

## Technical data sheet Safety light curtain receiver

Part no.: 72001109

ELC110R17-900



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For illustration purposes only

## Technical data

### Basic data

|             |                   |
|-------------|-------------------|
| Series      | ELC100            |
| Device type | Receiver          |
| Contains    | 2x sliding block  |
| Application | Finger protection |

### Functions

|           |                         |
|-----------|-------------------------|
| Functions | Automatic start/restart |
|-----------|-------------------------|

### Characteristic parameters

|                             |                          |
|-----------------------------|--------------------------|
| Type                        | 4, IEC/EN 61496          |
| SIL                         | 3, IEC 61508             |
| SILCL                       | 3, IEC/EN 62061          |
| Performance Level (PL)      | e, EN ISO 13849-1        |
| PFH <sub>D</sub>            | 8E-09 per hour           |
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1 |
| Category                    | 4, EN ISO 13849          |

### Protective field data

|                         |        |
|-------------------------|--------|
| Resolution              | 17 mm  |
| Protective field height | 900 mm |

### Optical data

|                 |  |
|-----------------|--|
| Synchronization | Optical between transmitter and receiver |
|-----------------|--|

### Electrical data

|                    |   |
|--------------------|---|
| Protective circuit | Overvoltage protection<br>Short circuit protected |
|--------------------|---|

### Performance data

|                               |                        |
|-------------------------------|------------------------|
| Supply voltage U <sub>B</sub> | 24 V, DC, -20 ... 20 % |
| Current consumption, max.     | 100 mA                 |

### Outputs

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

### Safety-related switching outputs

|                              |                                      |
|------------------------------|--------------------------------------|
| Type                         | Safety-related switching output OSSD |
| Switching voltage high, min. | 18 V                                 |
| Switching voltage low, max.  | 2.5 V                                |
| Switching voltage, type.     | 22.5 V                               |
| Voltage type                 | DC                                   |
| Current load, max.           | 50 mA                                |
| Load inductivity             | 500,000 µH                           |
| Load capacity                | 0.03 µF                              |
| Residual current, max.       | 0.5 mA                               |
| Voltage drop                 | 1.5 V                                |

### Safety-related switching output 1

|                   |                     |
|-------------------|---------------------|
| Assignment        | Connection 1, pin 2 |
| Switching element | Transistor, PNP     |

### Safety-related switching output 2

|                   |                     |
|-------------------|---------------------|
| Assignment        | Connection 1, pin 4 |
| Switching element | Transistor, PNP     |

### Time behavior

|                    |         |
|--------------------|---------|
| Response time      | 13.4 ms |
| Restart delay time | 100 ms  |

### Connection

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

### Connection 1

|                      |                      |
|----------------------|----------------------|
| Function             | Machine interface    |
| Type of connection   | Cable with connector |
| Cable length         | 300 mm               |
| Sheathing material   | PUR                  |
| Number of conductors | 4 -wire              |
| Thread size          | M12                  |
| Material             | Metal                |
| No. of pins          | 4 -pin               |

### Cable properties

|  |                      |
|--|----------------------|
| Permissible conductor cross section, type. | 0.25 mm <sup>2</sup> |
| Length of connection cable, max.           | 25 m                 |
| Permissible cable resistance to load, max. | 20 Ω                 |

### Mechanical data

|                       |                                      |
|-----------------------|--------------------------------------|
| Dimension (W x H x L) | 34.7 mm x 915 mm x 39.3 mm           |
| Housing material      | Metal                                |
| Metal housing         | Aluminum                             |
| Lens cover material   | Plastic / PMMA                       |
| Material of end caps  | Diecast zinc                         |
| Net weight            | 1,330 g                              |
| Housing color         | Yellow, RAL 1021                     |
| Type of fastening     | Groove mounting<br>Mounting brackets |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 6 Piece(s) |

### Environmental data

|                                    |               |
|------------------------------------|---------------|
| Ambient temperature, operation     | 0 ... 50 °C   |
| Ambient temperature, storage       | -30 ... 70 °C |
| Relative humidity (non-condensing) | 0 ... 95 %    |

