

## Technical data sheet

### Safety light curtain transmitter

Part no.: 68020404  
MLC500T40-450G



For illustration purposes only

#### Contents

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



## Technical data

### Basic data

|             |  |
|-------------|--|
| Series      | MLC 500  |
| Device type | Transmitter  |
| Cascading   | Guest  |
| Contains    | 2x BT-NC sliding block                                     |
| Application | Access guarding<br>Danger zone guarding<br>Hand protection |

### Characteristic parameters

|                             |                          |
|-----------------------------|--------------------------|
| 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 |

### Protective field data

|                         |            |
|-------------------------|------------|
| Resolution              | 40 mm      |
| Protective field height | 450 mm     |
| Operating range         | 0 ... 20 m |

### Optical data

|                          |   |
|--------------------------|---|
| Number of beams          | 18 Piece(s)                               |
| Light source             | LED, Infrared                             |
| Wavelength               | 940 nm                                    |
| Transmitted-signal shape | Pulsed                                    |
| LED risk group           | Exempt group (in acc. with EN 62471:2008) |

### Connection

|                       |  |
|-----------------------|--|
| Number of connections | 1 Piece(s)                                   |
| <b>Connection 1</b>   |  |
| Function              | Cascade, Host In<br>Cascade, Middle Guest In |
| Type of connection    | Cable with connector                         |
| Cable length          | 330 mm                                       |
| Sheathing material    | PUR  |
| Thread size           | M12  |
| Material              | Plastic                                      |
| No. of pins           | 8 -pin                                       |

### Mechanical data

|                       |  |
|-----------------------|--|
| Dimension (W x H x L) | 29 mm x 464 mm x 53 mm                               |
| Housing material      | Metal  |
| Metal housing         | Aluminum   |
| Lens cover material   | Plastic / PMMA                                       |
| Material of end caps  | Diecast zinc   |
| Net weight            | 573 g  |
| Housing color         | Yellow, RAL 1021                                     |
| Type of fastening     | Groove mounting<br>Mounting brackets<br>Swivel mount |

### 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<br>c UL 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 |
| 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  $H_{PFE} = H_{PFN} + B + C$




- $H_{PFE}$  Effective protective field height = 490 mm
- $H_{PFN}$  Nominal protective field height = 450 mm
- A** Total height = 464 mm
- B** 25 mm
- C** 15 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

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

Suitable receivers

|   | Part no. | Designation    | Article                       | Description  |
|---|----------|----------------|-------------------------------|--|
|  | 68021404 | MLC520R40-450G | Safety light curtain receiver | Resolution: 40 mm<br>Protective field height: 450 mm<br>Response time: 4 ms<br>Connection: Cable with connector, M12, Plastic, 8 -pin, 330 mm, PUR |

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 or gating<br>35: Extended receiver – Gating |
| 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<br>SPG RR: Smart Process Gating – Reduced resolution   |

| Note   |  |
|--|--|
|  | A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> . |

Notes

|  Observe intended use! |  |
|---|--|
|                         | <p>The product may only be put into operation by competent persons.</p> <p>Only use the product in accordance with its intended use.</p> |

## 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 - Mounting brackets

|  | Part no. | Designation | Article             | Description  |
|--|----------|-------------|---------------------|--|
|  | 429006   | BT-2L-HG    | Mounting device set | Mounting bracket, at device: Screw type<br>Material: Metal |

### Mounting technology - Swivel mounts

|  | Part no. | Designation | Article              | Description   |
|--|----------|-------------|----------------------|---|
|  | 429395   | BT-2HF-G    | 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               |
|--|----------|-------------|---------------|---------------------------|
|  | 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.<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. |
|  | 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.   |

Accessories

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