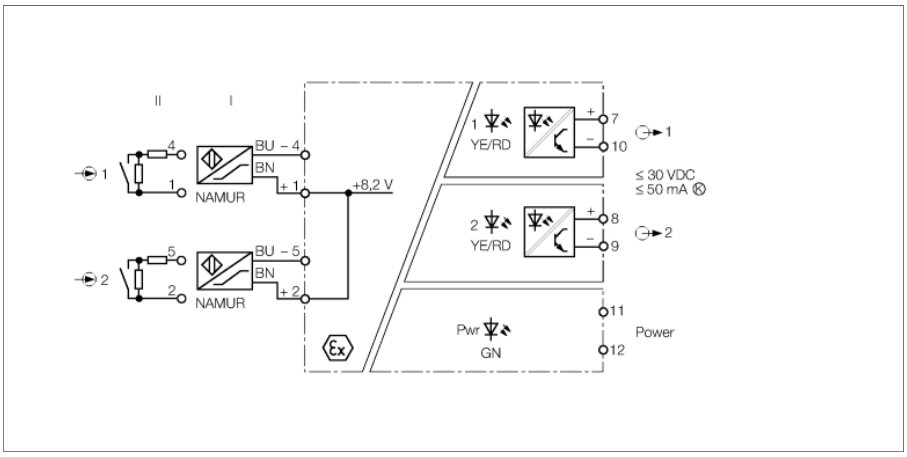
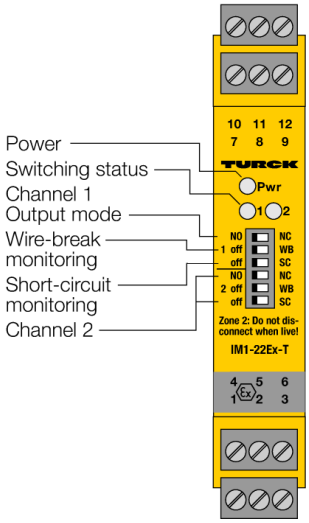
# Isolating switching amplifier
# 2-channel
# IM1-22EX-T




The 2-channel IM1-22EX-T isolating switching amplifier is equipped with intrinsically safe input circuit.

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

The output circuits feature 2 potential-free and short-circuit proof transistors.

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

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

The Pwr LED lights green to indicate operational readiness. The 2-color LEDs 1 and 2 light yellow to indicate the switching status of the associated output. In the event of an input circuit error, the 2-color LED of the assigned faulty input turns red, with the input circuit monitoring switched on. Thereupon the associated output transistor is blocked.

- 2 transistor outputs
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wire-break/ short-circuit (ON/OFF switchable)
- SIL 2
- Complete galvanic isolation
- Input reverse-polarity protected
- ATEX, IECEx, UL, $_{c}$FM$_{us}$, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE, INMETRO
- Installation in zone 2

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| | |
|---|---|
| Type | IM1-22EX-T |
| ID | 7541232 |

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|---|---|
| Nominal voltage | Universal voltage supply unit |
| Operating voltage | 20…250 VAC |
| Frequency | 40…70 Hz |
| Operating voltage $U_B$ | 20…125 VDC |
| Power consumption | ≤ 3 W |
| Power dissipation, typical | ≤ 0.54 W |

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|---|---|
| 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 |

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|---|---|
| Output circuits | |

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|---|---|
| Semiconductor output circuits | |
| Output circuits (digital) | 2 x transistor (potential-free, short-circuit proof) |
| Switching voltage | ≤ 30 VDC |
| Switching current per output | ≤ 0.05 A |
| Switching frequency | ≤ 5000 Hz |
| Voltage drop | ≤ 2.5 V |

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| Galvanic isolation | |
| Test voltage | 2.5 kV RMS |

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| Important note | For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply. |
| Ex approval acc. to conformity certificate | TÜV 21 ATEX 303590 X |
| Application area | II (1) G, II (1) D |
| Ignition protection category | [Ex ia Ga] IIC; [Ex ia Da] IIIC |
| Ex approval acc. to conformity certificate | TÜV 06 ATEX 552968 X |
| Application area | II 3 G |
| Ignition protection type | Ex nA [ic Gc] IIC/IIB T4 Gc |
| Characteristic | linear |
| Important note | If the device is used in applications to achieve functional safety according to IEC 61508, the safety manual must be used. Information in the data sheet are not valid for functional safety. |
| Approval | SIL 2 acc. to EXIDA FMEDA |
| Use in SIL safety circuits | SIL 2 acc. to IEC 61508 |

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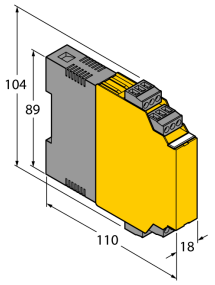
|---|---|
| Displays/Operating elements | |
| Operational readiness | Green |
| Switching state | Yellow |
| State/ Fault | 2 × yellow/red |
| Error indication | red |

## Dimensions

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| Mechanical data | |
|---|---|
| Protection class | IP20 |
| Flammability class acc. to UL 94 | V-0 |
| Ambient temperature | -25…+70 °C |
| | -25 ... +60 °C für UL, FM, TIIS |
| Storage temperature | -40…+80 °C |
| Dimensions | 104 x 18 x 110 mm |
| Weight | 157 g |
| Mounting instructions | DIN rail (NS35) or panel |
| Housing material | Plastic, Polycarbonate/ABS |
| Electrical connection | 4 × 3-pin removable terminal blocks, reverse polarity protected, screw terminal |
| Terminal cross-section | 1 × 2.5 mm²/2 × 1.5 mm² |
| Tightening torque | 0.5 Nm |

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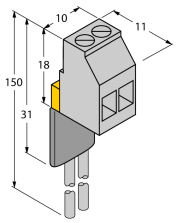
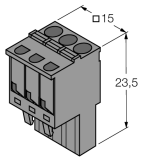
## Accessories

| Type code | Ident no. | | Dimension drawing |
|---|---|---|---|
| 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. |  |
| IM-CC-3X2BU/2BK | 6900475 | Cage clamp terminals for IM modules (Ex-devices with 18 mm overall width); includes: 2 pcs. 3-pin blue terminals and 2 pcs. 3-pin black terminals. |  |

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