

Technical data sheet

Safety light curtain transmitter

Part no.: 68008104

MLC502T14-450



For illustration purposes only

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Technical data

Basic data

| | |
|-------------|------------------------|
| Series | MLC 500 |
| Device type | Transmitter |
| Contains | 2x BT-NC sliding block |
| Application | Finger protection |

Functions

| | |
|-----------|--|
| Functions | Test signal input Transmission channel changeover |
|-----------|--|

Characteristic parameters

| | |
|--------------------|--------------------------|
| Type | 4, IEC/EN IEC 61496 |
| SIL | 3, IEC 61508 |
| SIL | 3, IEC/EN IEC 62061 |
| Mission time T_M | 20 years, EN ISO 13849-1 |

Protective field data

| | |
|-------------------------|-----------|
| Resolution | 14 mm |
| Protective field height | 450 mm |
| Operating range | 0 ... 6 m |

Optical data

| | |
|--------------------------|---|
| 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_B | 24 V, DC, -20 ... 20 % |
| Current consumption, max. | 50 mA |
| Fuse | 2 A semi time-lag |

Inputs

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

Switching inputs

| | |
|------------------------------|-------------------------|
| Type | 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 |

Connection

| | |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

Connection 1

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

Cable properties

| | |
|--|----------------------|
| Permissible conductor cross section, type. | 0.25 mm ² |
| 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 516 mm x 35.4 mm |
| Housing material | Metal |
| Metal housing | Aluminum |
| Lens cover material | Plastic / PMMA |
| Material of end caps | Diecast zinc |
| Net weight | 600 g |
| Housing color | Yellow, RAL 1021 |
| Type of fastening | Groove mounting Mounting brackets Mounting on Device Column Swivel mount |

Operation and display

| | |
|-----------------|------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |

Environmental data

| | |
|------------------------------------|---------------|
| Ambient temperature, operation | -30 ... 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/s ² |
| Shock resistance | 100 m/s ² |
| 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 |
| ECLASS 16.0 | 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 |
| UNSPSC 26.08 | 46171620 |

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 = 462 mm

H_{PFN} Nominal protective field height = 450 mm

A Total height = 516 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

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

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1 | VIN1 | Brown |
| 2 | n.c. | White |
| 3 | VIN2 | Blue |
| 4 | Test in | Black |
| 5 | FE/SHIELD | Gray |



Circuit diagrams

Transmission channel C1, OSSDs deactivated on the receiver



Transmission channel C1, OSSDs activated on the receiver



Circuit diagrams

Transmission channel C2, OSSDs deactivated on the receiver



Transmission channel C2, OSSDs activated on the receiver



Operation and display

| LED | Display | Meaning |
|-----|---|-------------------------|
| 1 | Off | Device switched off |
| | Red, continuous light | Device error |
| | Green, continuous light | Normal operation |
| 2 | Green, flashing, 10 s long after switching on | Test input activated |
| | Off | Transmission channel C1 |
| | Green, continuous light | Transmission channel C2 |

Suitable receivers

| Part no. | Designation | Article | Description |
|----------|---------------|-------------------------------|--|
| 68001104 | MLC510R14-450 | Safety light curtain receiver | Function package: Basic Resolution: 14 mm Protective field height: 450 mm Response time: 11 ms Connection: Connector, M12, Metal, 5 -pin |

Part number code

Part designation: **MLCxyy-za-hhhh**e-ooo

| | |
|-------------|---|
| MLC | Safety light curtain |
| x | Series 3: MLC 300 5: MLC 500 |
| yy | 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 blanking/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 |
| e | Host/Guest (optional) H: Host MG: Middle Guest G: Guest |
| i | Interface (optional) /A: AS-i |
| ooo | Option /V: high Vibration-proof EX2: explosion protection (zones 2 + 22) SPG: Smart Process Gating SPG RR: Smart Process Gating – Reduced resolution |

Note

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

Notes

| | |
|------------------------------|---|
| Observe intended use! | |
| | <ul style="list-style-type: none"> The product may only be put into operation by competent persons. Only use the product in accordance with its intended use. |

Accessories

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|--|
| | 50133860 | KD S-M12-5A-P1-050 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5,000 mm 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 Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° 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. 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

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