



Figure can vary

**Part no.: 68017918**  
**MLC510R90-1800H/A**  
**Safety light curtain receiver**



## Contents

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

## Technical data

| <b>Basic data</b>                      |   |
|--|---|
| Series                                 | MLC 500   |
| Device type                            | Receiver  |
| Cascading                              | Host  |
| Contains                               | 2x BT-NC sliding block                            |
| Application                            | Danger zone guarding<br>Access guarding           |
| <b>Characteristic parameters</b>       |   |
| 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>                       | 7.73E-09 per hour                                 |
| Mission time T <sub>M</sub>            | 20 years, EN ISO 13849-1                          |
| Category                               | 4, EN ISO 13849                                   |
| <b>Protective field data</b>           |   |
| Resolution                             | 90 mm   |
| Protective field height                | 1,800 mm  |
| <b>Optical data</b>                    |   |
| Number of beams                        | 24 Piece(s)                                       |
| Synchronization                        | Optical between transmitter and receiver          |
| <b>Electrical data</b>                 |   |
| Protective circuit                     | Overvoltage protection<br>Short circuit protected |
| <b>Performance data</b>                |   |
| Supply voltage                         | 26.5 ... 31.6 V                                   |
| Current consumption from AS-i circuit  | 150 mA  |
| <b>Timing</b>                          |   |
| Response time                          | 7 ms  |
| Restart delay time                     | 100 ms  |
| <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   |
| <b>Connection</b>                      |   |
| Number of connections                  | 2 Piece(s)  |

**Part no.: 68017918 – MLC510R90-1800H/A – Safety light curtain receiver**
**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, Middle Guest Out<br>Cascade, 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 1,866 mm x 35.4 mm                          |
| Housing material      | Metal, 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     | Mounting bracket<br>Groove mounting<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**

|            |          |
|------------|----------|
| eCl@ss 8.0 | 27272704 |
| eCl@ss 9.0 | 27272704 |
| ETIM 5.0   | EC002549 |

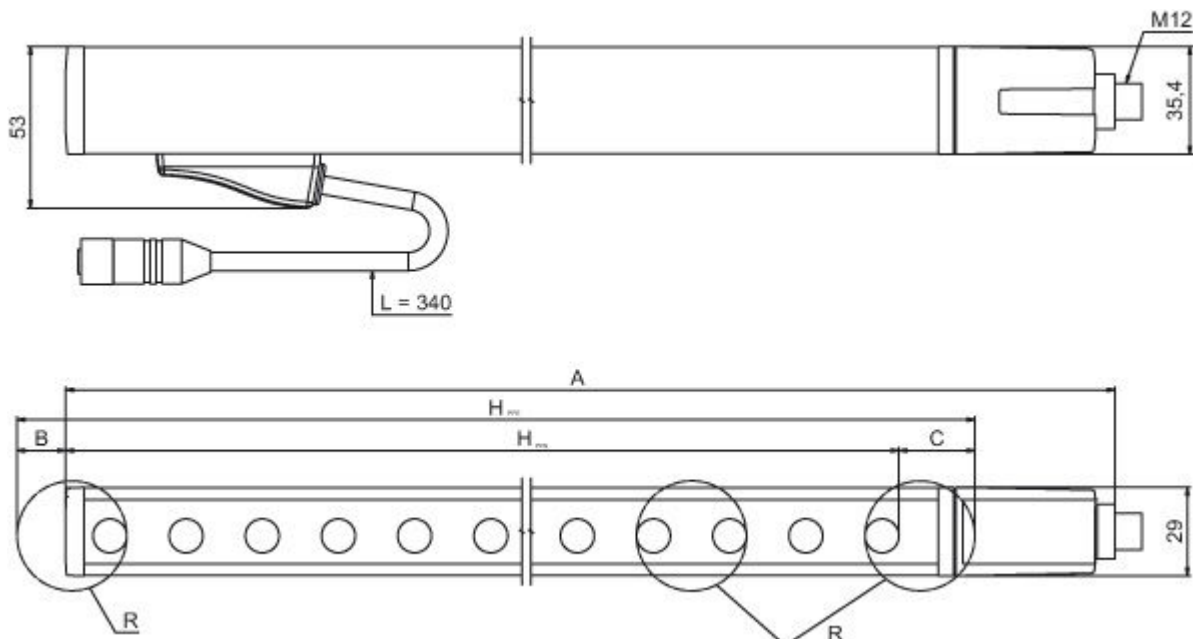
### Suitable transmitters

|   | Part no. | Designation       | Article                          | Description  |
|---|----------|-------------------|----------------------------------|--|
|  | 68016918 | MLC500T90-1800H/A | Safety light curtain transmitter | Resolution: 90 mm<br>Protective field height: 1,800 mm<br>Operating range: 0 ... 20 m<br>Interface: AS-Interface Safety at Work<br>Connection: Connector, M12, Metal, 5 -pin |

