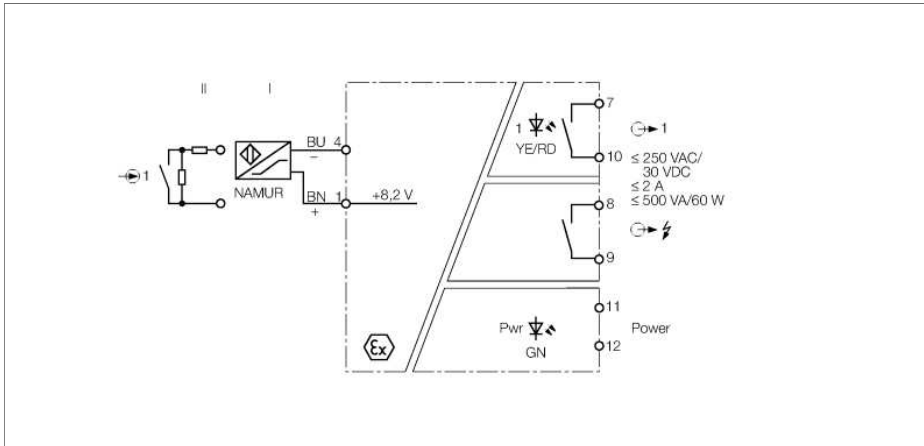


Isolating switching amplifier
1-channel
IM1-121EX-R



The single-channel isolating switching amplifier IM1-121EX-R is equipped with an intrinsically safe input circuit.

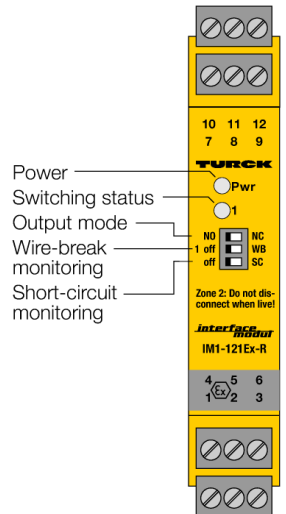
Sensors according to EN 60947-5-6 (NAMUR) can be connected to the device or potential-free contactors.

The output circuits feature two relays each with NO contact, one of which works as alarm output.

Three front panel switches are available to set the output mode separately for each channel (NO or NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

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

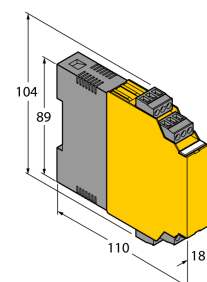
The green LED indicates operational readiness. The output switching status is indicated yellow by the two color LED. In the event of input circuit errors the dual color LED changes to red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm relay are de-energized.



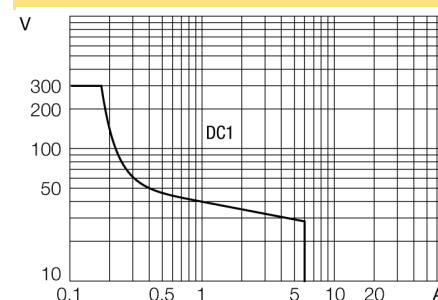
- Intrinsically safe input circuits Ex ia
- Installation in zone 2
- FM, NEPSI
- SIL2
- Application area acc. to ATEX: II (1) G, II (1) D; II G 3
- 2 relay outputs (NO)
- Adjustable signal flow direction (NO/NC)
- Common alarm output
- Input circuit monitoring of wire-break/short-circuit (ON/OFF switchable)
- Removable terminal blocks
- Complete galvanic separation

