



Figure can vary

**Part no.: 68016909**  
**MLC500T90-900H/A**  
**Safety light curtain transmitter**



## Contents

- Technical data
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## Technical data

| <b>Basic data</b>                     |   |
|---------------------------------------|---|
| Series                                | MLC 500   |
| Device type                           | Transmitter                                       |
| Cascading                             | Host  |
| Contains                              | 2x BT-NC sliding block                            |
| Application                           | Access guarding<br>Danger zone guarding           |
| <b>Characteristic parameters</b>      |   |
| Type                                  | 4 , IEC/EN 61496                                  |
| SIL                                   | 3 , IEC 61508                                     |
| SILCL                                 | 3 , IEC/EN 62061                                  |
| Mission time $T_M$                    | 20 years , EN ISO 13849-1                         |
| <b>Protective field data</b>          |   |
| Resolution                            | 90 mm   |
| Protective field height               | 900 mm  |
| Operating range                       | 0 ... 20 m  |
| <b>Optical data</b>                   |   |
| Number of beams                       | 12 Piece(s)                                       |
| Synchronization                       | Optical between transmitter and receiver          |
| Light source                          | LED , Infrared                                    |
| LED light wavelength                  | 940 nm  |
| Transmitted-signal shape              | Pulsed  |
| LED group                             | Exempt group in acc. with EN 62471:2008           |
| <b>Electrical data</b>                |   |
| Protective circuit                    | Overvoltage protection<br>Short circuit protected |
| <b>Performance data</b>               |   |
| Supply voltage $U_B$                  | 26.5 ... 31.6 V                                   |
| Current consumption from AS-i circuit | 50 mA   |
| <b>Inputs</b>                         |   |
| Number of digital switching inputs    | 1 Piece(s)  |
| <b>Switching inputs</b>               |   |
| Type                                  | Digital switching input                           |
| Switching voltage high, min.          | 18 V  |
| Switching voltage low, max.           | 2.5 V   |
| Switching voltage, typ.               | 22.5 V  |
| Voltage type                          | DC  |
| <b>Interface</b>                      |   |
| Type                                  | AS-Interface Safety at Work                       |

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**AS-i**

|  |                               |
|--|-------------------------------|
| Function                               | Process                       |
| AS-i profile                           | S-0.B.F                       |
| Slave address                          | 1..31 programmable, default=0 |
| Cycle time acc. to AS-i specifications | Max. 5 ms                     |

**Connection**

|                       |            |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
|-----------------------|------------|

**Connection 1**

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

**Connection 2**

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

**Cable properties**

|  |                      |
|--|----------------------|
| Permissible conductor cross section, typ.  | 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 966 mm x 35.4 mm                            |
| Housing material      | Metal , Aluminum                                    |
| Lens cover material   | Plastic / PMMA                                      |
| Material of end caps  | Diecast zinc  |
| Net weight            | 1,125 g   |
| Housing color         | Yellow, RAL 1021                                    |
| Type of fastening     | Groove mounting<br>Mounting bracket<br>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                                  |
| Certifications       | c CSA US<br>c TÜV NRTL US<br>TÜV Süd |
| Vibration resistance | 50 m/s <sup>2</sup>                  |
| Shock resistance     | 100 m/s <sup>2</sup>                 |
| US patents           | US 6,418,546 B                       |

