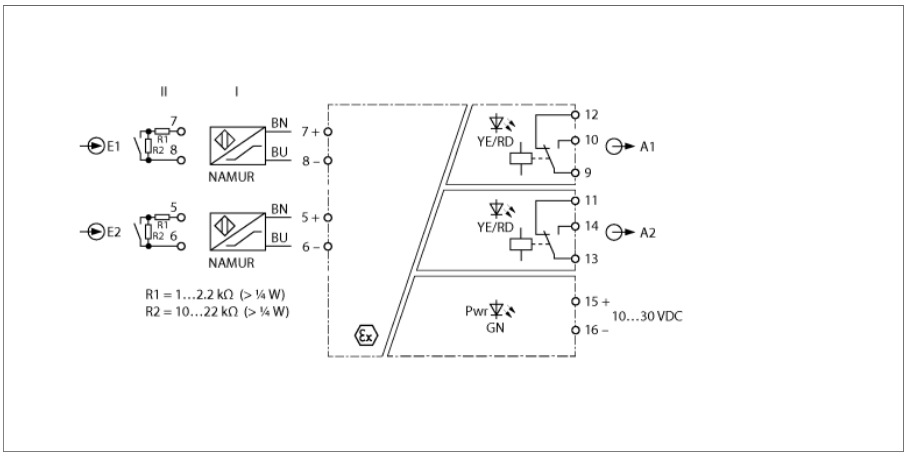
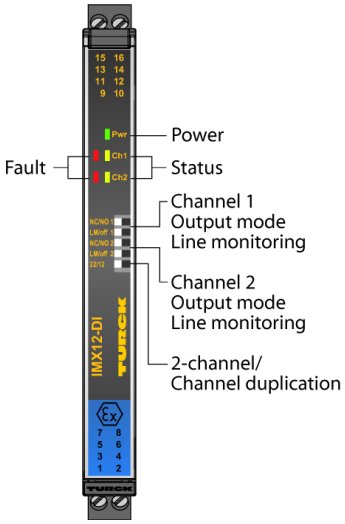
Isolating switching amplifier 2-channel IMX12-DI01-2S-2R-0/24VDC





Sensors or potential-free contacts can be connected to the IMX12-DI01-2S-2R-0/24VDC isolating switching amplifier in accordance with EN 60947-5-6 (NAMUR) . The device is equipped with intrinsically safe input circuits and can be installed in zone 2. A DIP switch on the device allows to toggle between 2-channel or 1-channel operating mode with signal doubling. The output circuits are equipped with two changeover relays. The device complies with the requirements of the NE21.

The devices feature DIP switches on the front. This allows to select between the output mode, the input circuit monitoring, as well as toggle between signal duplication and 1-channel operation. When using mechanical contacts, either line monitoring must be switched off or the contact must be wired with resistors (see wiring diagram).

The Pwr LED lights green to indicate operational readiness. An error in the input circuit leads to a flashing red LED according to NE44. Thereupon the relay of the belonging output circuit drops out.

The device can be used in safety circuits up to SIL2 (high and low demand according to IEC 61508).

The device is equipped with removable screw terminals.

- 2 relay outputs (complementary contact)
- Switchable: 2-channel or signal doubling
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wire-break/ short-circuit (ON/OFF switchable)
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable screw terminals
- ATEX, IECEx, NEPSI, cUL, cFM, INMETRO, Kosha, TIIS, DNV, GL
- Use in Zone 2
- SIL 2

Edition • 2025-02-26T14:34:08+01:00

Type	IMX12-DI01-2S-2R-0/24VDC
ID	7580016

Nominal voltage	24 VDC
Operating voltage U_B	10…30 VDC
Power consumption	≤ 1.2 W
Power dissipation, typical	≤ 1.04 W

Input	2-channel or 1-channel with signal doubling
NAMUR input	
NAMUR	EN 60947-5-6
Input circuit monitoring	on/off switchable
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 kΩ
Cable resistance	≤ 50 Ω
Switch-on threshold	1.75 mA
Switch-off threshold	1.55 mA
Wire breakage threshold	≤ 0.06 mA
Short-circuit threshold	≥ 6.4 mA

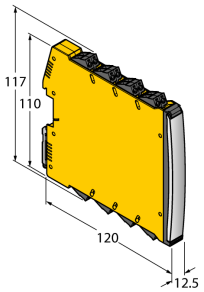
Output circuits	
Output circuits (digital)	2 x relays (change-over)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Switching frequency	≤ 15 Hz
Contact quality	AgNi, 0.3µ Au

Galvanic isolation	
Test voltage	2.5 kV RMS
Input 1 to output 1	375 V peak value acc. to EN 60079-11
Input 2 to output 2	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	300 V RMS acc. to EN 50178 and EN 61010-1
Output 2 to supply	300 V RMS acc. to EN 50178 and EN 61010-1
Output 1 to output 2	300 V RMS acc. to EN 50178 and EN 61010-1

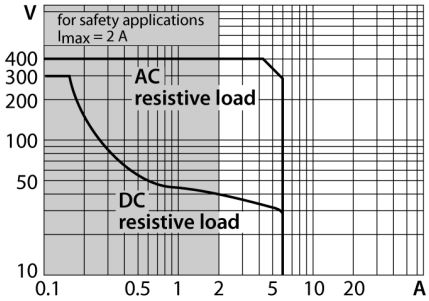
Important note	For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.
Ex approval acc. to conformity certificate	TÜV 14 ATEX 147004 X
Application area	II (1) G, II (1) D
Ignition protection category	[Ex ia Ga] IIC; [Ex ia Da] IIIC
Application area	II 3 (1) G
Ignition protection type	Ex nA nC [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

Dimensions



Output relay – Load curve

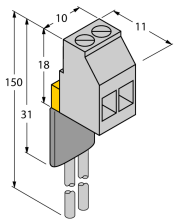


Edition • 2025-02-26T14:34:08+01:00

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	172 g	
Mounting instructions	DIN rail (NS35)	
Housing material	Plastic, 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
		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

Edition • 2025-02-26T14:34:08+01:00

Accessories

Type code	Ident no.		Dimension drawing
WM1 WIDER-STANDSMODUL	0912101	The resistor module WM1 meets the requirements for line monitoring between a mechanical contact and a TURCK signal processor. The input circuit of the signal processor is designed for sensors acc. to EN60947-5-6 (NAMUR) and equipped with a wire-break and short-circuit monitoring function.	
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	

Edition • 2025-02-26T14:34:08+01:00