

Safety relay for safety interlocks, movable guards, and emergency stops

UE 23-2 MF



Safety class

Class 2

Supply voltage

24 V DC, 115/120 V AC, 230 V AC

Output contacts



Dimensions

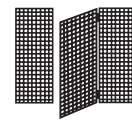
96.5 x 22.5 x 114 mm

Function

- Dual-channel wiring with transversal short circuit detection
- Automatic/manual start
- External device monitoring (EDM)
- Version with connection clamps available

Applications

- Emergency stop control of movable guards shelters

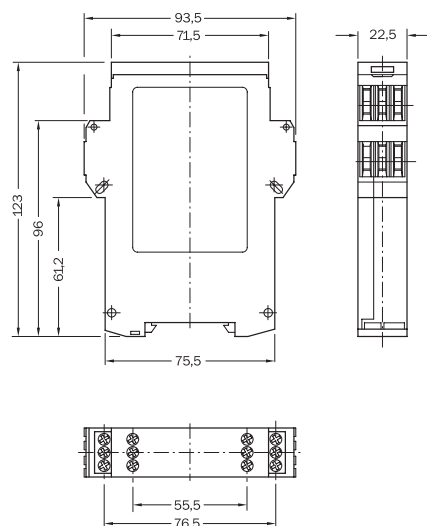


Features

- Safety Category 2* approved to EN 954-1
- Stop Category 0 approved to EN 60 204-1
- 2 instant NO safe contacts + 1 instant NC auxiliary contact
- Automatic or manual reset
- External device monitoring (EDM)
- 2 LED signals
- Inputs for safety devices with 1 or 2 NC contacts

* Cables for input and output signals should be routed outside the control panel, in compliance with the applicable safety category.

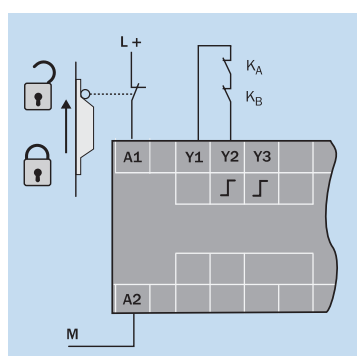
Dimensions



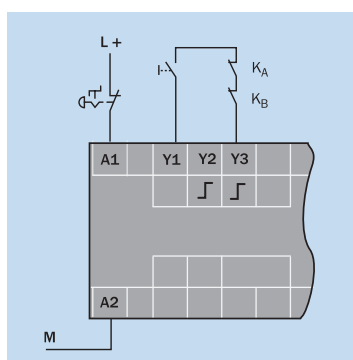
Functionality

UE 23-2 MF controllers are designed for monitoring single channel control devices. When the closed safety circuit is powered, the “SUPPLY” LED indicator light is on and the controller is ready. To activate the outputs, the feedback/reset circuit, built by serial connection of the reset button NO contact with the external device NC contacts, should be closed.

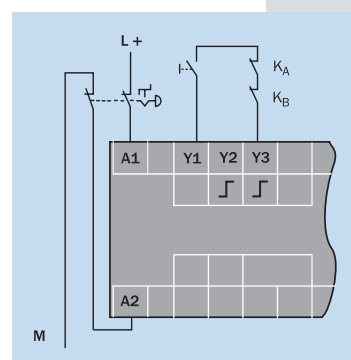
For manual resetting, a pushbutton must be connected to terminals Y1/Y3. For automatic resetting, Y1/Y2 must be linked.



Example of 1 connection channel of a protection shelter with automatic reset and external contact



Example of connection of an emergency stop to a channel with self-contained reset and external contacts

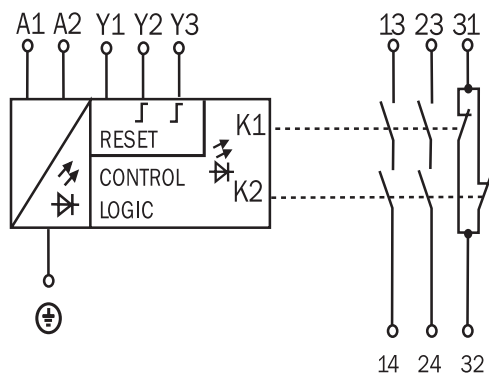


Example of connection of an emergency stop to two channels with self-contained reset and external contacts

