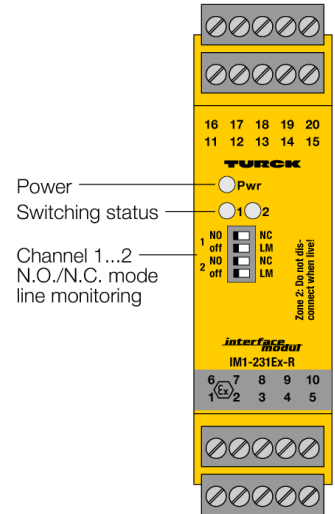
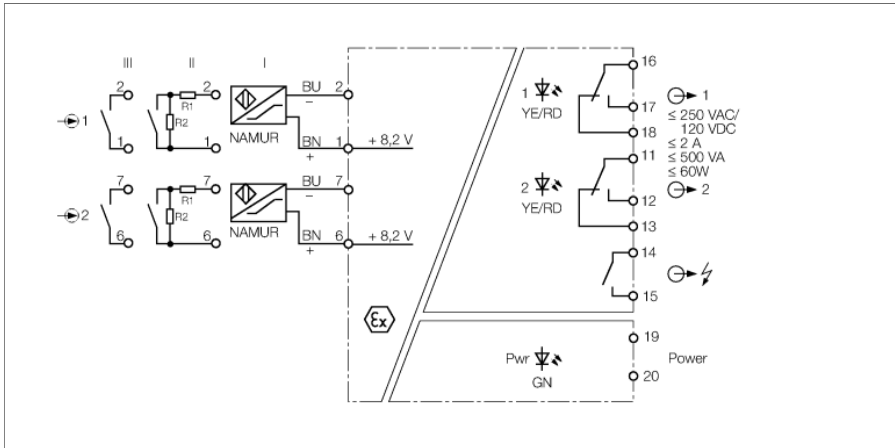


**Isolating switching amplifier
2-channel
IM1-231EX-R**



The 2-channel isolating switching amplifier IM1-231EX-R is equipped with intrinsically safe input circuits.

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).

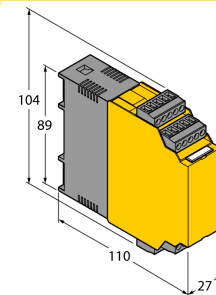
The Pwr LED lights green to indicate operational readiness. The 2-color LED lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm relay drop out.

- ATEX, IECEx, INMETRO, GOST
- Installation in zone 2
- 2 relay outputs (changeover)
- Adjustable output mode (NO/NC)
- Input circuits monitored for wire-break/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation

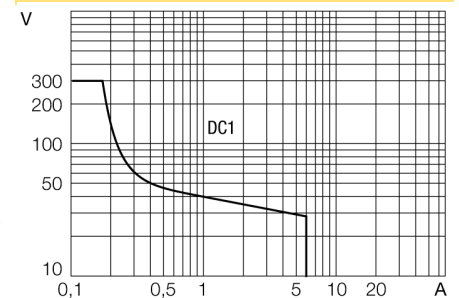
**Isolating switching amplifier
2-channel
IM1-231EX-R**

Type code	IM1-231EX-R																					
Ident no.	7541239																					
Flammability class acc. to UL 94	V-0																					
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 isolation																						
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] IIIC																					
Max. output voltage U _o	≤ 11.3 V																					
Max. output current I _o	≤ 13 mA																					
Max. output power P _o	≤ 36 mW																					
Characteristic	linear																					
Rated voltage	250 V																					
Internal inductance/capacitance L/C _i	Li = 100 μH, Ci = 1,1 nF																					
External inductance/capacitance L _e /C _e	■ removable terminal blocks																					
Ex approval acc. to conformity certificate	TÜV 06 ATEX 552967 X																					
Application area	II 3 G																					
Protection type	Ex nA nC [ic Gc] IIC T4																					
Max. values:	terminal connection: 1+2 / 4...7 / 9+10																					
Max. output voltage U _o	≤ 11.3 V																					
Max. output current I _o	≤ 13 mA																					
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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																					

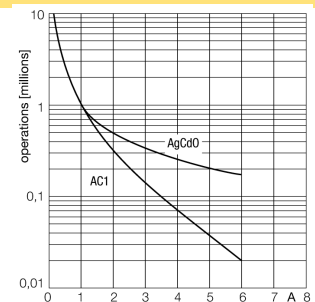
Dimensions



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	104 x 27 x 110 mm
Weight	200 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	