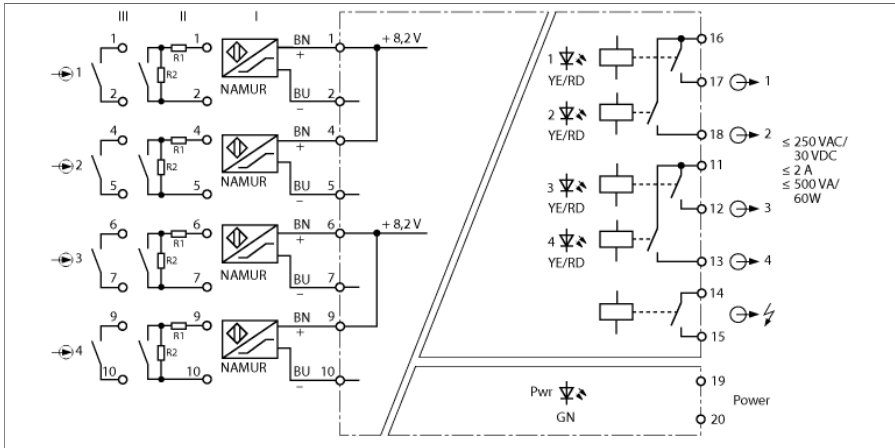


# Isolating switching amplifier

## 4-channel

### IM1-451-R



Sensors according to EN 60947-5-6 (NAMUR) or potential-free contacts can be connected to the 4-channel IM1-451-R isolating switching amplifier.

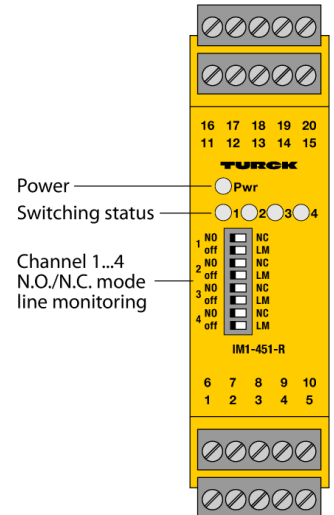
The output circuits each feature a relay with an NO contact. In addition, the device features a common alarm output.

Via eight switches on the front, the output mode (work or quiescent current behavior, i.e. NO/NC) can be switched on and off separately for each channel as well as wire-break (WB) and short-circuit monitoring (SC).

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

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the output. In the event of an input circuit error, the 2-color LED turns red, with the input circuit monitoring switched on. Thereupon the output and the alarm relay drop out.

- 5 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wire-break/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation
- Input reverse-polarity protected
- TR CU



Type	IM1-451-R
ID	7541190
Nominal voltage	Universal voltage supply unit
Operating voltage	20...250 VAC
Frequency	40...70 Hz
Operating voltage	20...250 VDC
Power consumption	≤ 3 W

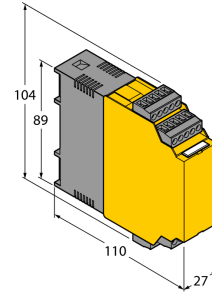
<b>NAMUR input</b>	
NAMUR	EN 60947-5-6
Input circuit monitoring	on/off switchable
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 kΩ
Cable resistance	≤ 50 Ω
Switch-on threshold	1.75 mA
Switch-off threshold	1.55 mA
Wire breakage threshold	≤ 0.06 mA
Short-circuit threshold	≥ 6.4 mA

<b>Output circuits</b>	
Output circuits (digital)	5 x relays (NO)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 750 VA/60 W
Switching frequency	≤ 10 Hz

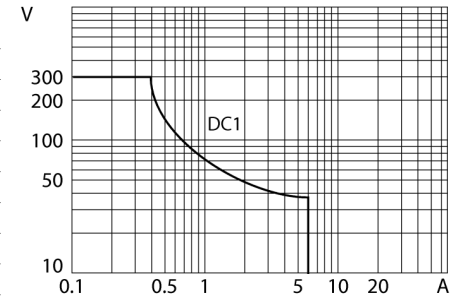
<b>Galvanic isolation</b>	
Test voltage	2.5 kV RMS

<b>Displays/Operating elements</b>	
Operational readiness	Green
Switching state	Yellow
Error indication	red

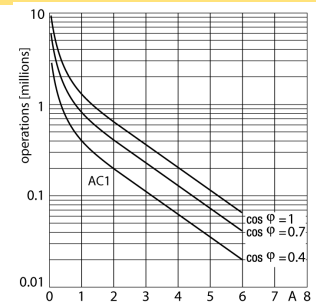
<b>Mechanical data</b>	
Protection class	IP20
Flammability class acc. to UL 94	V-0
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Dimensions	104 x 27 x 110 mm
Weight	214 g
Mounting instructions	DIN rail (NS35) or panel
Housing material	Polycarbonate/ABS
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw terminal
Terminal cross-section	1 x 2.5 mm <sup>2</sup> /2 x 1.5 mm <sup>2</sup>
Tightening torque	0.5 Nm



### Output relay – Load curve



### Output relay – Electrical lifetime



## Accessories

Type code	Ident no.		Dimension drawing
IM-CC-5X2BK/2BK	7541219	Cage clamp terminals for IM modules ( Ex-devices with 27 mm overall width); includes: 4 pcs. of 5-pin black terminals	
WM1 WIDER-STANDSMODUL	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.	