Isolating switching amplifier 1-channel IM1-121EX-R

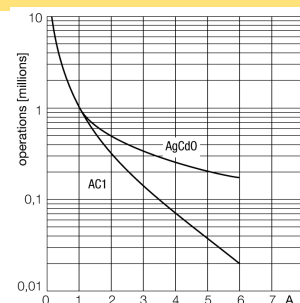
Dimensions



Load curve



Output relay electrical lifetime



Type code	IM1-121EX-R																					
Ident no.	7541229																					
Nominal voltage	Universal voltage supply unit																					
Operating voltage	20...250 VAC																					
Frequency	40...70 Hz																					
Operating voltage range	20...125 VDC																					
Power consumption	≤ 3 W																					
NAMUR	EN 60947-5-6																					
No-load voltage	8.2 VDC																					
Short-circuit current	8.2 mA																					
Input resistance	1 kΩ																					
Cable resistance	≤ 50 Ω																					
Switch-on threshold:	1.55 mA																					
Switch-off threshold:	1.75 mA																					
Wire breakage threshold	≤ 0.1 mA																					
Short-circuit threshold	≥ 6 mA																					
Output circuits (digital)	2 x relays (NO)																					
Relay switching voltage	≤ 250 VAC/120 VDC																					
Switching current per output	≤ 2 A																					
Switching capacity per output	≤ 500 VA/60 W																					
Switching frequency	≤ 10 Hz																					
Contact quality	AgNi, 3μ Au																					
Galvanic separation																						
Test voltage	2.5 kV																					
Ex approval acc. to conformity certificate	TÜV 04 ATEX 2553																					
Application area	II (1) G, II (1) D																					
Protection type	[Ex ia Ga] IIC; [Ex ia Da] IIIC																					
Max.output voltage U _o	≤ 9.6 V																					
Max. output current I _o	≤ 11 mA																					
Max. output power P _o	≤ 26 mW																					
Rated voltage	250 V																					
Characteristic	linear																					
Internal inductance/capacitance L _i /C _i	Li = 65 μH, Ci negligibly small																					
External inductance/capacitance L _e /C _e	<table><tr><td>Ex ia</td><td colspan="3">IIC</td><td colspan="3">IIB</td></tr><tr><td>Lo [mH]</td><td>1</td><td>5</td><td>10</td><td>2</td><td>10</td><td>20</td></tr><tr><td>Co [μF]</td><td>1,1</td><td>0,83</td><td>0,74</td><td>5,2</td><td>3,8</td><td>3,4</td></tr></table>	Ex ia	IIC			IIB			Lo [mH]	1	5	10	2	10	20	Co [μF]	1,1	0,83	0,74	5,2	3,8	3,4
Ex ia	IIC			IIB																		
Lo [mH]	1	5	10	2	10	20																
Co [μF]	1,1	0,83	0,74	5,2	3,8	3,4																
Ex approval acc. to conformity certificate	TÜV 06 ATEX 552968 X																					
Application area	II 3 G																					
Protection class for belonging equipment	Ex nA nC [ic Gc] IIC/IIB T4 Gc																					
Max.output voltage U _o	≤ 9.6 V																					
Max. output current I _o	≤ 11 mA																					
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Ex ic	IIC			IIB																		
Lo [mH]	1	5	10	1	5	10																
Co [μF]	1.9	1.4	1.2	11	7.5	6.6																
Approval	SIL 2																					
MTTF	400 years acc. to SN 29500 (Ed. 99) 40 °C																					
Indication																						
Operational readiness	green																					
Switching state	yellow																					
Error indication	red																					

Isolating switching amplifier
1-channel
IM1-121EX-R

Mechanical Data

Protection class	IP20
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95%
Dimensions	104x 18x 110 mm
Weight	156 g
Mounting instruction	For mounting on DIN rail or mounting panel
Housing material	Polycarbonate/ABS
Electrical connection	4 x 3-pole removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Tightening torque	0.5 Nm

Isolating switching amplifier
1-channel
IM1-121EX-R

Accessories

Type code	Ident no.	Description	Dimension drawing
IM-CC-3X2BU/2BK	6900475	Cage clamp terminals for IM modules (Ex devices; width 18 mm): 2 blue/2 black, 3-pin, included in delivery.	