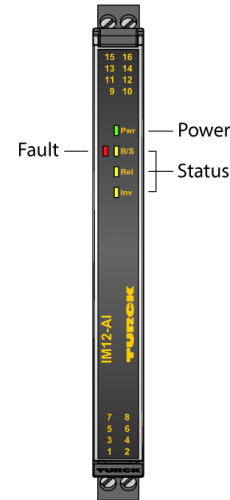
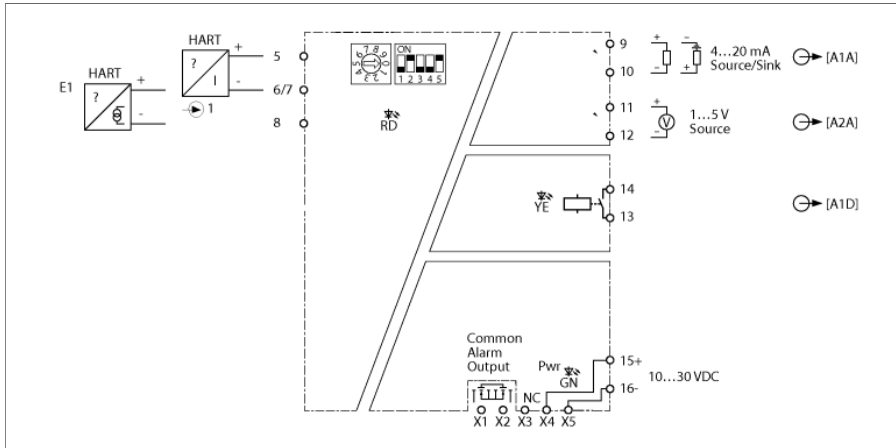


# Isolating transducer 1-channel IM12-AI01-1I-1IU1R-HPR/24VDC



The IM12-AI01-1I-1IU1R-H... isolating transducers transmit the analog measured signal in a galvanically isolated manner. 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. Passive 2-wire transducers, as well as active and passive HART transmitters, can be used on the devices.

The IM12-AI01-1I-1IU1R-HPR/24VDC 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 to the 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.

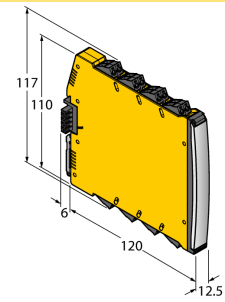
The devices have a green power LED (Pwr). Two red status LEDs are provided to indicate wire breaks and short circuits, respectively, in the input circuit. A fault in the input circuit causes the red LED to flash according to NE44. Two yellow status LEDs indicate the switching status and the set effective 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) and meets the requirements of NE21.

The device is equipped with removable screw terminals.

- Isolating transducer
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable screw terminals
- Power-Bridge (male connector incl. in delivery)
- Use in Zone 2
- SIL 2

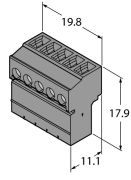
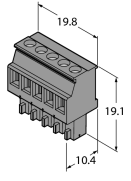
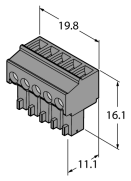
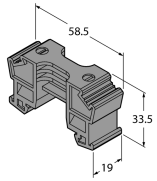
## Dimensions



Type	IM12-AI01-11-1IU1R-HPR/24VDC
ID	7580328
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
Short-circuit	Output < 3.5 mA, if in the input circuit a current > 22 mA flows
Wire break	Output < 3.5 mA, if in the input circuit a current < 3.5 mA flows
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
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
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.
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 117 mm		
Weight	1 g		
Mounting instructions	DIN rail (NS35)		
Housing material	Polycarbonate/ABS		
Electrical connection	Removable screw 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)		
Tightening torque	0.5 Nm		
Tightening torque	4.43 LBS-Inch		
Environmental conditions	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-SC-2X-4BK	7580940	Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin black terminals	
IMX12-CC-2X-4BK	7580942	Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. black terminals, 2-pin	