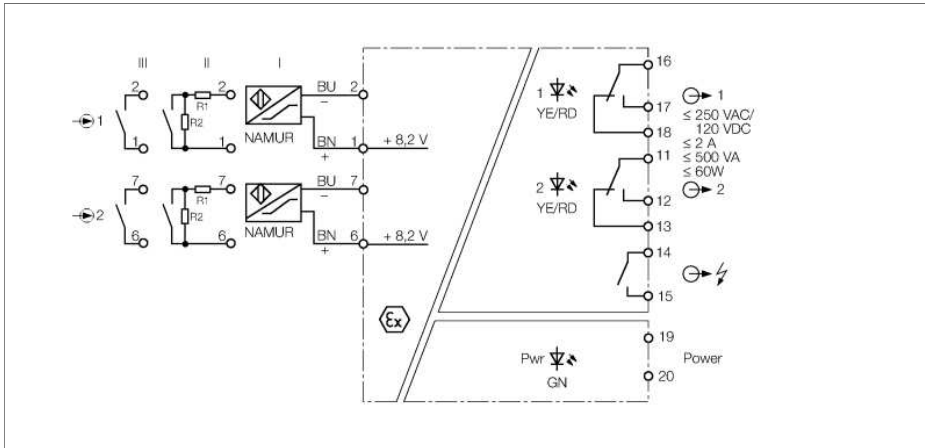


**Isolating switching amplifier
2-channel
IM1-231EX-R**



The dual channel isolating switching amplifier IM1-231EX-R is equipped with an intrinsically safe input circuit.

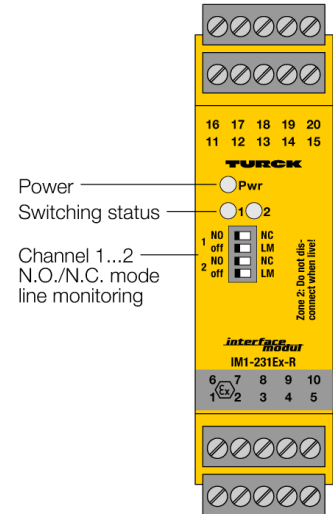
Sensors according to EN 60947-5-6 (NAMUR) can be connected to the device or potential-free contactors.

The output circuits each have a relay with a changeover contact. In addition, the device features a common alarm output.

Four front panel switches are available to set the output mode separately for each channel (NO or NC mode), as well as to enable/disable line monitoring (LM).

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. As a result the output and the alarm relay are de-energized.

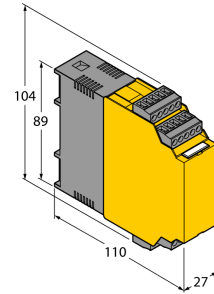


- Intrinsically safe input circuits Ex ia
- Installation in zone 2
- Application area acc. to ATEX: II (1) G, II (1) D; II G 3
- Two relay outputs (changeover)
- Adjustable signal flow direction (NO/NC)
- Input circuit monitoring of wire-break/short-circuit (ON/OFF switchable)
- Common alarm output
-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

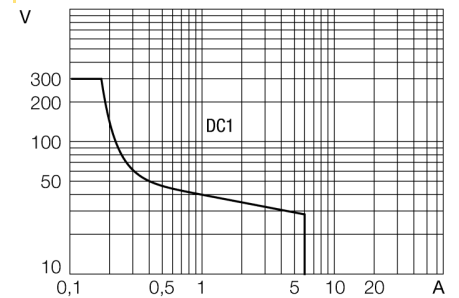
**Isolating switching amplifier
2-channel
IM1-231EX-R**

Type code	IM1-231EX-R																					
Ident no.	7541239																					
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 relay (change-over)																					
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 2604																					
Application area	II (1) G, II (1) D																					
Protection type	[Ex ia Ga] IIC ; [Ex ia Da] IIC																					
Max. output voltage U_o	≤ 11.3 V																					
Max. output current I_o	≤ 13 mA																					
Max. output power P_o	≤ 36 mW																					
Rated voltage	250 V																					
Characteristic	linear																					
Internal inductance/capacitance L_i/C_i	$L_i = 100 \mu\text{H}$, $C_i = 1,1 \text{ nF}$																					
External inductance/capacitance L_e/C_e	■ removable terminal blocks																					
Ex approval acc. to conformity certificate																						
Ex approval acc. to conformity certificate	TÜV 06 ATEX 552967 X																					
Application area	II 3 G																					
Protection class for belonging equipment	Ex nA nC [ic Gc] IIC T4																					
Max. output voltage U_o	≤ 11.3 V																					
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	<table border="1"> <thead> <tr> <th>Ex ic</th> <th colspan="3">IIC</th> <th colspan="3">IIC</th> </tr> </thead> <tbody> <tr> <td>L_e [mH]</td> <td>10</td> <td>5.0</td> <td>1</td> <td>20</td> <td>10.0</td> <td>2</td> </tr> <tr> <td>C_e [μF]</td> <td>0.91</td> <td>1.0</td> <td>1.5</td> <td>4.3</td> <td>4.9</td> <td>6.8</td> </tr> </tbody> </table>	Ex ic	IIC			IIC			L_e [mH]	10	5.0	1	20	10.0	2	C_e [μF]	0.91	1.0	1.5	4.3	4.9	6.8
Ex ic	IIC			IIC																		
L_e [mH]	10	5.0	1	20	10.0	2																
C_e [μF]	0.91	1.0	1.5	4.3	4.9	6.8																
MTTF	150 years acc. to SN 29500 (Ed. 99) 40 °C																					
Indication																						
Operational readiness	green																					
Switching state	yellow																					
Error indication	red																					

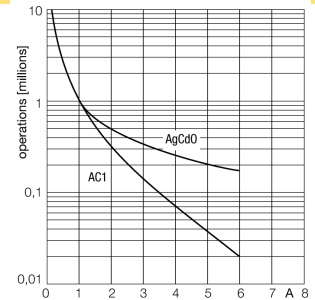
Dimensions



Load curve



Output relay electrical lifetime



**Isolating switching amplifier
2-channel
IM1-231EX-R**

Mechanical Data

Protection class	IP20
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95%
Dimensions	104x 27x 110 mm
Weight	198 g
Mounting instruction	For mounting on DIN rail or mounting panel
Housing material	Polycarbonate/ABS
Electrical connection	4 x 5-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

Accessories

Type code	Ident no.	Description	Dimension drawing
IM-CC-5X2BU/2BK	7504031	Cage clamp terminals for IM modules (Ex devices; width 27 mm); 2 blue/2 black, 5-pin	