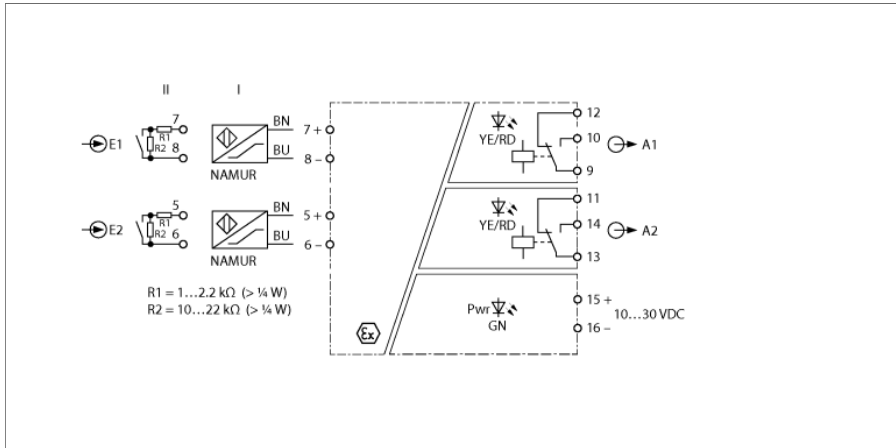


**Isolating switching amplifier  
2-channel  
IMX12-DI01-2S-2R-0/24VDC**



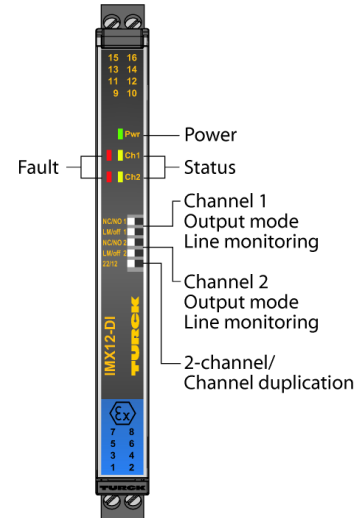
Sensors according to EN 60947-5-6 (NAMUR) or potential-free contact makers can be connected to the IMX12-DI01-2S-2R-0/24VDC isolating switching amplifier. The device is equipped with intrinsically safe input circuits and can be installed in zone 2. It can be switched via DIP switch between 2-channel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

Output mode as well as input circuit monitoring can be switched separately for each channel via DIP switches on the front. 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. A fault in the input circuit leads to a flashing red LED according to NE44. Thereupon the relay of the associated output circuit drops out.

When using mechanical contacts, wire-break and short-circuit monitoring must be switched off or the contact must be wired to resistors (II) (see circuit diagram).

The device is equipped with removable screw terminals.

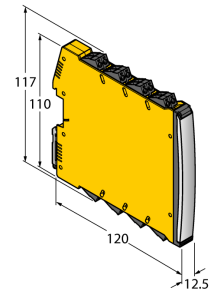


- ATEX, IECEx, NEPSI, cULus, INMETRO
- Installation in zone 2
- SIL 2
- 2 relay outputs (changeover)
- 2-channel or 1-channel signal doubling
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wire-break/short-circuit (ON/OFF switchable)
- Complete galvanic isolation
- Removable screw terminals

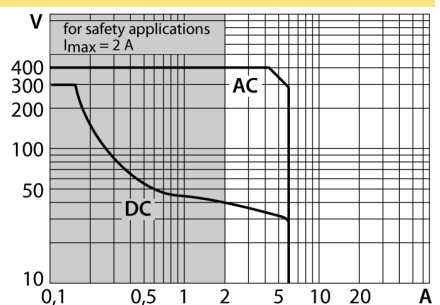
**Isolating switching amplifier  
2-channel  
IMX12-DI01-2S-2R-0/24VDC**

<b>Type code</b>	IMX12-DI01-2S-2R-0/24VDC																					
Ident no.	7580016																					
<b>Nominal voltage</b>	24 VDC																					
Operating voltage range	10...30 VDC																					
Power consumption	≤ 1.2 W																					
<b>Input</b>	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																					
<b>Output circuits (digital)</b>	2 x relay (change-over)																					
Relay switching voltage	≤ 250 VAC/30 VDC																					
Switching current per output	≤ 2 A																					
Switching capacity per output	≤ 500 VA/60 W																					
Switching frequency	≤ 15 Hz																					
Contact quality	AgNi																					
<b>Reference temperature</b>	23 °C																					
<b>Galvanic isolation</b>																						
Test voltage	2.5 kV																					
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 acc. to EN 60079-11																					
Output 1 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																					
<b>Important note</b>	For safety applications the values specified in the safety manual or the relevant 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																					
Max. output voltage $U_o$	≤ 9.3 V																					
Max. output current $I_o$	≤ 9.6 mA																					
Max. output power $P_o$	≤ 22 mW																					
Characteristic	linear																					
Internal inductance/capacitance L/C,	$L_i = 76.5 \mu\text{H}$ , $C_i$ negligibly small																					
External inductance/capacitance L <sub>e</sub> /C <sub>e</sub> ,																						
	<table border="1"> <thead> <tr> <th>Ex ia</th> <th colspan="3">IIC</th> <th colspan="3">IIB</th> </tr> </thead> <tbody> <tr> <td>Lo [mH]</td> <td>1</td> <td>5</td> <td>10</td> <td>1</td> <td>10</td> <td>20</td> </tr> <tr> <td>Co [μF]</td> <td>1.2</td> <td>0.89</td> <td>0.8</td> <td>6.6</td> <td>4.1</td> <td>3.6</td> </tr> </tbody> </table>	Ex ia	IIC			IIB			Lo [mH]	1	5	10	1	10	20	Co [μF]	1.2	0.89	0.8	6.6	4.1	3.6
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Ex ia	IIC	IIB																				
Lo [mH]	100	100																				
Co [μF]	4.1	31																				
Application area	II 3 (1) G																					
Protection type	Ex nA nC [ia Ga] IIC T4 Gc																					
<b>Suitable for use in safety circuits up to</b>	SIL 2 acc. to IEC 61508																					
Useful lifetime	10 years																					
Probability dangerous failure on demand PFD	$4.80 \cdot 10^{-4}$ years																					
Average frequency dangerous failure per hour PFH	$9.30 \cdot 10^{-8}$																					
Hardware fault tolerance HFT	0																					
Safe failure fraction SSF	66 %																					

**Dimensions**



**Output relay – Load curve**



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

**Indication**

Operational readiness	green
Switching state	yellow
Error indication	red

**IP Rating**

IP Rating	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 117 mm
Weight	163 g
Mounting instruction	for DIN rail
Housing material	polycarbonate/ABS
Electrical connection	removable screw clamps, 2-pin
Terminal cross-section	0.2 ... 2.5 mm <sup>2</sup> (24 ... 13 AWG)
Tightening torque	0.5 Nm
Tightening torque	4.43 LBS-Inch
Environmental conditions	

Operating altitude	up to 2000 m above sea level
Pollution degree	II
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