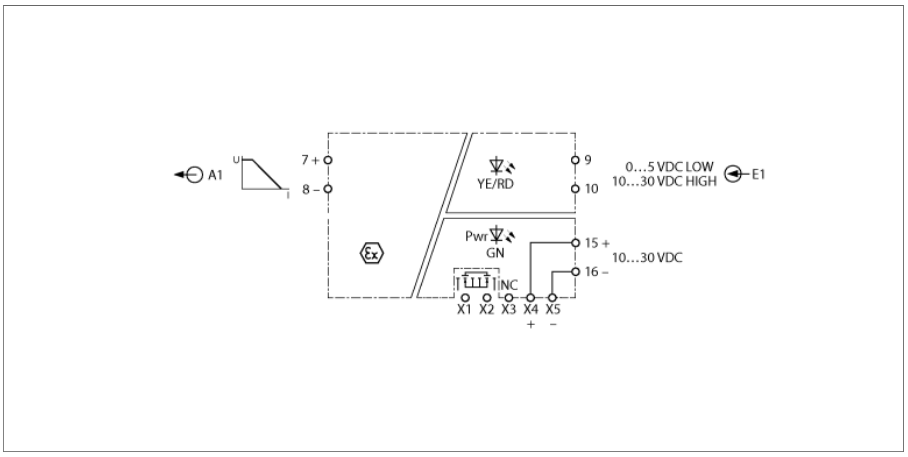
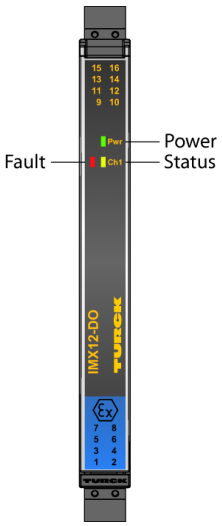
Solenoid Driver
1-channel
IMX12-DO01-1U-1U-PR/24VDC/CC





The 1-channel IMX12-DO01-1U-1U-PR/24VDC/CC solenoid driver provides an intrinsically safe output signal limited in current and voltage. Loads in the Ex area can thus be supplied directly. Typical applications are the control of Ex i pilot valves and the powering of displays and transmitters. The device can be powered from a power bridge that also transmits a collective fault signal.

The device is ready for operation when power is applied. The green LED indicates operational readiness. A yellow LED indicates the switching state of the associated output.

The device can detect a wire break or short circuit when a "high" is present at the input. The input then switches to high impedance and the common alarm output becomes conducting. An error in the output 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.

- Output circuits monitored for wire-break and short-circuit
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable spring type terminals
- Power bridge (connector incl. in delivery)
- ATEX, IECEx, cUL, cFM, INMETRO, NEPSI, Kosha, TIIS
- Use in Zone 2
- SIL 2

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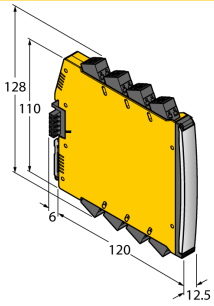
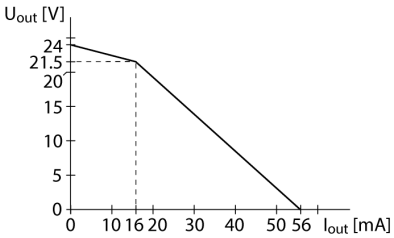
Dimensions



ID	7580102
Nominal voltage	24 VDC
Operating voltage U_B	10…30 VDC
Power consumption	≤ 1.8 W
Power dissipation, typical	≤ 0.75 W
0-signal	0…5 VDC
1-signal	10…30 VDC
Input delay	≤ 20 ms
Short-circuit	Output at load resistance < 30 Ω , the input will be > 100 kΩ
Wire break	Output at > 20 kΩ load resistance, the input will be > 100 kΩ.
Output curve	
Power-Bridge common alarm output	MOSFET, Umax = 30 V, Imax = 100 mA
Response characteristic	
Limit frequency	≤ 50 Hz
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	300 V RMS according to EN 50178 and EN 61010-1
Output 1 to supply	375 V peak value acc. to EN 60079-11
Important note	The values provided below indicate the relevant markings associated with the product's Ex certificates.
Ex approval acc. to conformity certificate	TÜV 14 ATEX 149780X
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 nA [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
Switching state	Yellow
Error indication	red

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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	147 g
Mounting instructions	DIN rail (NS35)
Housing material	Plastic, 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 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
		GL VI-7-2
		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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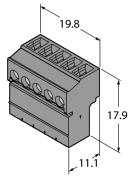
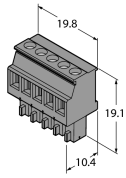
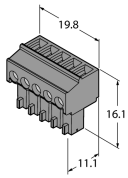
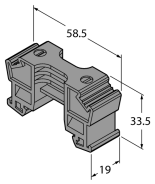
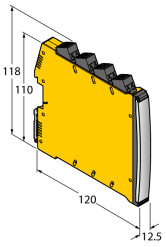
Accessories

Type code	Ident-No.		Dimension drawing
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	

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