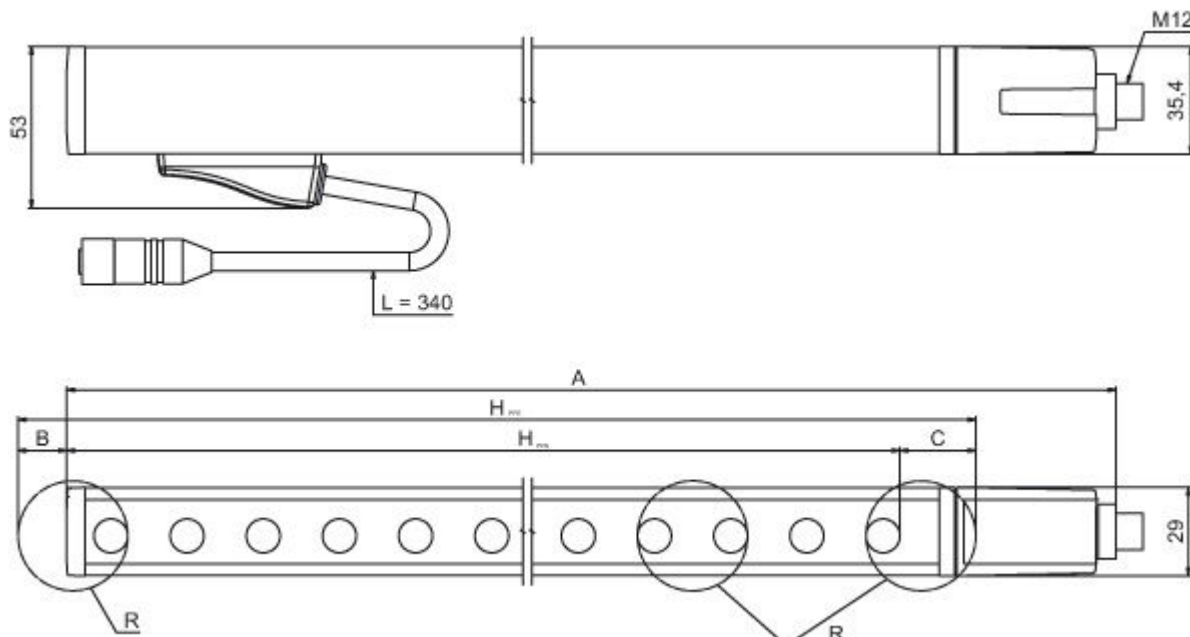
**Classification**

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

**Dimensioned drawings**

All dimensions in millimeters

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



$H_{PFE}$  Effective protective field height = 990 mm

$H_{PFN}$  Nominal protective field height = 900 mm

A Total height = 966 mm

B 50 mm

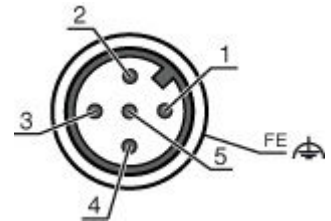
C 40 mm

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

## Electrical connection

| Connection 1       |                   |
|--------------------|-------------------|
| Type of connection | Connector         |
| Function           | Machine interface |
| Thread size        | M12               |
| Type               | 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       |   |
|--------------------|---|
| Type of connection | Cable with connector                            |
| Function           | Cascade, Guest Out<br>Cascade, Middle Guest Out |
| Cable length       | 330 mm  |
| Sheathing material | PUR   |
| Cable color        | Black   |
| Wire cross section | 0.14 mm <sup>2</sup>                            |
| Type of stranding  | Pair stranding (twisted pair)                   |
| Thread size        | M12   |
| Type               | Female  |
| Material           | Plastic   |
| No. of pins        | 8 -pin  |
| Encoding           | A-coded   |

## Operation and display

### LEDs

| 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  |
|---|----------|------------------|-------------------------------|--|
|  | 68017909 | MLC510R90-900H/A | Safety light curtain receiver | Resolution: 90 mm<br>Protective field height: 900 mm<br>Response time: 4 ms<br>Interface: AS-Interface Safety at Work<br>Connection: Connector, M12, Metal, 5 -pin |

## Part number code

Part designation: **MLCxyy-za-hhhhei-ooo**

| MLC | Safety light curtain   |
|-----|--|
| x   | <b>Series:</b><br>3: MLC 300<br>5: MLC 500   |
| yy  | <b>Function classes:</b><br>00: Transmitter<br>01: transmitter (AIDA)<br>02: Transmitter with test input<br>10: Basic receiver - automatic restart<br>11: basic receiver - automatic restart (AIDA)<br>20: Standard receiver - EDM/RES selectable<br>30: Extended receiver - blanking/muting |
| z   | <b>Device type:</b><br>T: transmitter<br>R: receiver   |
| a   | <b>Resolution:</b><br>14: 14 mm<br>20: 20 mm<br>30: 30 mm<br>40: 40 mm<br>90: 90 mm  |
| hhh | <b>Protective field height:</b><br>150 ... 3000: from 150 mm to 3000 mm  |
| e   | <b>Host/Guest (optional):</b><br>H: Host<br>MG: Middle Guest<br>G: Guest   |
| i   | <b>Interface (optional):</b><br>/A: AS-i   |
| ooo | <b>Option:</b><br>/V: high Vibration-proof<br>EX2: explosion protection (zones 2 + 22)<br>SPG: Smart Process Gating  |

### Note

A list with all available device types can be found on the Leuze electronic 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 - 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  |
|---|----------|-------------|----------------------|--|
|  | 429393   | BT-2HF      | Mounting bracket set | Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain<br>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               |
|---|----------|-------------|---------------|---------------------------|
|  | 520101   | AC-ALM-M    | Alignment aid | Housing material: Plastic |

## Services

|   | Part no. | Designation | Article                                   | Description  |
|---|----------|-------------|---|--|
|  | S981050  | CS40-I-140  | Safety inspection "Safety light barriers" | 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.<br>Restrictions: Travel costs and accommodation expenses charged separately 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.   |