



Part no.: 50133006
MSI-SR-LC31MR-01
Safety relay



Figure can vary

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- Dimensioned drawings
- Electrical connection
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Technical data

| Basic data | |
|--|--|
| Series | MSI-SR-LC31 |
| Application | Base device for E-Stop and safety door applications |
| Functions | |
| Functions | Monitoring of E-Stop circuits Monitoring of optoelectronic protective devices Monitoring of position switches Monitoring of proximity switches Monitoring of solenoid switches |
| Restart | Manual |
| Characteristic parameters | |
| SIL | 3 , IEC 61508 |
| SILCL | 3 , IEC/EN 62061 |
| Performance Level (PL) | e , EN ISO 13849-1 |
| PFH _D | 0.00000003 per hour |
| PFH _D | 3E-08 per hour |
| Mission time T _M | 20 years , EN ISO 13849-1 |
| Category | 4 , EN ISO 13849 |
| Electrical data | |
| Supply circuit | |
| Nominal voltage U _N | 24 V AC/DC |
| Nominal frequency | 50 ... 60 Hz |
| Rated control supply voltage U _S at AC 60 Hz | 20.4 V |
| Rated control supply voltage U _S at AC 50 Hz | 26.4 V |
| Max. rated control supply voltage at AC 50 Hz | 26.4 V |
| Min. rated control supply voltage U _S at AC 50 Hz | 20.4 V |
| Min. rated control supply voltage U _S at DC | 20.4 V |
| Max. rated control supply voltage at DC | 26.4 V |
| Min. rated control supply voltage at DC | 20.4 V |
| Rated power AC | 2.9 V·A |
| Rated power DC | 1.6 W |
| Galvanic isolation between supply and control circuit | Yes (when U _N ≥ AC 42-48 V, AC 115-230 V, AC 230 V) |

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| Output circuit | |
|--|---|
| Number of outputs, safety-oriented, undelayed, contact-based | 3 Piece(s) |
| Number of outputs, signaling function, undelayed, contact-based | 1 Piece(s) |
| Release current paths | NO |
| Signaling current paths | NC |
| Contact material | Ag alloy, gold-plated |
| Usage category AC-15 (NO contact) | Ue 230V, Ie 3A |
| Usage category DC-13 (NO contact) | Ue 24V, Ie 3A |
| Short circuit protection (NO contact) | gG class safety fuse 6A, melting integral |
| Nominal switching voltage, release current paths AC | 230 V |
| Nominal switching voltage, signaling current paths AC | 230 V |
| Max. thermal continuous current I_{th} , release current paths | 8 A |
| Max. thermal continuous current I_{th} , signaling current paths | 5 A |
| Max. total current I^2 of all current paths | 25 A ² |
| Mechanical life time | 100,000,000 switching cycles |

| Control circuit | |
|--|---|
| Evaluation of the inputs | Two-channel |
| Nominal output voltage DC | 24 V |
| Input current at the control inputs (safety circuit/reset circuit) | 25 mA |
| Max. peak current at the control inputs (safety circuit/reset circuit) | 100 mA |
| Max. cable resistance, per channel | $\leq (5 + (1.176 \times U_B / U_N - 1) \times 100) \Omega$ |
| Minimum switch-on time | 100 ms |
| Response time (manual start t_{A1}) | 100 ms |
| Test pulse time permitted t_{TP} | 1 ms |
| Release time t_R | 10 ms |
| Recovery time t_W | 750 ms |

| Connection | |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |

| Connection 1 | |
|---------------------|---|
| Type of connection | Terminal |
| Function | Signal IN Signal OUT Voltage supply |
| Type of terminal | Screw terminal |
| No. of pins | 16 -pin |

