

Technical data sheet Safety locking device

Part no.: 50142072

L300-M31M12B8Y2-MLM24-SCA



Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Accessories



For illustration purposes only

Technical data

Basic data

| | |
|----------|---|
| Series | L300 |
| Contains | 1x actuator I 1x safety locking device I |

Functions

| | |
|-----------------------------------|---|
| Functions | Locking device with guard interlocking in acc. with EN ISO 14119 (type 4) |
| Activation mode of safety outputs | Safety outputs active if safety door is closed and locked |
| Operating principle | Power to lock – Actuator locked if electromagnet is activated |

Characteristic parameters

| | |
|-----------------------------|---------------------------------------|
| SIL | 3, IEC 61508 |
| SILCL | 3, IEC/EN 62061 |
| Performance Level (PL) | Up to and including e, EN ISO 13849-1 |
| MTTF _d | 2,968 years, EN ISO 13849-1 |
| PFH _D | 1.15E-9 per hour |
| Mission time T _M | 20 years, EN ISO 13849-1 |
| Category | 4, EN ISO 13849-1 |
| DC | High |
| Encoding level | Low, EN ISO 14119 |

Electrical data

| | |
|--|--|
| Type of wiring | Series connection Single connection |
| External safeguarding for supply circuit | 2A type Gg (or equivalent) |

Performance data

| | |
|-------------------------------|------------------------|
| Supply voltage U _B | 24 V, DC, -10 ... 10 % |
| Current consumption, max. | 1,200 mA |

Inputs

| | |
|---|------------|
| Number of safety-related switching inputs | 2 Piece(s) |
| Number of digital switching inputs | 1 Piece(s) |

Switching inputs

| | |
|----------------------------|-------------------------|
| Type | Digital switching input |
| Switching voltage, type. | 24 V |
| Voltage type | DC |
| Current consumption, type. | 5 mA |
| Teach input for actuator | No |

Digital switching input 1

| | |
|----------|------------------------------------|
| Function | I4 activation input: electromagnet |
|----------|------------------------------------|

Safety-related switching inputs

| | |
|----------------------------|------------------------|
| Type | Safety switching input |
| Voltage type | DC |
| Switching voltage, type. | 24 V |
| Current consumption, type. | 5 mA |

Outputs

| | |
|--|------------|
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s) |
| Number of digital switching outputs | 1 Piece(s) |

Safety-related switching outputs

| | |
|--------------|--------------------------------------|
| Type | Safety-related switching output OSSD |
| Voltage type | DC |

Safety-related switching output 1

| | |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
|-------------------|-----------------|

Safety-related switching output 2

| | |
|-------------------|-----------------|
| Switching element | Transistor, PNP |
|-------------------|-----------------|

Switching outputs

| | |
|--------------|--------------------------|
| Type | Digital switching output |
| Voltage type | DC |

Switching output 1

| | |
|-------------------|--|
| Switching element | Transistor, PNP |
| Function | O3 signal output: protective-device closed |

Connection

Connection 1

| | |
|--------------------|---|
| Function | Connection with PLC Contact connection Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |

Cable properties

Mechanical data

| | |
|-------------------------------------|--|
| Design | Cubic |
| Housing material | Metal |
| Net weight | 1,500 g |
| Housing color | Gray Red |
| Type of fastening | Through-hole mounting |
| Side of cable entry | From below |
| Switch type | Interlock device with guard interlocking |
| Approach speed | 0.001 ... 0.5 m/s |
| Locking type | Electromagnetic |
| Locking actuation | Magnet |
| Locking force, max. | 9,750 N |
| Mechanical life time | 1,000,000 actuation cycles, IEC 60947-5-1 switching cycles |
| Actuation frequency, max. | 600 per hour, IEC 60947-5-1 |
| Extraction force, unlocked actuator | 30 N |

RFID sensor data

| | |
|--|---|
| Assured operating distance S _{ao} | 2 mm |
| Assured cut-out distance S _{ar} | 10 mm (actuator locked) 4 mm (actuator not locked) |
| Nominal switching distance S _n | 2.5 mm |
| Repeatability | ≤ 10 % S _n |
| Max. switching frequency | 1 Hz |

Operation and display

| | |
|----------------------|------------|
| Type of display | LED |
| Number of LEDs | 5 Piece(s) |
| Operational controls | Standard |

Technical data

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -20 ... 50 °C |
| Ambient temperature, storage | -40 ... 75 °C |

Certifications

| | |
|----------------------|---------|
| Degree of protection | IP 67 |
| | IP 69K |
| Approvals | c UL US |
| | ECOLAB |
| | TÜV Süd |

