	Ex ec [ia Ga] IIC T4 Gc
Important note	If the device is used in applications to achieve functional safety according to IEC 61508, the safety manual must be used. Information in the data sheet are not valid for functional safety.
Use in SIL safety circuits	SIL 2 acc. to IEC 61508
<b>Displays/Operating elements</b>	
Operational readiness	Green
Switching state	Yellow
Error indication	red

Mechanical data																																																																															
Protection class	IP20																																																																														
Flammability class acc. to UL 94	V-0																																																																														
Ambient temperature	-25...+70 °C																																																																														
Storage temperature	-40...+80 °C																																																																														
Dimensions	120 x 12.5 x 128 mm																																																																														
Weight	1 g																																																																														
Mounting instructions	DIN rail (NS35)																																																																														
Housing material	Polycarbonate/ABS																																																																														
Electrical connection	Removable spring-type terminals, 2-pin																																																																														
Connection variant	Power bridge with collective fault signal																																																																														
Terminal cross-section	0.2...2.5 mm <sup>2</sup> (AWG: 24...14)																																																																														
Environmental conditions	<table border="1"> <tbody> <tr> <td>Operating height</td> <td>Up to 2000 m above sea level</td> </tr> <tr> <td>Pollution degree</td> <td>II</td> </tr> <tr> <td>Surge/Overvoltage category</td> <td>II (EN 61010-1)</td> </tr> <tr> <td>Standards used</td> <td></td> </tr> <tr> <td>Voltage resistance and insulation</td> <td></td> </tr> <tr> <td></td> <td>EN 50178</td> </tr> <tr> <td></td> <td>EN 61010-1</td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td>Shock</td> <td></td> </tr> <tr> <td></td> <td>EN 61373 class B</td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td></td> <td>EN 60068-2-6</td> </tr> <tr> <td></td> <td>EN 60068-2-27</td> </tr> <tr> <td>Temperature</td> <td></td> </tr> <tr> <td></td> <td>EN 60068-2-1 Ad</td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td></td> <td>EN 60068-2-2 Bd</td> </tr> <tr> <td></td> <td>EN 60068-2-1</td> </tr> <tr> <td>Air humidity</td> <td></td> </tr> <tr> <td></td> <td>EN 60068-2-38</td> </tr> <tr> <td>EMC</td> <td></td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>NE21</td> </tr> <tr> <td></td> <td>EN 61326-1</td> </tr> <tr> <td></td> <td>EN 61326-3-1</td> </tr> <tr> <td></td> <td>EN 61000-4-2</td> </tr> <tr> <td></td> <td>EN 61000-4-3</td> </tr> <tr> <td></td> <td>EN 61000-4-4</td> </tr> <tr> <td></td> <td>EN 61000-4-5</td> </tr> <tr> <td></td> <td>EN 61000-4-6</td> </tr> <tr> <td></td> <td>EN 61000-4-11</td> </tr> <tr> <td></td> <td>EN 61000-4-29</td> </tr> <tr> <td></td> <td>EN 55011</td> </tr> <tr> <td></td> <td>EN 55016</td> </tr> <tr> <td></td> <td>EN 50121-3-2</td> </tr> <tr> <td></td> <td>EN 61000-6-2</td> </tr> </tbody> </table>	Operating height	Up to 2000 m above sea level	Pollution degree	II	Surge/Overvoltage category	II (EN 61010-1)	Standards used		Voltage resistance and insulation			EN 50178		EN 61010-1		EN 50155		GL VI-7-2	Shock			EN 61373 class B		EN 50155		GL VI-7-2		EN 60068-2-6		EN 60068-2-27	Temperature			EN 60068-2-1 Ad		EN 50155		GL VI-7-2		EN 60068-2-2 Bd		EN 60068-2-1	Air humidity			EN 60068-2-38	EMC			EN 50155		NE21		EN 61326-1		EN 61326-3-1		EN 61000-4-2		EN 61000-4-3		EN 61000-4-4		EN 61000-4-5		EN 61000-4-6		EN 61000-4-11		EN 61000-4-29		EN 55011		EN 55016		EN 50121-3-2		EN 61000-6-2
Operating height	Up to 2000 m above sea level																																																																														
Pollution degree	II																																																																														
Surge/Overvoltage category	II (EN 61010-1)																																																																														
Standards used																																																																															
Voltage resistance and insulation																																																																															
	EN 50178																																																																														
	EN 61010-1																																																																														
	EN 50155																																																																														
	GL VI-7-2																																																																														
Shock																																																																															
	EN 61373 class B																																																																														
	EN 50155																																																																														
	GL VI-7-2																																																																														
	EN 60068-2-6																																																																														
	EN 60068-2-27																																																																														
Temperature																																																																															
	EN 60068-2-1 Ad																																																																														
	EN 50155																																																																														
	GL VI-7-2																																																																														
	EN 60068-2-2 Bd																																																																														
	EN 60068-2-1																																																																														
Air humidity																																																																															
	EN 60068-2-38																																																																														
EMC																																																																															
	EN 50155																																																																														
	NE21																																																																														
	EN 61326-1																																																																														
	EN 61326-3-1																																																																														
	EN 61000-4-2																																																																														
	EN 61000-4-3																																																																														
	EN 61000-4-4																																																																														
	EN 61000-4-5																																																																														
	EN 61000-4-6																																																																														
	EN 61000-4-11																																																																														
	EN 61000-4-29																																																																														
	EN 55011																																																																														
	EN 55016																																																																														
	EN 50121-3-2																																																																														
	EN 61000-6-2																																																																														

## Accessories

Type code	Ident no.		Dimension drawing
IMC 1.5/ 5-ST-3.81 BK	7580954	Power Bridge Connection Terminal	
MCVR 1.5/ 5-ST-3.81 BK	7580955	Power Bridge Connection Terminal	
MC 1.5/ 5-ST-3.81 BK	7580956	Power Bridge Connection Terminal	
E/ME TBUS NS35 BK	7580957	Power Bridge Connection Terminal	
IMX12-PS02-UI-UIR-PR/24VDC/CC	7580611	Power supply module power bridge; Collective fault signal via relay; Single and redundant power supply via terminals; Removable screw terminals	
IMX12-SC-2X-4BK	7580940	Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin black terminals	
IMX12-SC-2X-4BU	7580941	Screw terminals for IM(X) 12 modules; included in delivery: 4 pcs. of 2-pin blue terminals	
IMX12-CC-2X-4BK	7580942	Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. black terminals, 2-pin	
IMX12-CC-2X-4BU	7580943	Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. blue terminals, 2-pin	