### Certifications

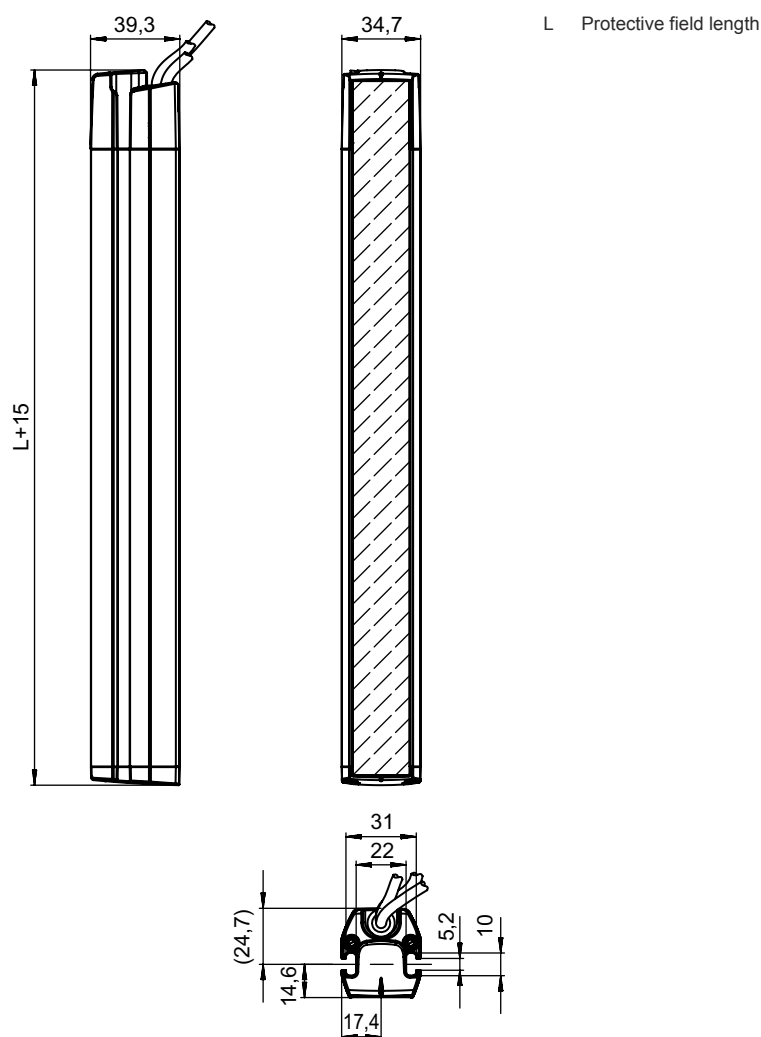
|                      |                           |
|----------------------|---------------------------|
| Degree of protection | IP 65                     |
| Protection class     | III                       |
| Approvals            | c UL US<br>KCs<br>TÜV Süd |
| Vibration resistance | 50 m/s <sup>2</sup>       |
| US patents           | US 6,418,546 B            |

## Technical data

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4          | 27272704 |
| ECLASS 8.0            | 27272704 |
| ECLASS 9.0            | 27272704 |
| ECLASS 10.0           | 27272704 |
| ECLASS 11.0           | 27272704 |
| ECLASS 12.0           | 27272704 |
| ECLASS 13.0           | 27272704 |
| ECLASS 14.0           | 27272704 |
| ECLASS 15.0           | 27272704 |
| ECLASS 16.0           | 27272704 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |
| ETIM 10.0             | EC002549 |
| UNSPSC 26.08          | 46171620 |

## Dimensioned drawings

All dimensions in millimeters



## Electrical connection

### Connection 1

|                      |                      |
|----------------------|----------------------|
| Function             | Machine interface    |
| Type of connection   | Cable with connector |
| Cable length         | 300 mm               |
| Sheathing material   | PUR                  |
| Cable color          | Black                |
| Number of conductors | 4 -wire              |
| Wire cross section   | 0.2 mm <sup>2</sup>  |
| Thread size          | M12                  |
| Type                 | Male                 |
| Material             | Metal                |
| No. of pins          | 4 -pin               |
| Encoding             | A-coded              |