### Dimensioned drawings

All dimensions in millimeters

Calculation of the effective protective field height  $HPFE = HPFN + B + C$



- HPFE Effective protective field height = 1890 mm
- HPFN Nominal protective field height = 1800 mm
- A Total height = 1866 mm
- B 50 mm
- C 40 mm
- R Effective protective field height  $HPFE$  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, Middle Guest Out<br>Cascade, 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   | Protective field interrupted                         |
|     | Red, flashing, 1 Hz     | External error                                       |
|     | Red, flashing, 10 Hz    | Internal error                                       |
|     | Green, flashing, 1 Hz   | Protective field free, weak signal                   |
|     | Green, continuous light | Protective field free                                |
| 2   | Off                     | No voltage   |
|     | On                      | OSSD off, transmission channel C2                    |
|     | Green, continuous light | AS-i slave communicating with AS-i master            |
|     | Red, continuous light   | AS-i slave not communicating with AS-i master        |
|     | Yellow, flashing        | AS-i slave has invalid address 0                     |
|     | Red, flashing           | AS-i slave device error or AS-i connection defective |

Part no.: 68017918 – MLC510R90-1800H/A – Safety light curtain receiver

| LED | Display                         | Meaning         |
|-----|---------------------------------|-----------------|
|     | Red/green, flashing alternately | Periphery error |

## 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).

## Accessories



### Mounting technology - Mounting brackets

|   | Part no. | Designation | Article              | Description   |
|---|----------|-------------|----------------------|---|
|  | 429056   | BT-2L       | Mounting bracket set | Design of mounting device: Angle, L-shape<br>Mounting bracket, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |
|  | 429006   | BT-2L-HG    | Mounting device set  | Mounting bracket, at device: Screw type<br>Material: Metal  |






Part no.: 68017918 – MLC510R90-1800H/A – Safety light curtain receiver

|   | Part no. | Designation | Article              | Description   |
|---|----------|-------------|----------------------|---|
|  | 429057   | BT-2Z       | Mounting bracket set | Design of mounting device: Angle, Z-shape<br>Mounting bracket, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |
|  | 429005   | BT-L-HG     | Mounting device set  | Mounting bracket, at device: Screw type<br>Material: Metal  |

### 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>Mounting bracket, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic                        |
|  | 429394   | BT-2HF-S    | Mounting bracket set | Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain<br>Mounting bracket, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic<br>Shock absorber: Yes |

### Mounting technology - Other



|   | Part no. | Designation | Article              | Description  |
|---|----------|-------------|----------------------|--|
|  | 425740   | BT-10NC60   | Sliding block set    | Contains: 10x BT-NC sliding block<br>Bore hole 1: Ø 4.7 mm<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Mounting bracket, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal                                   |
|  | 425741   | BT-10NC64   | Sliding block set    | Contains: 10x BT-NC-M4-M6 sliding block<br>Bore hole 1: M4<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Mounting bracket, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal                                   |
|  | 425742   | BT-10NC65   | Sliding block set    | Contains: 10x BT-NC-M5-M6 sliding block<br>Bore hole 1: M5<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Mounting bracket, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal                                   |
|  | 424422   | BT-2SB10    | Mounting bracket set | Contains: 2x BT-SB10<br>Design of mounting device: Mounting clamp<br>Mounting bracket, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable, an der seitlichen C-Nut<br>Type of mounting device: Swiveling<br>Swivel range: -8 ... 8°<br>Material: Metal |
|  | 424423   | BT-2SB10-S  | Mounting bracket set | Contains: 2x BT-SB10-S<br>Design of mounting device: Mounting clamp<br>Mounting bracket, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable, an der seitlichen C-Nut<br>Swivel range: -8 ... 8°<br>Material: Metal<br>Shock absorber: Yes              |

Part no.: 68017918 – MLC510R90-1800H/A – Safety light curtain receiver

## Alignment aids

|   | Part no. | Designation | Article       | Description   |
|---|----------|-------------|---------------|---|
|  | 427300   | AC-ALM      | Alignment aid | Housing material: Plastic                           |
|  | 520101   | AC-ALM-M    | Alignment aid | Housing material: Plastic                           |
|  | 560020   | LA-78U      | Alignment aid | Light source: laser, Red<br>Housing material: Metal |

## Protective screens

|   | Part no. | Designation | Article              | Description   |
|---|----------|-------------|----------------------|---|
|   | 429039   | MLC-3PSF    | Mounting bracket set | Type of fastening: Clampable<br>Mounting device material: Metal |
|  | 347082   | MLC-PS1800  | Protective screen    | Protective field height: 1,800 mm<br>Material: PMMA, clear      |

## 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.