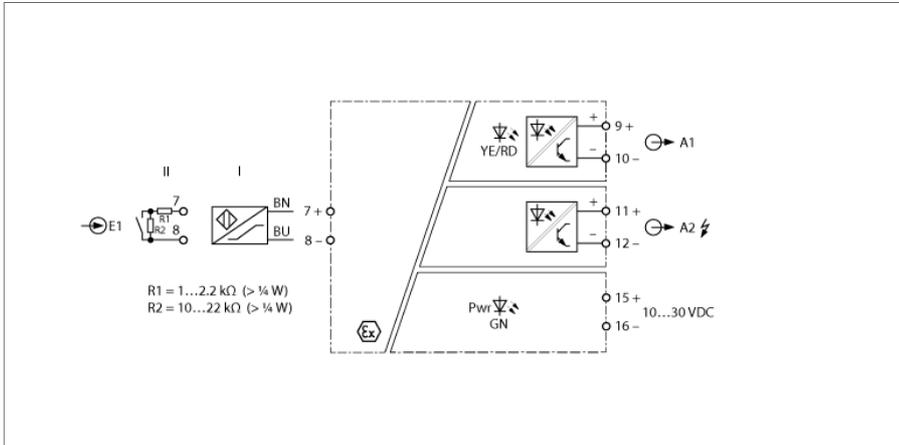


**Isolating switching amplifier
1-channel
IMX12-DI03-1S-2T-S/ 24VDC/CC**



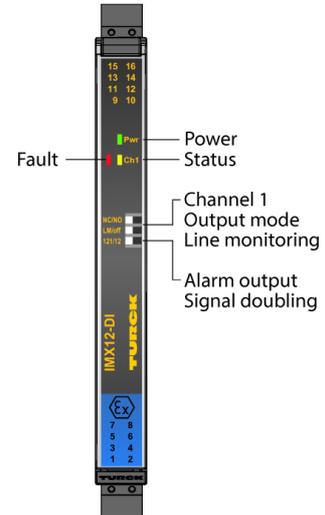
Sensors according to EN 60947-5-6 (NAMUR) or potential-free contacts can be connected to the IMX12-DI03-1S-2T-S/24VDC isolating switching amplifier. The device is equipped with intrinsically safe input circuits and can be installed in zone 2. The device can be switched between 1-channel operation with 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.

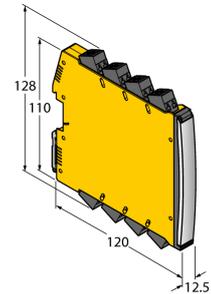


- Transistor output (≤ 10 kHz)
- Switchable: Alarm output or signal doubling
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wire-break/short-circuit (ON/OFF switchable)
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable spring type terminals
- ATEX, IECEx, NEPSI, cUL, cFM, INMETRO, KOSHA, TIIS, TR CU EAC,
- Installation in zone 2
- SIL 2

Isolating switching amplifier
1-channel
IMX12-DI03-1S-2T-S/ 24VDC/CC

Type designation	IMX12-DI03-1S-2T-S/ 24VDC/CC
Ident-No.	7580014
Nominal voltage	24 VDC
Operating voltage range	10...30 VDC
Power consumption	≤ 1.2 W
Power dissipation, typ.	≤ 1.03 W
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
Semiconductor output circuit(s)	
Output circuits (digital)	2 x transistor (potential-free, short-circuit proof)
Switching voltage	≤ 30 VDC
Switching current per output	≤ 0.1 A
Switching frequency	≤ 10000 Hz
Voltage drop	≤ 1.1 V at 20 mA, ≤ 1.8 V at 50 mA, ≤ 2.7 V at 100 mA
Galvanic isolation	
Test voltage	2.5 kV
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
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 [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
Indication	
Operational readiness	green
Switching state	Yellow
Error indication	red

Dimensions



Isolating switching amplifier
1-channel
IMX12-DI03-1S-2T-S/ 24VDC/CC

Protection class	IP20																																																																																
Flammability class acc. to UL 94	V-0																																																																																
Ambient temperature	-25...+70 °C																																																																																
Storage temperature	-40...+80 °C																																																																																
Relative humidity	≤ 95 %																																																																																
Dimensions	120 x 12.5 x 128 mm																																																																																
Weight	153 g																																																																																
Mounting instructions	DIN rail (NS35)																																																																																
Housing material	Polycarbonate/ABS																																																																																
Electrical connection	Removable spring type terminals, 2-pin																																																																																
Terminal cross-section	0.2...2.5 mm ² (24 ... 13 AWG)																																																																																
Environmental conditions	<table border="1"> <tr> <td>Operating altitude</td> <td>Up to 2000 m above sea level</td> </tr> <tr> <td>Pollution degree</td> <td>II</td> </tr> <tr> <td>Surge category</td> <td>II (EN 61010-1)</td> </tr> <tr> <td>Standards used</td> <td></td> </tr> <tr> <td>Voltage resistance and insulation</td> <td></td> </tr> <tr> <td></td> <td>EN 50178</td> </tr> <tr> <td></td> <td>EN 61010-1</td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td>Shock</td> <td></td> </tr> <tr> <td></td> <td>EN 61373 class B</td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td></td> <td>EN 60068-2-6</td> </tr> <tr> <td></td> <td>EN 60068-2-27</td> </tr> <tr> <td>Temperature</td> <td></td> </tr> <tr> <td></td> <td>EN 60068-2-1 Ad</td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td></td> <td>EN 60068-2-2 Bd</td> </tr> <tr> <td></td> <td>EN 60068-2-1</td> </tr> <tr> <td>Humidity</td> <td></td> </tr> <tr> <td></td> <td>EN 60068-2-38</td> </tr> <tr> <td>EMC</td> <td></td> </tr> <tr> <td></td> <td>EN 50155</td> </tr> <tr> <td></td> <td>GL VI-7-2</td> </tr> <tr> <td></td> <td>NE21</td> </tr> <tr> <td></td> <td>EN 61326-1</td> </tr> <tr> <td></td> <td>EN 61326-3-1</td> </tr> <tr> <td></td> <td>EN 61000-4-2</td> </tr> <tr> <td></td> <td>EN 61000-4-3</td> </tr> <tr> <td></td> <td>EN 61000-4-4</td> </tr> <tr> <td></td> <td>EN 61000-4-5</td> </tr> <tr> <td></td> <td>EN 61000-4-6</td> </tr> <tr> <td></td> <td>EN 61000-4-11</td> </tr> <tr> <td></td> <td>EN 61000-4-29</td> </tr> <tr> <td></td> <td>EN 55011</td> </tr> <tr> <td></td> <td>EN 55016</td> </tr> <tr> <td></td> <td>EN 50121-3-2</td> </tr> <tr> <td></td> <td>EN 61000-6-2</td> </tr> </table>	Operating altitude	Up to 2000 m above sea level	Pollution degree	II	Surge 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	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
Operating altitude	Up to 2000 m above sea level																																																																																
Pollution degree	II																																																																																
Surge 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																																																																																
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																																																																																

Isolating switching amplifier
1-channel
IMX12-DI03-1S-2T-S/ 24VDC/CC

Accessories

Type code	Ident-No.	Description	Dimension drawing
WM1	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	