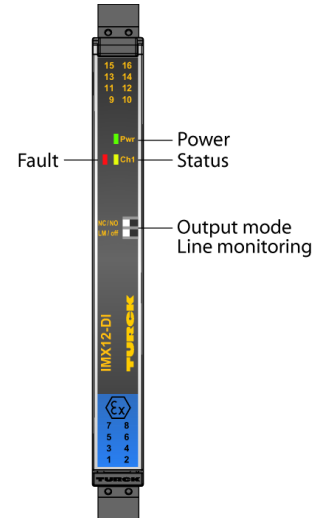
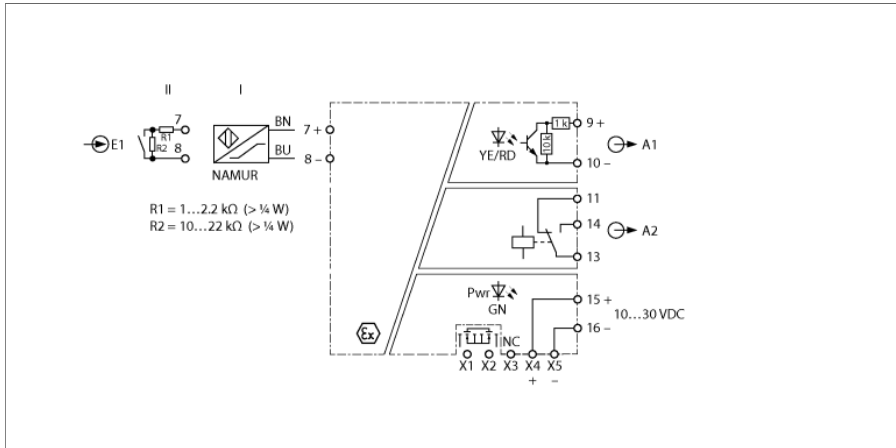


# Isolating switching amplifier 1-channel IMX12-DI03-1S-1NAM1R-PR/24VDC/CC



Sensors according to EN 60947-5-6 (NAMUR) or potential-free contacts can be connected to the IMX12-DI03-1S-1NAM1R-PR/24VDC/CC NAMUR repeater. The device is equipped with an intrinsically safe input circuit and can be installed in zone 2. The output circuit is additionally equipped with 1 relay output. The device can be powered from a power bridge that also transmits a collective fault signal. The device complies with the requirements of NE21.

The devices feature DIP switches on the front. Thus, input circuit monitoring and the direction of action can be switched separately. When using mechanical contacts, either line monitoring must be switched off or the contact must be wired with resistors (see wiring diagram).

The green LED indicates operational readiness. An error in the input circuit causes the red LED to flash according to NE44. A LOW level is then output at both outputs and the common alarm output switches to conductive.

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 spring type terminals.

- Relay output (changeover)
- NAMUR Repeater
- 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 spring type terminals
- Power bridge (connector incl. in delivery)
- ATEX, IECEx, NEPSI, cUL, cFM, IN-METRO, Kosha, TIIS
- Use in Zone 2
- SIL 2

Type	IMX12-DI03-1S-1NAM1R-PR/24VDC/CC
ID	7580003
Nominal voltage	24 VDC
Operating voltage	10...30 VDC
Power consumption	≤ 1.2 W
Power dissipation, typical	≤ 1.03 W

<b>NAMUR input</b>	
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

<b>Output circuits</b>	
NAMUR-Repeater	NAMUR output acc. to EN 60947-5-6
Output circuits (digital)	1 x relay (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	≤ 10 Hz

Power-Bridge common alarm output	MOSFET, U <sub>max</sub> = 30 V, I <sub>max</sub> = 100 mA
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<b>Galvanic isolation</b>	
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	100 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.

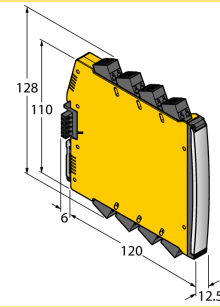
Ex approval acc. to conformity certificate	TÜV 14 ATEX 147004 X
Application area	II (1) G, II (1) D
Ignition protection category	[Ex ia Ga] IIC; [Ex ia Da] IIIC
Application area	II 3 (1) G
Ignition protection type	Ex nA nC [ia Ga] IIC T4 Gc

**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.

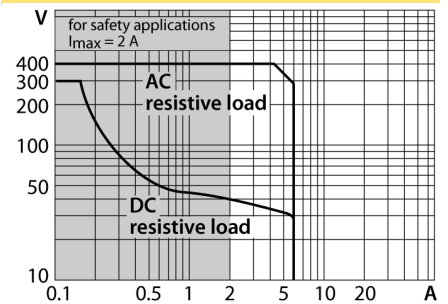
Use in SIL safety circuits	SIL 2 acc. to IEC 61508
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<b>Displays/Operating elements</b>	
Operational readiness	Green
Switching state	Yellow
Error indication	red

## Dimensions

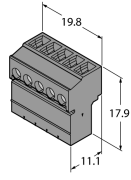
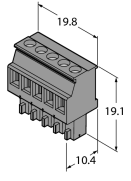
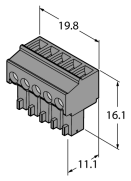
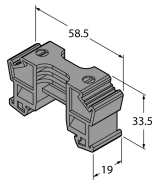
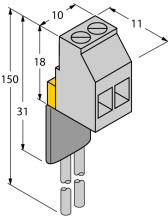
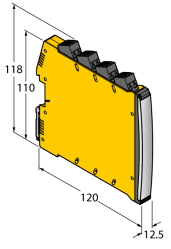


## Output relay – Load curve



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	161 g		
Mounting instructions	DIN rail (NS35)		
Housing material	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 mm <sup>2</sup> (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		

## 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	
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-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	

**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	