

# **Technical data sheet** Safety light curtain receiver

Part no.: 68091410 MLC310R40-1050



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# **Technical data**

#### **Basic data**

| Series      | MLC 300                |
|-------------|------------------------|
| Device type | Receiver               |
| Contains    | 2x BT-NC sliding block |
| Application | Access guarding        |
|             | Danger zone guarding   |
|             | Hand protection        |

#### **Functions**

| Function package | Basic                           |
|------------------|---------------------------------|
| Functions        | Automatic start/restart         |
|                  | Transmission channel changeover |

#### **Characteristic parameters**

| Туре                        | 2, IEC/EN 61496          |
|-----------------------------|--------------------------|
| SIL                         | 1, IEC 61508             |
| SILCL                       | 1, IEC/EN 62061          |
| Performance Level (PL)      | c, EN ISO 13849-1        |
| PFH <sub>D</sub>            | 5.06E-08 per hour        |
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1 |
| Category                    | 2, EN ISO 13849          |
|                             |                          |

#### **Protective field data**

| R | esolution   | 40 mm                                    |
|---|---|--|
| Ρ | rotective field height                                | 1,050 mm                                 |
| С | Optical data  |  |
| s | ynchronization  | Optical between transmitter and receiver |
|   |   |  |
| E | lectrical data  |  |
| Ρ | rotective circuit                                     | Overvoltage protection                   |
|   |   | Short circuit protected                  |
|   |   |  |
|   | Performance data                                      |  |
|   | Supply voltage U <sub>B</sub>                         | 24 V, DC, -20 20 %                       |
|   | Current consumption, max.                             | 150 mA                                   |
|   | Fuse  | 2 A semi time-lag                        |
|   |   |  |
|   | Outputs   |  |
|   | Number of safety-related switching<br>outputs (OSSDs) | 2 Piece(s)                               |
|   |   |  |
|   | Safety-related switching outp                         | uts                                      |
|   | Туре  | Safety-related switching output OSSD     |
|   | Switching voltage high, min.                          | 18 V                                     |
|   | Outline him and the set former                        | 251/                                     |

| Switching voltage high, min. | 18 V     |
|------------------------------|----------|
| Switching voltage low, max.  | 2.5 V    |
| Switching voltage, typ.      | 22.5 V   |
| Voltage type                 | DC       |
| Current load, max.           | 380 mA   |
| Load inductivity             | 2,000 µH |
| Load capacity                | 0.3 µF   |
| Residual current, max.       | 0.2 mA   |
| Residual current, typ.       | 0.002 mA |
| Voltage drop                 | 1.5 V    |
|                              |          |

#### Safety-related switching output 1 Assignment

Switching element

Connection 1, pin 2 Transistor, PNP

Safety-related switching output 2 Assignment Connection 1, pin 4 Switching element Transistor, PNP Timing 10 ms Response time Restart delay time 100 ms Connection Number of connections 1 Piece(s) **Connection 1** Machine interface Function Type of connection Connector Thread size M12 Material Metal No. of pins 5 -pin **Cable properties** Permissible conductor cross 0.25 mm<sup>2</sup> section, typ. Length of connection cable, max. 100 m Permissible cable resistance to 200 Ω load, max. Mechanical data Dimension (W x H x L) 29 mm x 1,116 mm x 35.4 mm Housing material Metal Metal housing Aluminum Plastic / PMMA Lens cover material Diecast zinc Material of end caps Net weight 1,200 g Housing color Yellow, RAL 1021 Type of fastening Groove mounting Mounting bracket Mounting on Device Column Swivel mount **Operation and display** Type of display LED Number of LEDs 2 Piece(s) **Environmental data** Ambient temperature, operation 0 ... 55 °C Ambient temperature, storage -30 ... 70 °C Relative humidity (non-condensing) 0 ... 95 % Certifications Degree of protection IP 65 Protection class Ш Certifications c CSA US c TÜV NRTL US TÜV Süd Vibration resistance 50 m/s<sup>2</sup> Shock resistance 100 m/s<sup>2</sup> US 6,418,546 B **US** patents

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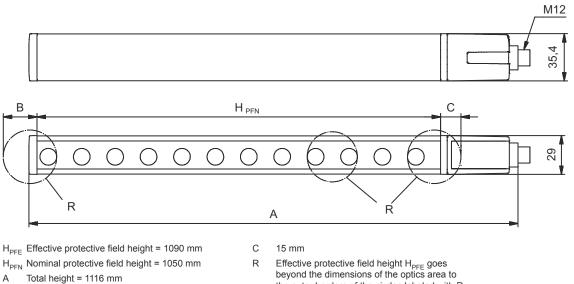
# **Technical data**

| Customs tariff number | 85365019 |
|-----------------------|----------|
| eCl@ss 5.1.4          | 27272704 |
| eCl@ss 8.0            | 27272704 |
| eCl@ss 9.0            | 27272704 |
| eCl@ss 10.0           | 27272704 |
| eCl@ss 11.0           | 27272704 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |

### **Dimensioned drawings**

All dimensions in millimeters

Calculation of the effective protective field height  $H_{PFF} = H_{PFN} + B + C$ 



В 25 mm Effective protective field height H<sub>PFE</sub> goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

