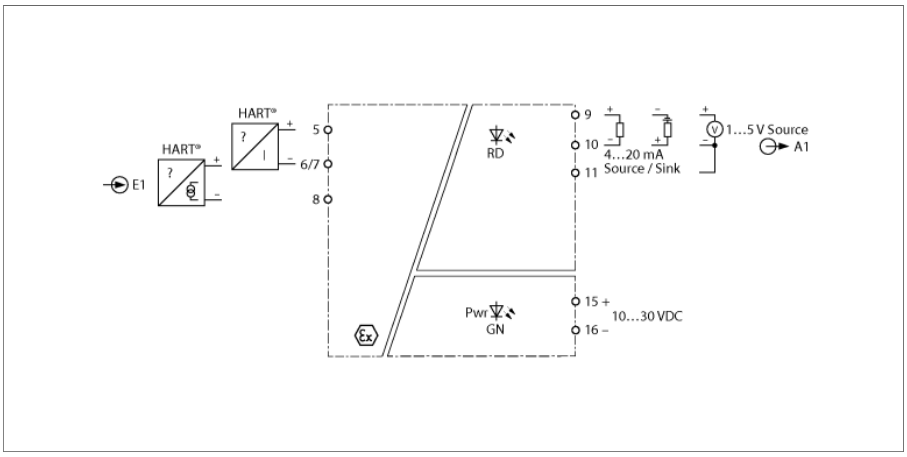
Isolating transducer
1-channel
IMX12-AI01-1I-1IU-H0/24VDC/CC





The 1-channel IMX12-AI01-1I-1IU-H0/24VDC/CC HART® isolating transducer is designed to operate intrinsically safe HART® 2-wire transducers in the Ex area and to transmit the measured signals to the non-Ex area. In addition to the analog signals, digital HART® communication signals can also be transmitted bidirectionally. Furthermore, active and passive 2-wire HART® transmitters can be operated.

The device is equipped with an input circuit of 4…20 mA and an output circuit of 4…20 mA (either as source or sink) or 1…5 V (source). The input signal is transmitted 1:1 without interference in the range of 3.8…20.5 mA and made available at the output in the non-Ex area. Wire break (< 3.5 mA) and short circuit (> 22 mA) in the transducer circuit are output as current < 3.5 mA/voltage < 0.875 V.

A green LED indicates operational readiness. An error in the input circuit causes the red LED to flash according to NE44.

The device can be used in safety circuits up to SIL2 (high and low demand according to IEC 61508) and meets the requirements of NE21. It is equipped with removable spring type terminals.

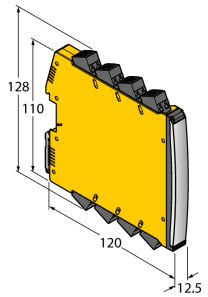
The device is equipped with removable spring-type terminals.

- Input circuits monitored for wire break and short circuit
- Complete galvanic isolation
- HART transparent
- Removable spring type terminals
- ATEX, IECEx, cFM, NEPSI, INMETRO, Kosha, TS
- Use in Zone 2
- SIL 2

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ID	7580315
Nominal voltage	24 VDC
Operating voltage U_B	10…30 VDC
Power consumption	≤ 3.8 W
Power dissipation, typical	≤ 1.4 W
Transmitter connection	
Supply voltage	17 V/20 mA typ.
Input current	4…20 mA
Temperature drift supply voltage	≤ 0.03 %/K
Reference temperature	23 °C
Output circuits	
Output current	Source/sink 4…20 mA (sink: 15…28 V)
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
Response characteristic	
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
Galvanic isolation	
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	The values provided below indicate the relevant markings associated with the product's Ex certificates.
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
Displays/Operating elements	
Operational readiness	Green
Error indication	red

Dimensions



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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	155 g	
Mounting instructions	DIN rail (NS35)	
Housing material	Plastic, Polycarbonate/ABS	
Electrical connection	Removable spring-type terminals, 2-pin	
Terminal cross-section	0.2…2.5 mm² (AWG: 24…14)	
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

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Accessories

Type code	Ident-No.		Dimension drawing
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	

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