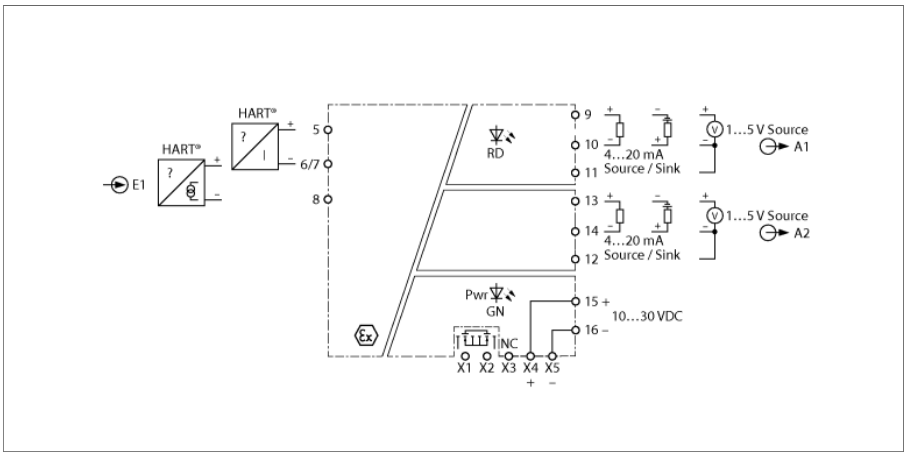
Isolating transducer
1-channel
IMX12-AI01-1I-2IU-HPR/24VDC



The 1-channel IMX12-AI01-1I-2IU-HPR/24VDC HART® isolating transducer with splitter function is designed to operate intrinsically safe HART® 2-wire transducers in the Ex zone and to transmit the measured signals to the non-Ex zone. In addition to the analog signals, the device also transmits the digital HART® communication signals bidirectionally. The HART® signals are only transmitted to output [A1]. Furthermore, active and passive 2-wire HART® transmitters can be operated. Connection is via removable screw terminals. The device can be powered from a power bridge that also transmits a collective fault signal.

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 signals are transmitted 1:1 without interference in the range of 3.8…20.5 mA and made available at the outputs 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 or voltage < 0.875 V. The device can be powered from a power bridge that also transmits a collective fault signal.

A green LED indicates operational readiness. An error in the input circuit leads to a flashing red LED 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 the NE21.

The device is equipped with removable screw terminals.

- Splitter function
- Input circuits monitored for wire break and short circuit
- Complete galvanic isolation
- HART transparent
- Removable screw terminals
- Power bridge (connector incl. in delivery)
- ATEX, IECEx, cFM, NEPSI, INMETRO, Kosha, TS
- Use in Zone 2
- SIL 2

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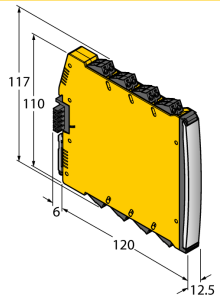
Type	IMX12-AI01-1I-2IU-HPR/24VDC
ID	7580300
Nominal voltage	24 VDC
Operating voltage	10…30 VDC
Power consumption	≤ 3.8 W
Power dissipation, typical	≤ 1.9 W
Transmitter connection	
Supply voltage	≥ 17 V / 20 mA
Input current	4…20 mA
Temperature drift supply voltage	≤ 0.03 %/K
Reference temperature	23 °C
Output circuits	
Output current	2 × source/sink (15…28 V) 4…20 mA
Output voltage	2 x 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
Input 2 to supply	375 V peak value according to EN 60079-11
Output 1 to supply	50 V RMS acc. to EN 50178 and EN 61010-1
Output 2 to supply	50 V RMS acc. to EN 50178 and EN 61010-1
Output 1 to output 2	50 V RMS according 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
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 117 mm
Weight	175 g
Mounting instructions	DIN rail (NS35)
Housing material	Polycarbonate/ABS
Electrical connection	Removable screw terminals, 2-pin
Terminal cross-section	0.2…2.5 mm² (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

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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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