### **Electrical connection**

#### **Connection 1**

| Function           | Machine interface |
|--------------------|-------------------|
| Type of connection | Connector         |
| Thread size        | M12               |
| Туре               | Male              |
| Material           | Metal             |
| No. of pins        | 5 -pin            |
| Encoding           | A-coded           |
| Connector housing  | FE/SHIELD         |
|                    |                   |

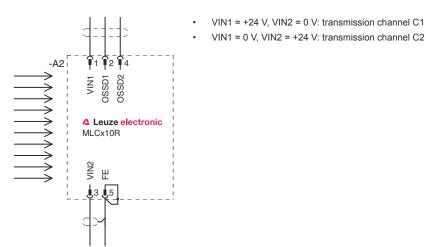
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# **Electrical connection**

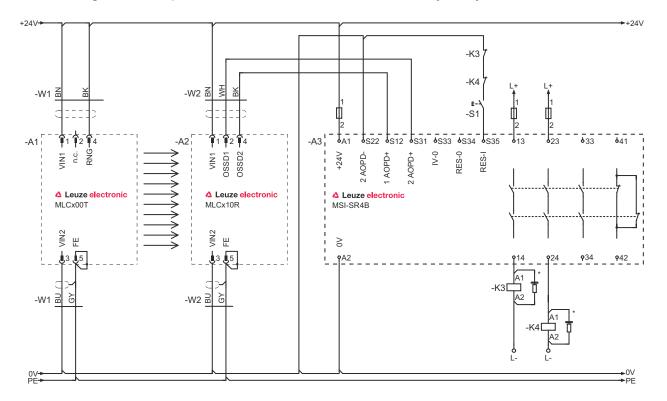
| Pin | Pin assignment | Conductor color | 2      |
|-----|----------------|-----------------|--------|
| 1   | VIN1           | Brown           |        |
| 2   | OSSD1          | White           |        |
| 3   | VIN2           | Blue            | 3 FE 1 |
| 4   | OSSD2          | Black           |        |
| 5   | FE/SHIELD      | Gray            | 4      |

# **Circuit diagrams**

Connection diagram receiver



Circuit diagram example with downstream MSI-SR4B safety relay



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# **Operation and display**



| LED | Display                 | Meaning                           |
|-----|-------------------------|-----------------------------------|
| 1   | Off                     | Device switched off               |
|     | Red, continuous light   | OSSD off.                         |
|     | Red, flashing, 1 Hz     | External error                    |
|     | Red, flashing, 10 Hz    | Internal error                    |
|     | Green, flashing, 1 Hz   | OSSD on, weak signal              |
|     | Green, continuous light | OSSD on                           |
| 2   | Off                     | Transmission channel C1           |
|     | Red, continuous light   | OSSD off, transmission channel C2 |

#### Suitable transmitters

|   | Part no. | Designation    | Article                             | Description  |
|---|----------|----------------|-------------------------------------|--|
| Î | 68090410 | MLC300T40-1050 | Safety light curtain<br>transmitter | Resolution: 40 mm<br>Protective field height: 1,050 mm<br>Operating range: 0 20 m<br>Connection: Connector, M12, Metal, 5 -pin |

#### Part number code

Part designation: MLCxyy-za-hhhhei-ooo

MLC Safety light curtain х Series 3: MLC 300 5: MLC 500 **Function classes** уу 00: transmitter 01: transmitter (AIDA) 02: transmitter with test input 10: basic receiver - automatic restart 11: basic receiver - automatic restart (AIDA) 20: standard receiver - EDM/RES selectable 30: extended receiver - blanking/muting Device type z T: transmitter R: receiver а Resolution 14: 14 mm 20: 20 mm 30: 30 mm 40: 40 mm 90: 90 mm hhhh Protective field height 150 ... 3000: from 150 mm to 3000 mm Host/Guest (optional) е H: Host MG: Middle Guest G: Guest Interface (optional) i. /A: AS-i Option 000 N: high Vibration-proof EX2: explosion protection (zones 2 + 22) SPG: Smart Process Gating Note



A list with all available device types can be found on the Leuze website at www.leuze.com.

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### Notes





Observe intended use!

 $\ensuremath{^{\textcircled{\tiny b}}}$  The product may only be put into operation by competent persons.

#### Accessories

### Connection technology - Connection cables

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

### Mounting technology - Swivel mounts

|          | Part no. | Designation | Article              | Description   |
|----------|----------|-------------|----------------------|---|
| R. R. GA | 429393   | BT-2HF      | Mounting bracket set | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

#### Services

| <br>Part no. | Designation | Article                                      | Description   |
|--------------|-------------|--|---|
| S981050      | CS40-I-140  | Safety inspection<br>"Safety light barriers" | Details: Checking of a safety light barrier application in accordance with<br>current standards and guidelines. Inclusion of the device and machine data in<br>a database, production of a test log per application.<br>Conditions: It must be possible to stop the machine, support provided by<br>customer's employees and access to the machine for Leuze employees must<br>be ensured.<br>Restrictions: Travel costs and accommodation expenses charged separately<br>and according to expenditure. |
| 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.<br>Restrictions: Max. 2 h., no mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.  |

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

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