| Cable properties | |
|---------------------------|--|
| Connection cross sections | 1 x 0.2 to 2.5 mm ² , wire 1 x 0.2 to 2.5 mm ² , wire 1 x 0.25 to 2.5 mm ² , wire with wire-end sleeve 2 x 0.2 to 1.0 mm ² , wire 2 x 0.2 to 1.0 mm ² , wire 2 x 0.25 to 1.0 mm ² , wire with wire-end sleeve |

| Mechanical data | |
|------------------------|----------------------------|
| Dimension (W x H x L) | 22.5 mm x 96.5 mm x 114 mm |
| Net weight | 210 g |
| Housing color | Gray |
| Type of fastening | Snap-on mounting |

| Certifications | |
|-----------------------|--|
|-----------------------|--|

Certifications

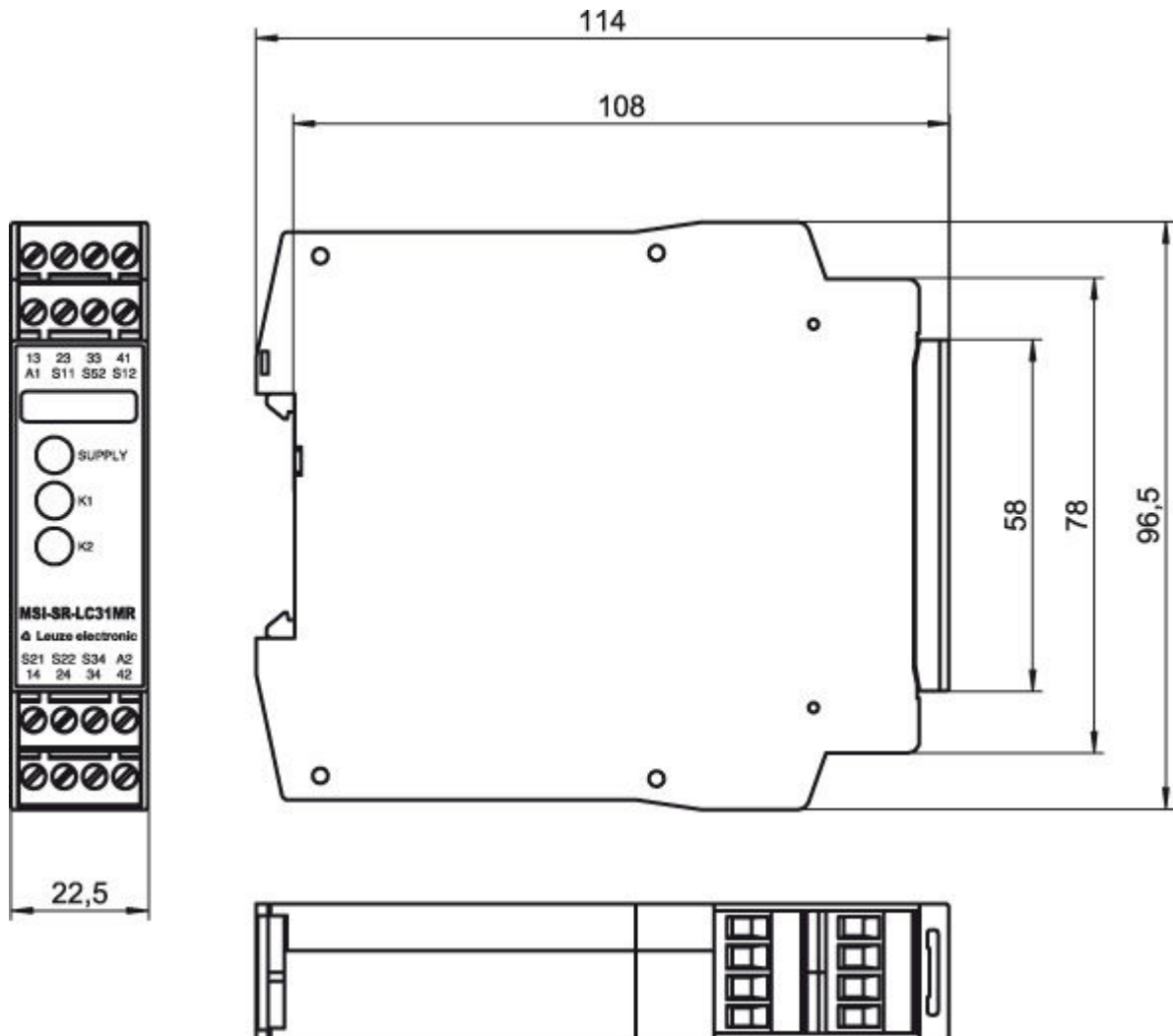
c UL US
TÜV Rheinland

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85364900 |
| eCl@ss 8.0 | 27371819 |
| eCl@ss 9.0 | 27371819 |
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

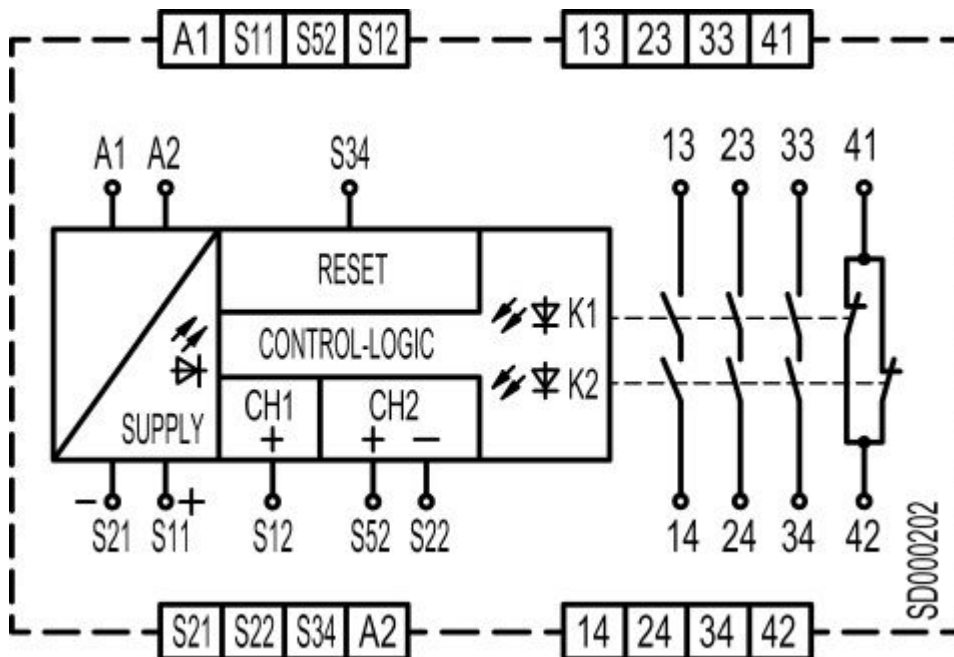
| Connection 1 | |
|--------------------|----------|
| Type of connection | Terminal |

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|------------------|---|
| Function | Signal IN Signal OUT Voltage supply |
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| No. of pins | 16 -pin |

| Terminal | Assignment |
|----------|-------------------------------------|
| 13 | Release current path 1 (NO contact) |
| 14 | Release current path 1 (NO contact) |
| 23 | Release current path 2 (NO contact) |
| 24 | Release current path 2 (NO contact) |
| 33 | Release current path 3 (NO contact) |
| 34 | Release current path 3 (NO contact) |
| 41 | Signaling current path (NC contact) |
| 42 | Signaling current path (NC contact) |
| A1 | +24V |
| A2 | GND |
| S11 | Control circuit 1 |
| S12 | Control circuit 1 |
| S21 | Control circuit 2 |
| S22 | Control circuit 2 |
| S34 | Control circuit of reset button |
| S52 | Control circuit 2 |

Circuit diagrams



Notes

Observe intended use!

- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.