



Figure can vary

**Part no.: 68016109**  
**MLC500T14-900H/A**  
**Safety light curtain transmitter**



## Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable receivers
- Part number code
- Notes
- Accessories

Part no.: 68016109 – MLC500T14-900H/A – Safety light curtain transmitter

## Technical data

| <b>Basic data</b>                      |                                                   |
|----------------------------------------|---------------------------------------------------|
| Series                                 | MLC 500                                           |
| Device type                            | Transmitter                                       |
| Cascading                              | Host                                              |
| Contains                               | 2x BT-NC sliding block                            |
| Application                            | Finger protection                                 |
| <b>Characteristic parameters</b>       |                                                   |
| Type                                   | 4 , IEC/EN 61496                                  |
| SIL                                    | 3 , IEC 61508                                     |
| SILCL                                  | 3 , IEC/EN 62061                                  |
| Mission time T <sub>M</sub>            | 20 years , EN ISO 13849-1                         |
| <b>Protective field data</b>           |                                                   |
| Resolution                             | 14 mm                                             |
| Protective field height                | 900 mm                                            |
| Operating range                        | 0 ... 6 m                                         |
| <b>Optical data</b>                    |                                                   |
| Number of beams                        | 90 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 <sub>B</sub>          | 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                       |
| <b>AS-i</b>                            |                                                   |
| 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                                         |

# Part no.: 68016109 – MLC500T14-900H/A – Safety light curtain transmitter

| <b>Connection</b>                          |                                                     |
|--------------------------------------------|-----------------------------------------------------|
| Number of connections                      | 2 Piece(s)                                          |
| <b>Connection 1</b>                        |                                                     |
| Type of connection                         | Connector                                           |
| Function                                   | Machine interface                                   |
| Thread size                                | M12                                                 |
| Material                                   | Metal                                               |
| No. of pins                                | 5 -pin                                              |
| <b>Connection 2</b>                        |                                                     |
| 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                                              |
| <b>Cable properties</b>                    |                                                     |
| 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                                               |
| <b>Mechanical data</b>                     |                                                     |
| 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 |
| <b>Operation and display</b>               |                                                     |
| Type of display                            | LED                                                 |
| Number of LEDs                             | 2 Piece(s)                                          |
| <b>Environmental data</b>                  |                                                     |
| Ambient temperature, operation             | 0 ... 55 °C                                         |
| Ambient temperature, storage               | -30 ... 70 °C                                       |
| Relative humidity (non-condensing)         | 0 ... 95 %                                          |
| <b>Certifications</b>                      |                                                     |
| 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                                      |

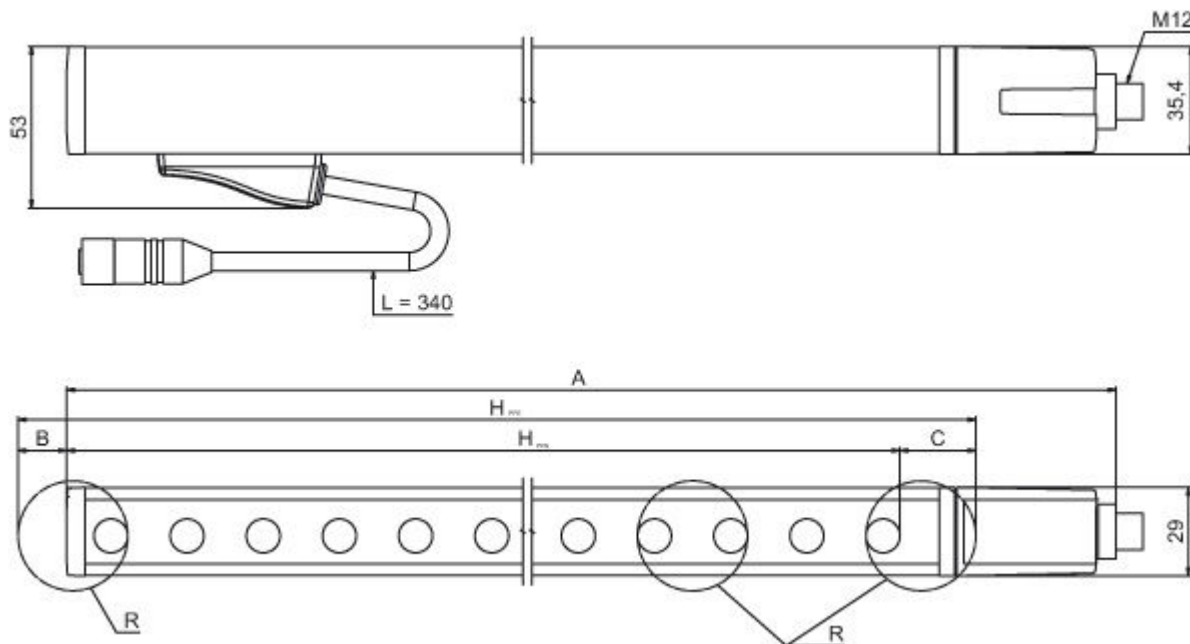
### Classification

|                       |          |
|-----------------------|----------|
| 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 = 912 mm

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

A Total height = 966 mm

B 6 mm

C 6 mm

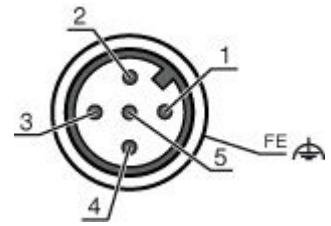
R Effective protective field height  $H_{PFE}$  goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

## 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           |

## Part no.: 68016109 – MLC500T14-900H/A – Safety light curtain transmitter

| 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                                                                                                                                                         |
|-------------------------------------------------------------------------------------|----------|------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 68017109 | MLC510R14-900H/A | Safety light curtain receiver | Resolution: 14 mm<br>Protective field height: 900 mm<br>Response time: 20 ms<br>Interface: AS-Interface Safety at Work<br>Connection: Connector, M12, Metal, 5 -pin |

## Part number code

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

## Part no.: 68016109 – MLC500T14-900H/A – Safety light curtain transmitter

| 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                                                                                                                                                                                                          |
| hhhh | <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).

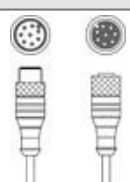
## Notes

### 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 |

Part no.: 68016109 – MLC500T14-900H/A – Safety light curtain transmitter

## 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.                                                   |