

## Technical data sheet Safety locking device

Part no.: 50142072

L300-M31M12B8Y2-MLM24-SCA

### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Accessories



Figure can vary



## Technical data

### Basic data

|          |   |
|----------|---|
| Series   | L300                                    |
| Contains | 1x actuator<br>1x safety locking device |

### 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               | Open circuit current principle – 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 <sub>d</sub>           | 2,725 years, EN ISO 13849-1           |
| PFH <sub>D</sub>            | 1.17E-9 per hour                      |
| Mission time T <sub>M</sub> | 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<br>Single connection |
| External safeguarding for supply circuit | 2A type Gg (or equivalent)             |

#### Performance data

|                               |                        |
|-------------------------------|------------------------|
| Supply voltage U <sub>B</sub> | 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, typ.   | 24 V                    |
| Voltage type              | DC                      |
| Current consumption, typ. | 5 mA                    |

#### Digital switching input 1

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

#### Safety-related switching inputs

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

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

#### Connection 1

|                    |   |
|--------------------|---|
| Function           | Connection with PLC<br>Contact connection<br>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

|                                     |  |
|-------------------------------------|--|
| Housing material                    | Metal  |
| Housing color                       | Gray<br>Red  |
| Type of fastening                   | Through-hole mounting                                      |
| Side of cable entry                 | From below   |
| Approach speed                      | 0.001 ... 0.5 m/s  |
| 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 <sub>ao</sub> | 2 mm  |
| Assured cut-out distance S <sub>ar</sub>   | 10 mm (actuator locked)<br>4 mm (actuator not locked) |
| Nominal switching distance S <sub>n</sub>  | 2.5 mm  |
| Repeatability                              | ≤ 10 % S <sub>n</sub>                                 |
| Max. switching frequency                   | 1 Hz  |

### Operation and display

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

### Environmental data

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

## Technical data

### Certifications

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

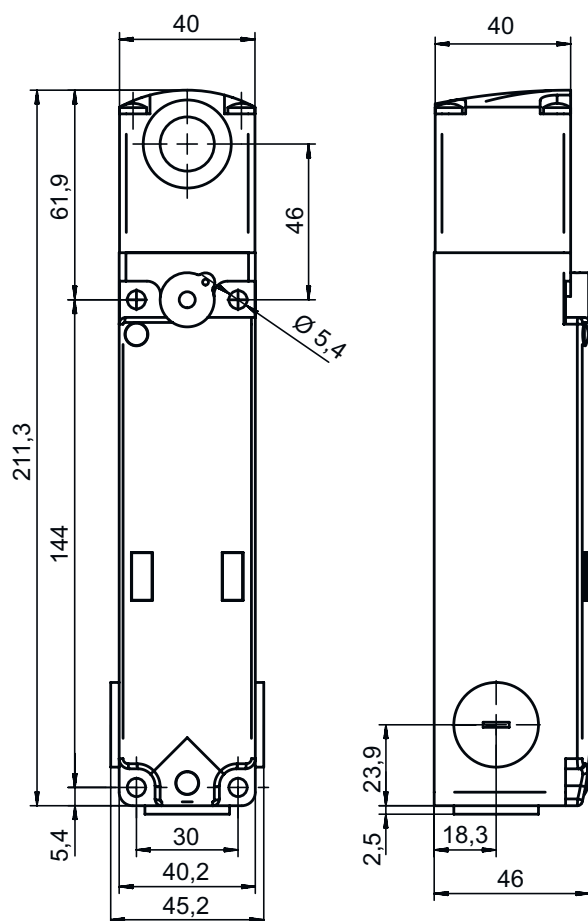
### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85369095 |
| eCl@ss 5.1.4          | 27272603 |
| eCl@ss 8.0            | 27272603 |
| eCl@ss 9.0            | 27272603 |
| eCl@ss 10.0           | 27272603 |
| eCl@ss 11.0           | 27272603 |
| ETIM 5.0              | EC002593 |
| ETIM 6.0              | EC002593 |
| ETIM 7.0              | EC002593 |

## Dimensioned drawings

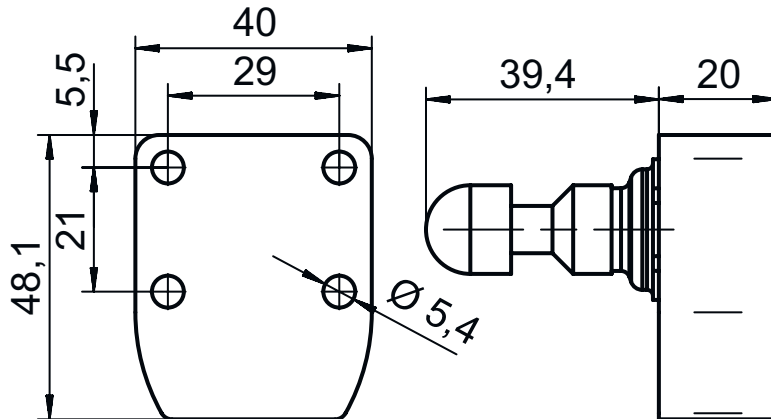
All dimensions in millimeters

### Safety locking device



## Dimensioned drawings

Actuator

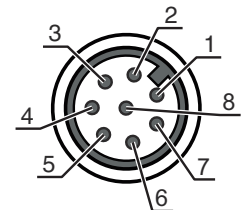


## Electrical connection

### Connection 1


|                    |   |
|--------------------|---|
| Function           | Connection with PLC<br>Contact connection<br>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: protective-device closed | 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<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

## Accessories

|  | Part no. | Designation        | Article          | Description   |
|--|----------|--------------------|------------------|---|
|  | 50135129 | KD S-M12-8A-P1-100 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 10,000 mm<br>Sheathing material: PUR |
|  | 50135121 | KD U-M12-8A-P1-020 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PUR   |
|  | 50135122 | KD U-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PUR   |

## Actuator

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

\*\* Included in delivery contents

### Note



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