

# Technical data sheet Safety light curtain transmitter

Part no.: 68016918

MLC500T90-1800H/A



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### **Technical data**



#### Basic data

| Series      | MLC 500                |
|-------------|------------------------|
| Device type | Transmitter            |
| Cascading   | Host                   |
| Contains    | 2x BT-NC sliding block |
| Application | Access guarding        |
|             | Danger zone guarding   |

#### **Characteristic parameters**

| Туре           | 4, IEC/EN 61496          |
|----------------|--------------------------|
| SIL            | 3, IEC 61508             |
| SILCL          | 3, IEC/EN 62061          |
| Mission time T | 20 years, EN ISO 13849-1 |

#### Protective field data

| Resolution              | 90 mm    |
|-------------------------|----------|
| Protective field height | 1,800 mm |
| Operating range         | 0 20 m   |

#### **Optical data**

| Number of beams          | 24 Piece(s)                               |
|--------------------------|---|
| Synchronization          | Optical between transmitter and receiver  |
| Light source             | LED, Infrared                             |
| Wavelength               | 940 nm                                    |
| Transmitted-signal shape | Pulsed                                    |
| LED risk group           | Exempt group (in acc. with EN 62471:2008) |

#### **Electrical data**

| Protective circuit | Overvoltage protection  |
|--------------------|-------------------------|
|                    | Short circuit protected |
|                    |                         |

### Performance data

| Supply voltage U <sub>B</sub>         | 26.5 31.6 V |
|---------------------------------------|-------------|
| Current consumption from AS-i circuit | 50 mA       |

### Inputs

| Number of digital switching inputs | 1 Piece(s) |
|------------------------------------|------------|
|------------------------------------|------------|

### **Switching inputs**

| Туре                         | Digital switching input |
|------------------------------|-------------------------|
| Switching voltage high, min. | 18 V                    |
| Switching voltage low, max.  | 2.5 V                   |
| Switching voltage, type.     | 22.5 V                  |
| Voltage type                 | DC                      |

#### Interface

| Туре                                   | AS-Interface Safety at Work |
|--|-----------------------------|
| AS-i                                   |                             |
| Function                               | Process                     |
| AS-i profile                           | S-0.B.F                     |
| Slave address                          | 131 programmable, default=0 |
| Cycle time acc. to AS-i specifications | Max. 5 ms ms                |

#### Connection

| 2 Piece(s) |
|------------|
|            |

| Connection 1       |                   |
|--------------------|-------------------|
| Function           | Machine interface |
| Type of connection | Connector         |
| Thread size        | M12               |
| Material           | Metal             |
| No. of pins        | 5 -pin            |

#### **Connection 2**

| Function           | Cascade, Guest Out        |
|--------------------|---------------------------|
|                    | Cascade, Middle Guest Out |
| Type of connection | Cable with connector      |
| Cable length       | 330 mm                    |
| Sheathing material | PUR                       |
| Thread size        | M12                       |
| Material           | Plastic                   |
| No. of pins        | 8 -pin                    |

#### Cable properties

| ouble properties                           |                      |
|--|----------------------|
| Permissible conductor cross section, type. | 0.25 mm <sup>2</sup> |
| Length of connection cable, max.           | 100 m                |
| Permissible cable resistance to load, max. | 200 Ω                |

#### **Mechanical data**

| Dimension (W x H x L) | 29 mm x 1,866 mm x 53 mm |
|-----------------------|--------------------------|
| Housing material      | Metal                    |
| Metal housing         | Aluminum                 |
| Lens cover material   | Plastic / PMMA           |
| Material of end caps  | Diecast zinc             |
| Net weight            | 2,025 g                  |
| Housing color         | Yellow, RAL 1021         |
| Type of fastening     | Groove mounting          |
|                       | Mounting brackets        |
|                       | 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     | III                  |
| Approvals            | c TÜV NRTL US        |
|                      | c UL US              |
|                      | TÜV Süd              |
| Vibration resistance | 50 m/s²              |
| Shock resistance     | 100 m/s <sup>2</sup> |
| US patents           | US 6,418,546 B       |

