

## Technical data sheet Safety locking device

Part no.: 50142116

L300-B1-M31C3-SLM24-UCA



Figure can vary

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## Technical data

### Basic data

|        |         |
|--------|---------|
| Series | L300-B1 |
|--------|---------|

### 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               | Quiescent current principle – Actuator locked if electromagnet is deactivated |

### 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              | High, 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        | 3 Piece(s) |

#### Switching inputs

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

#### Digital switching input 1

|          |                                     |
|----------|-------------------------------------|
| Function | IE1 activation input: electromagnet |
|----------|-------------------------------------|

#### Digital switching input 2

|          |                                     |
|----------|-------------------------------------|
| Function | IE1 activation input: electromagnet |
|----------|-------------------------------------|

#### Digital switching input 3

|          |                            |
|----------|----------------------------|
| Function | I3 control input for reset |
|----------|----------------------------|

#### 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                | 2 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 |

#### Switching output 2

|                   |  |
|-------------------|--|
| Switching element | Transistor, PNP                            |
| Function          | O4 signal output: protective-device locked |

### Connection

#### Connection 1

|                    |   |
|--------------------|---|
| Function           | Connection with PLC<br>Contact connection<br>Voltage supply |
| Type of connection | Terminal  |
| Type of terminal   | Spring-cage terminal  |

#### Cable properties

|                           |   |
|---------------------------|---|
| Connection cross sections | 1 x 0.34 to 0.75 mm <sup>2</sup> , wire with welded-on wire-end sleeve, 1 x 0.34 to 1.5 mm <sup>2</sup> , wire with wire-end sleeve |
|---------------------------|---|

### Mechanical data

|                                     |  |
|-------------------------------------|--|
| Housing material                    | Metal  |
| Housing color                       | Gray<br>Red  |
| Type of fastening                   | Through-hole mounting                                      |
| Type of cable entry                 | M20 x 1.5  |
| Side of cable entry                 | left, right, below   |
| Release device                      | Auxiliary release  |
| Switch type                         | Interlock device with guard interlocking                   |
| Approach speed                      | 0.001 ... 0.5 m/s  |
| Locking type                        | Spring force   |
| Locking actuation                   | Spring   |
| 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  |

## Technical data

### Operation and display

|                                     |   |
|-------------------------------------|---|
| Type of display                     | LED   |
| Number of LEDs                      | 5 Piece(s)  |
| Operational controls                | 2 command devices   |
| Function of the operational control | Button illuminates with icon "Acknowledge", blue<br>Button illuminates with icon "Request", white |

### Environmental data

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

### Certifications

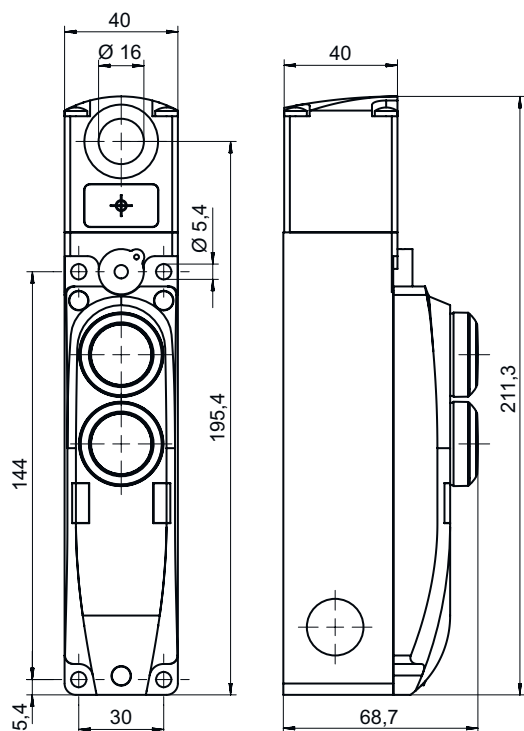
|                      |                              |
|----------------------|------------------------------|
| Degree of protection | IP 65                        |
| Certifications       | c UL US<br>ECOLAB<br>TÜV Süd |

### Classification

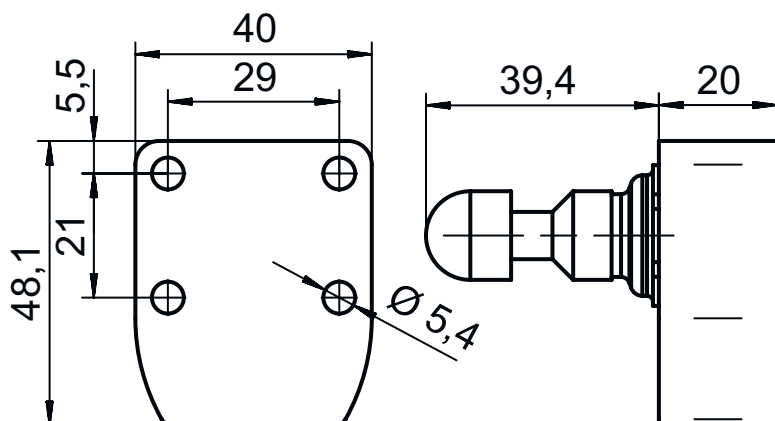
|              |          |
|--------------|----------|
| ECLASS 5.1.4 | 27272603 |
| ECLASS 8.0   | 27272603 |
| ECLASS 9.0   | 27272603 |
| ECLASS 10.0  | 27272603 |
| ECLASS 11.0  | 27272603 |
| ECLASS 12.0  | 27272603 |
| ETIM 5.0     | EC002593 |
| ETIM 6.0     | EC002593 |
| ETIM 7.0     | EC002593 |
| ETIM 8.0     | EC002593 |

## Dimensioned drawings

All dimensions in millimeters



## Dimensioned drawings




## Electrical connection

### Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Connection with PLC  |
|                    | Contact connection   |
|                    | Voltage supply       |
| Type of connection | Terminal             |
| Type of terminal   | Spring-cage terminal |

## Accessories

### Actuator

|  | Part no.    | Designation | Article  | Description   |
|--|-------------|-------------|----------|---|
|  | 50132062 ** | AC-L300-UCA | Actuator | Code type: Unique code<br>Encoding level: high, 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.