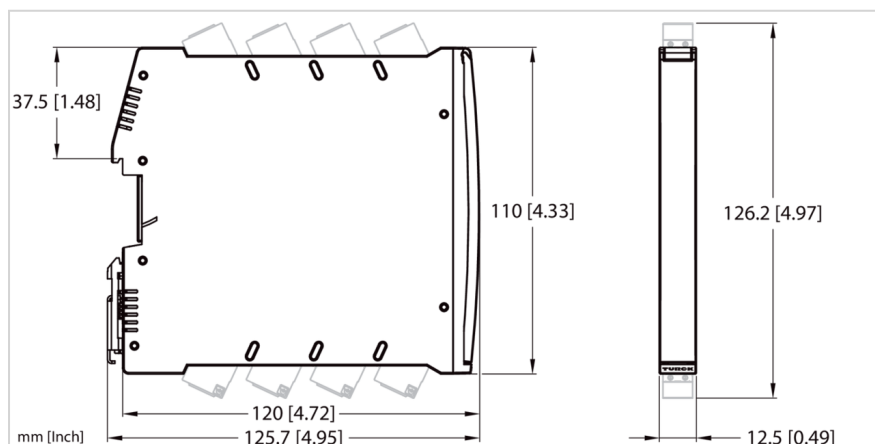


IM12-DI03-1S-2T-S/24VDC/CC

Isolating switching amplifier 1-channel



Type designation	IM12-DI03-1S-2T-S/24VDC/CC
Ident-No.	7580034

Technical data

General data	
Device type	Isolating switching amplifier
Signal type	Digital input
Power supply	
Operating voltage U_B	10...30 VDC
Nominal voltage	24 VDC
Power dissipation, typical	$\leq 1,03$ W
Power supply	24 VDC
Safety specifications	
Functional safety (SIL/PL)	SIL 2
Inputs/Outputs	
Number of channels	1
Inputs	
Cable resistance	$\leq 50 \Omega$
Switching threshold on/off	1.75/1,55 mA
Input circuit monitoring	on/off switchable
Input resistance	1 k Ω
NAMUR	EN 60947-5-6

Features

- Transistor output (≤ 10 kHz)
- Switch between alarm output and signal multiplexing
- Adjustable output mode (NO/NC mode)
- Wire-break and short-circuit monitoring on input circuits (can be switched on/off)
 - Complete galvanic isolation
 - Input reverse-polarity protected
 - Removable spring-type terminals
 - For use in ATEX Zone 2, cUL
- SIL 2

Technical data

No-load voltage	8,2 VDC
Number of NAMUR inputs	1
Short-circuit current	8,2 mA
Short-circuit threshold	≥6,4 mA
Wire breakage threshold	≤0,06 mA

Outputs

Switching current per output	0,1 A
Digital output	Transistor output
Output circuits (digital)	2 x transistor (potential-free, short-circuit proof)
Switching frequency	≤10000 Hz
Switching voltage	≤30 VDC
Voltage drop	≤ 1.1 V at 20 mA, ≤ 1.8 V at 50 mA, ≤ 2.7 V at 100 mA

Galvanic isolation

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 2 to supply	100 V RMS acc. to EN 50178 and EN 61010-1

Mechanical data

Dimensions	120 mm x 12,5 mm x 128 mm
Housing material	Plastic, Polycarbonate/ABS
Electrical connection	Removable spring-type terminals, 2-pin
Terminal cross-section	0.2...2.5 mm ² (AWG: 24...14)
Design	Modular housing
Suitable for row installation	yes
Mounting instructions	DIN rail (NS35)

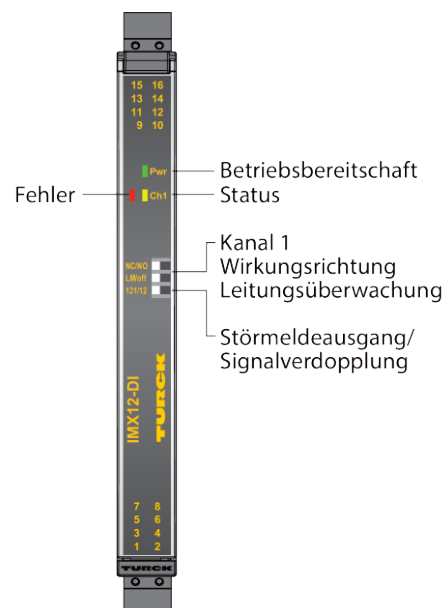
Ambient conditions

Altitude	max. 2000 m
Pollution degree	2
Shock	EN 61373 Klasse B, EN 50155, GL VI-7-2, EN 60068-2-6, EN 60068-2-27
Protection class	IP20

Standards/directives

Flammability class acc. to UL 94	V-0
Use in SIL safety circuits	SIL 2 acc. to IEC 61508 gemäß IEC 61508

Tests/approvals



Technical data

Important note	For Ex applications, the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply.
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.
Approvals	ATEX, cULus
Device designation	□

Sensors according to EN 60947-5-6 (NAMUR) or potential-free contacts can be connected to the IM12-DI03-1S-2T-S/24VDC/CC isolating switching amplifier. The device can be installed in zone 2. The device can be switched between 1-channel operation with signal doubling or 1-channel operation with alarm message output using DIP switches. The output circuits are equipped with two potential-free transistors. The device complies with the requirements of NE21.

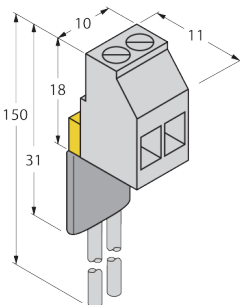
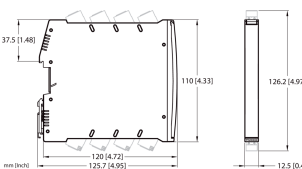
The devices feature DIP switches on the front. This allows to select between the output mode, the input circuit monitoring, as well as toggle between signal duplication and 1-channel operation. When using mechanical contacts, either line monitoring must be switched off or the contact must be wired with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

The green LED indicates operational readiness. An error in the input circuit causes the red LED to flash according to NE44. Then, the transistor of the corresponding output circuit locks.

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.

Mounting accessories

WM1 WIDERSTANDSMODUL	912101	IMX12-SC-2X-4BK	7580940
	The WM1 resistor module 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 in accordance with EN 60947-5-6 (NAMUR) and equipped with a wire-break and short-circuit monitoring function.	Screw terminals for IM(X)12 modules; includes: 4 × 2-pin black terminals	
IMX12-CC-2X-4BK	7580942		
	Spring-type terminals for IM(X)12 modules; includes: 4 × 2-pin black terminals		

Circuit diagram