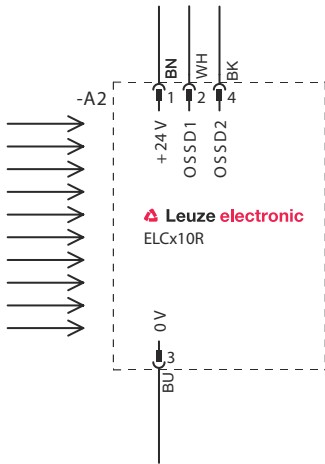
# Electrical connection

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1   | +24 V          | Brown           |
| 2   | OSSD1          | White           |
| 3   | 0 V            | Blue            |
| 4   | OSSD2          | Black           |



## Circuit diagrams

### Connection diagram receiver



### Circuit diagram example with downstream MSI-SR4B safety relay



1.2 Spark extinction circuit, suitable spark extinction provided


## Operation and display

| LED | Display                                       | Meaning                                      |
|-----|---|--|
| 1   | Red, continuous light                         | OSSD off                                     |
|     | red, slowly flashing (0.5 Hz)                 | External error                               |
|     | red, flashing fast (10 Hz)                    | Internal error                               |
|     | Flash sequence 2x ON/OFF, followed by a pause | Connection error                             |
| 2   | Green, continuous light                       | OSSD on                                      |
| 3   | Blue, flashing                                | Light reception strength 1                   |
|     | Blue, continuous light                        | Light reception strength 2                   |
| 4   | Blue, flashing                                | Light reception strength 3                   |
|     | Blue, continuous light                        | Light reception strength 4, OSSD switches on |
| 5   | Blue, flashing                                | Light reception strength 5                   |
|     | Blue, continuous light                        | Light reception strength 6                   |

# Operation and display

| LED | Display                     | Meaning                                       |
|-----|-----------------------------|---|
| 6   | Blue, flashing              | Light reception strength 7                    |
|     | Blue, continuous light      | Light reception strength 8, optimum alignment |
|     | Blue, very quickly flashing | Fault in light reception                      |

## Suitable transmitters


|   | Part no. | Designation   | Article                          | Description   |
|---|----------|---------------|----------------------------------|---|
|  | 72000109 | ELC100T17-900 | Safety light curtain transmitter | Resolution: 17 mm<br>Protective field height: 900 mm<br>Operating range: 0.5 ... 3 m<br>Connection: Cable with connector, M12, Metal, 4 -pin, 300 mm, PUR |

## Part number code


Part designation: ELC1yyzaa-hhhh


| ELC  | Safety light curtain   |
|------|--|
| x    | <b>Series</b><br>1: ELC100   |
| yy   | <b>Function classes</b><br>00: transmitter<br>10: receiver – automatic restart |
| z    | <b>Device type</b><br>T: transmitter<br>R: receiver                            |
| a    | <b>Resolution</b><br>17: 17 mm<br>30: 30 mm                                    |
| hhhh | <b>Protective field height</b><br>300 ... 1500: from 300 mm to 1500 mm         |


**Note**

 A list with all available device types can be found on the Leuze website at [www.leuze.com](http://www.leuze.com).

## 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.

## Accessories

### Connection technology - Connection cables

|  | Part no. | Designation        | Article          | Description  |
|--|----------|--------------------|------------------|--|
|  | 50133860 | KD S-M12-5A-P1-050 | Connection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

### Mounting technology - Other

|  | Part no. | Designation | Article          | Description   |
|--|----------|-------------|------------------|---|
|  | 424439   | BT-2P45     | Mounting bracket | Contains: 2x BT-P45<br>Bore hole 1: M6<br>Bore hole 2: M6<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Groove mounting<br>Mounting bracket, at device: Groove mounting<br>Type of mounting device: Clampable, Suitable for mounting in UDC-S2, DC-S2 device columns<br>Material: Metal |

### Services

|  | Part no. | Designation | Article           | Description  |
|--|----------|-------------|-------------------|--|
|  | S981050  | CS40-I-140  | Safety inspection | Details: Checking of a safety light barrier application in accordance with current standards and guidelines. Inclusion of the device and machine data in a database, production of a test log per application.<br>Conditions: It must be possible to stop the machine, support provided by customer's employees and access to the machine for Leuze employees must be ensured. |
|  | S981046  | CS40-S-140  | Start-up support  | Details: For safety devices including stopping time measurement and initial inspection.<br>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.   |

#### Note

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