We reserve the right to make technical

changes

### **Technical data**

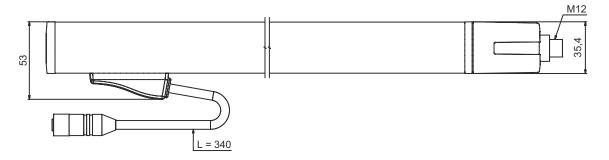


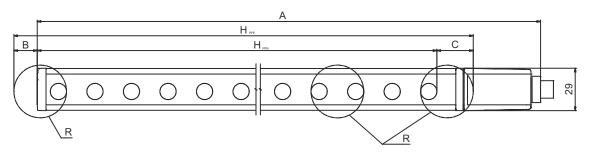
| Customs tariff number | 85365019 |
|-----------------------|----------|
| ECLASS 5.1.4          | 27272704 |
| ECLASS 8.0            | 27272704 |
| ECLASS 9.0            | 27272704 |
| ECLASS 10.0           | 27272704 |
| ECLASS 11.0           | 27272704 |
| ECLASS 12.0           | 27272704 |
| ECLASS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

### **Dimensioned drawings**

All dimensions in millimeters

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





 $H_{\mathrm{PFE}}$  Effective protective field height = 1890 mm H<sub>PFN</sub> Nominal protective field height = 1800 mm

Total height = 1866 mm

50 mm

- Effective protective field height  $H_{\text{PFE}}$  goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

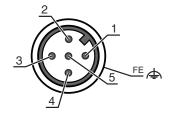
### **Electrical connection**



### **Connection 1**

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

| Pin | Pin assignment |
|-----|----------------|
| 1   | AS-i+          |
| 2   | n.c.           |
| 3   | AS-i-          |
| 4   | n.c.           |
| 5   | n.c.           |
|     |                |



#### **Connection 2**

| Function           | Cascade, Guest Out            |
|--------------------|-------------------------------|
|                    | Cascade, Middle Guest Out     |
| Type of connection | Cable with connector          |
| Cable length       | 330 mm                        |
| Sheathing material | PUR                           |
| Cable color        | Black                         |
| Wire cross section | 0.14 mm²                      |
| Type of stranding  | Pair stranding (twisted pair) |
| Thread size        | M12                           |
| Туре               | Female                        |
| Material           | Plastic                       |
| No. of pins        | 8 -pin                        |
| Encoding           | A-coded                       |

## **Operation and display**

| LED | Display                 | Meaning             |
|-----|-------------------------|---------------------|
| 1   | Off                     | Device switched off |
|     | Red, continuous light   | Device error        |
|     | Green, continuous light | Normal operation    |

### Suitable receivers

| Part no. | Designation           | Article                       | Description  |
|----------|-----------------------|-------------------------------|--|
| 68017918 | MLC510R90-1800H/<br>A | Safety light curtain receiver | Resolution: 90 mm Protective field height: 1,800 mm Response time: 7 ms Interface: AS-Interface Safety at Work 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   |
| уу   | Function classes  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 - Baking/muting or gating  35: Extended receiver - Gating |
| z    | Device type T: transmitter R: receiver   |
| a    | 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   |
| е    | Host/Guest (optional) H: Host MG: Middle Guest G: Guest  |
| i    | Interface (optional)<br>/A: AS-i   |
| 000  | Option  //: high Vibration-proof  EX2: explosion protection (zones 2 + 22)  SPG: Smart Process Gating  SPG RR: Smart Process Gating – Reduced resolution   |

### Note



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

### **Notes**



### Observe intended use!



### **Accessories**



## Connection technology - Interconnection cables

|  | Part no. | Designation      | Article               | Description  |
|--|----------|------------------|-----------------------|--|
|  | 429278   | CB-M12-2000E-8TP | Interconnection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 8 -pin<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR |

## Mounting technology - Swivel mounts

|      | Part no. | Designation | Article              | Description   |
|------|----------|-------------|----------------------|---|
| Paga | 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 |

## Alignment aids

|   | Part no. | Designation | Article       | Description               |
|---|----------|-------------|---------------|---------------------------|
| 1 | 520101   | AC-ALM-M    | Alignment aid | Housing material: Plastic |

### 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.  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.  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.