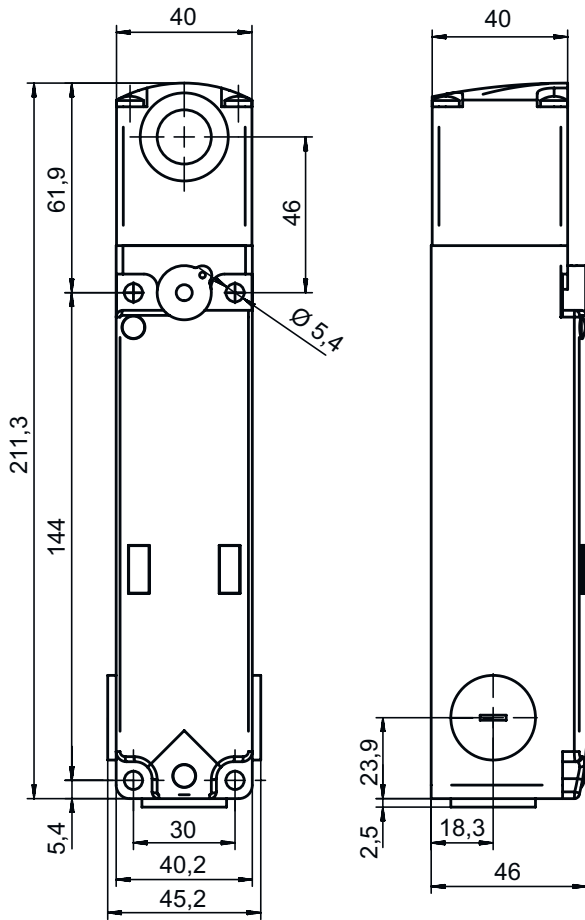
Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85369095 |
| ECLASS 5.1.4 | 27272603 |
| ECLASS 8.0 | 27272603 |
| ECLASS 9.0 | 27272603 |
| ECLASS 10.0 | 27272603 |
| ECLASS 11.0 | 27272603 |
| ECLASS 12.0 | 27272603 |
| ECLASS 13.0 | 27272603 |
| ECLASS 14.0 | 27272603 |
| ECLASS 15.0 | 27272603 |
| ETIM 5.0 | EC002593 |
| ETIM 6.0 | EC002593 |
| ETIM 7.0 | EC002593 |
| ETIM 8.0 | EC002593 |
| ETIM 9.0 | EC002593 |
| ETIM 10.0 | EC002593 |

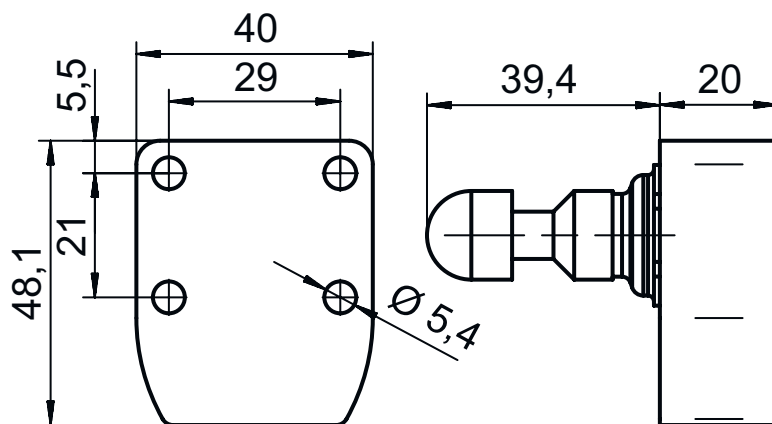
Dimensioned drawings

All dimensions in millimeters

Safety locking device



Actuator

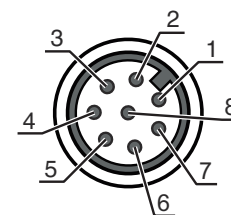


Electrical connection

Connection 1

| | |
|---------------------------|---|
| Function | Connection with PLC Contact connection Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |

| Pin | Pin assignment | Conductor color |
|-----|------------------------------------|-----------------|
| 1 | A1 +24 V | White |
| 2 | IS1 safe input | Brown |
| 3 | A2 +0 V | Green |
| 4 | OS1 safe output | Yellow |
| 5 | O3 signal output | Gray |
| 6 | IS2 safe input | Pink |
| 7 | OS2 safe output | Blue |
| 8 | I4 activation input: electromagnet | Red |




Accessories

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|---|
| | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR |
| | 50135129 | KD S-M12-8A-P1-100 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 10.000 mm Sheathing material: PUR |
| | 50135121 | KD U-M12-8A-P1-020 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 2.000 mm Sheathing material: PUR |
| | 50135122 | KD U-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PUR |




Accessories

Actuators

| | Part no. | Designation | Article | Description |
|--|-------------|-------------|----------|--|
|  | 50132061 ** | AC-L300-SCA | Actuator | Code type: Standard code Encoding level: Low, EN ISO 14119 Dimensions: 40 mm x 48.1 mm x 59.4 mm Housing color: Red Type of fastening: Through-hole mounting |

** Included in delivery contents

General

| | Part no. | Designation | Article | Description |
|--|----------|-----------------------|--------------------|---|
|  | 50149358 | AC-L300-LCK | Lockout device | Dimensions: 45 mm x 43 mm x 134 mm Housing color: Black, Red Material: Metal, with powder coating |
|  | 50149359 | AC-L300-LCK-A1 | Lockout device | Dimensions: 52 mm x 63 mm x 359 mm Housing color: Black, Red Material: Metal, with powder coating |
|  | 50149304 | AC-L300-SH2-G0-B000-Z | Safety door handle | |

Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.