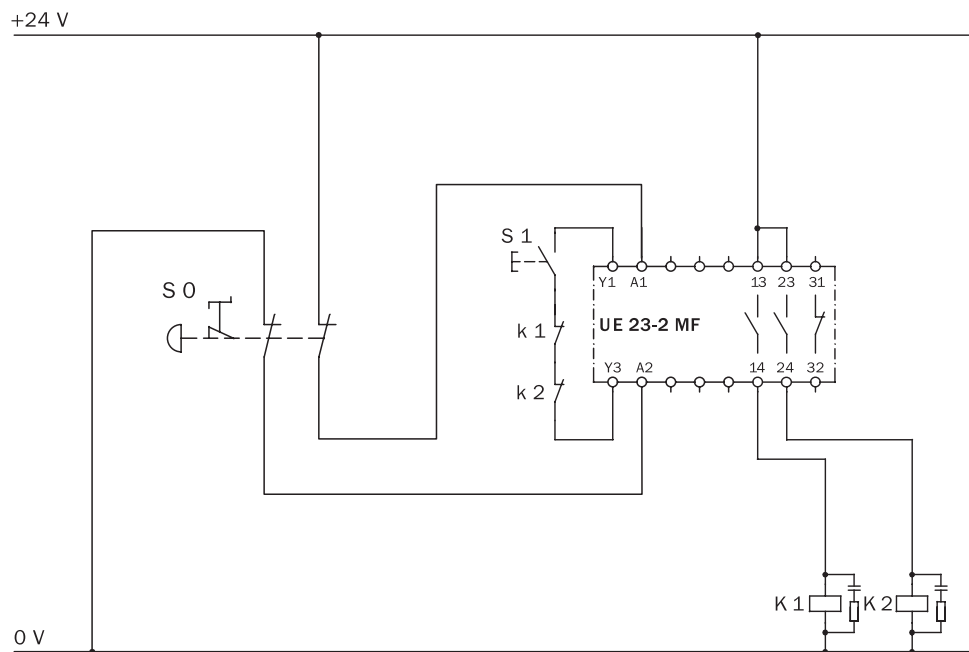
Technical specifications

| General data description | min. | typ. | max. |
|--|--|----------------------|----------|
| Protection class 2 according to EN 50 178 | between supply circuit/control circuit/output circuits and between the output circuits mutually | | |
| Safety category EN 954-1 | 4 | | |
| Supply voltage V_S (A1 - A2) | | | |
| UE 23-2 MF 2 D2 | 20.4 V DC | 24 V DC | 26.4 DC |
| UE 23-2 MF 2 A4 | 98 V AC | 15/120 V AC | 132 V AC |
| UE 23-2 MF 2 A3 | 196 V AC | 230 V AC | 253 V AC |
| Power consumption | | | |
| AC | 2.7 V A | | |
| DC | 1.6 W | | |
| Residual ripple in DC mode (within the limits of V_S) | 2.4 V _{pp} | | |
| Nominal frequency in AC mode | 50 Hz | 60 Hz | |
| Control voltage (Y1 - Y2 - Y3) | | | |
| Control voltage | 40 V DC | | |
| Control current | 200 mA | | |
| Fuse | PTC resistor | | |
| Reset time | | | |
| Manual (Y3) | 70 ms | | |
| Automatic (Y2) | 600 ms | | |
| Galvanic separation (only on AC units) | yes | | |
| Output circuits (13 - 14, 23 - 24, 31 - 32) | | | |
| Response time (K1/K2) | 30 ms | | 80 ms |
| Relay contacts | | | |
| | 2 normally open contacts (NO), safety relevant | | |
| | 1 normally closed contact (NC), not safety relevant | | |
| Contact type | Positively guided | | |
| Contact material | Silver alloy; gold-plated | | |
| Load capacity of the contacts | | | |
| Switching voltage | 10 V AC/DC | 230 V AC/30 V DC | |
| Switching current | 10 mA | 6 A | |
| Total current across all contacts | 12 A | | |
| Category to EN 60 947-5-1 | AC-15 Ue 230 V AC, I_e 4 A (360 c/h) AC-15 Ue 230 V AC, I_e 3 A (3600 c/h) DC-13 Ue 24 V DC, I_e 4 A (360 c/h) DC-13 Ue 24 V DC, I_e 2.5 A (3600 c/h) | | |
| Permitted switching frequency | 3600 c/h | | |
| Mechanical service life (switching cycles) | 1×10^7 | | |
| Electrical service life (dependent upon loading) | 2×10^6 | | |
| Operating data | | | |
| Surge voltage rating (V_{imp}) | 4 kV | | |
| Excess voltage category | III | | |
| Contamination rating of the unit (EN 50 178) | | | |
| External | 3 | | |
| Internal | 2 | | |
| Voltage rating | 300 V AC | | |
| Test voltage V_{eff} (50 Hz) EN 60 439-1 | 2.0 kV | | |
| Protection type | | | |
| Housing | IP 40 | | |
| Terminals | IP 20 | | |
| Interference emission according to | DIN EN 61 000-6-4 | | |
| Ambient operating temperature | -25° C | | |
| Storage temperature | -25° C | | |
| Cross sections of electrical conductors | | | |
| single strand wire (2 x, identical cross section) | 0.14 mm ² | 0.75 mm ² | |
| single strand wire (1 x) | 0.14 mm ² | 2.5 mm ² | |
| fine stranded wire with terminal crimps | 0.25 mm ² | | |
| (2 x, identical cross section) | 0.25 mm ² | 0.5 mm ² | |
| fine stranded wire with terminal crimps (1 x) | 0.25 mm ² | 2.5 mm ² | |
| Weight | 270 g | | |

Switching internal circuits



Connection drawing



Selection table

| Model | Type | Part number |
|-----------------|----------------------------------|-------------|
| UE 23-2 MF 2 D3 | 24 V DC screw terminals | 6 026 146 |
| UE 23-2 MF 2 A4 | 115/120 V A C screw terminals | 6 026 147 |
| UE 23-2 MF 2 A3 | 230 V AC 24 V DC screw terminals | 6 026 148 |

We recommend contacting Customer Service for product selection