

## Technical data sheet Safety locking device

Part no.: 50142125

L250-P41SL-CB02M12S8-PB-UCA

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- Technical data
- Dimensioned drawings
- Electrical connection
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Figure can vary



## Technical data

### Basic data

|        |      |
|--------|------|
| Series | L250 |
|--------|------|

### 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>           | 1,671 years, EN ISO 13849-1           |
| PFH <sub>d</sub>            | 1,24E-09 per hour                     |
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1              |
| Category                    | 4, EN ISO 13849                       |
| DC                          | High                                  |
| Encoding level              | High, EN ISO 14119                    |

### Electrical data

|                                          |                            |
|------------------------------------------|----------------------------|
| Type of wiring                           | 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 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                    |

#### Digital switching input 1

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

#### Digital switching input 2

|          |                                     |
|----------|-------------------------------------|
| Function | IE2 activation input: electromagnet |
|----------|-------------------------------------|

#### Digital switching input 3

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

#### 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 |
| Switching voltage, typ. | 24 V                     |
| 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  |
|                      | Contact connection   |
|                      | Voltage supply       |
| Type of connection   | Cable with connector |
| Cable length         | 200 mm               |
| Cable color          | Black                |
| Number of conductors | 8 -wire              |
| Thread size          | M12                  |
| Type                 | Male                 |
| Material             | Metal                |
| No. of pins          | 8 -pin               |
| Encoding             | A-coded              |

### Mechanical data

|                                     |                                                            |
|-------------------------------------|------------------------------------------------------------|
| Design                              | Cubic                                                      |
| Dimension (W x H x L)               | 40 mm x 191.2 mm x 40 mm                                   |
| Housing material                    | Plastic                                                    |
| Net weight                          | 500 g                                                      |
| Housing color                       | Gray                                                       |
| Type of fastening                   | Through-hole mounting                                      |
| Side of cable entry                 | Lateral                                                    |
| Release device                      | Auxiliary release                                          |
|                                     | Escape release button                                      |
| Approach speed                      | 0.001 ... 0.5 m/s                                          |
| Locking force, max.                 | 2,100 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 | 20 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)    |
|                                            | 6 mm (actuator not locked) |
| Nominal switching distance S <sub>n</sub>  | 3 mm                       |
| Repeatability                              | ≤ 10 % S <sub>n</sub>      |
| Differential travel                        | ≤ 20 % S <sub>n</sub>      |
| Max. switching frequency                   | 1 Hz                       |

### Operation and display

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

Technical data

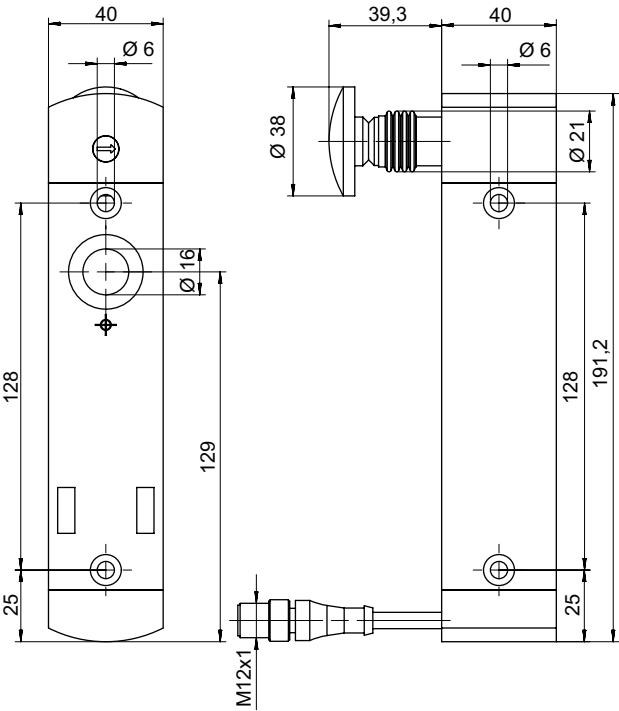
| Environmental data             |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -20 ... 50 °C |
| Ambient temperature, storage   | -40 ... 75 °C |
| Certifications                 |               |
| Degree of protection           | IP 67         |
|                                | IP 69K        |
| Certifications                 | c UL US       |
|                                | ECOLAB        |
|                                | TÜV Süd       |

| Classification |          |
|----------------|----------|
| eCl@ss 8.0     | 27272603 |
| eCl@ss 9.0     | 27272603 |
| ETIM 5.0       | EC002593 |
| ETIM 6.0       | EC002593 |

Dimensioned drawings

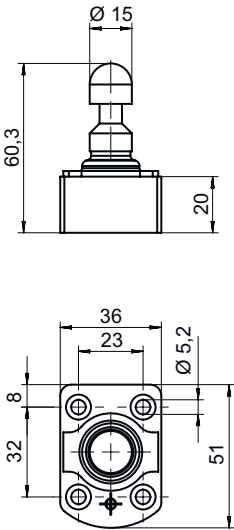
All dimensions in millimeters

Safety locking device



Dimensioned drawings

Actuator

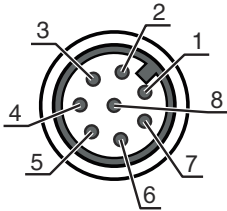


Electrical connection

Connection 1

|                      |                      |
|----------------------|----------------------|
| Function             | Connection with PLC  |
|                      | Contact connection   |
|                      | Voltage supply       |
| Type of connection   | Cable with connector |
| Cable length         | 200 mm               |
| Cable color          | Black                |
| Number of conductors | 8 -wire              |
| 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   | O3 signal output: protective-device closed     | Brown           |
| 3   | A2 +0 V                                        | Green           |
| 4   | OS1 safe output                                | Yellow          |
| 5   | IE2 activation input: electromagnet            | Gray            |
| 6   | I3 programming input / control input for reset | Pink            |
| 7   | OS2 safe output                                | Blue            |
| 8   | IE1 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  |
|                                                                                    | 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                                                                                                                                                                                            |
|------------------------------------------------------------------------------------|-------------|-------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50142133 ** | AC-L250-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 material: Plastic<br>Housing color: Black<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.