

Technical data sheet

Safety light curtain receiver

Part no.: 68003313

MLC530R30-1350



For illustration purposes only

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Technical data

Basic data

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

Functions

| | |
|------------------|---|
| Function package | Extended |
| Functions | Combination of floating/fixed blanking, can be changed to "fixed blanking" during operation Configuration by means of wiring Contactor monitoring (EDM) Fixed blanking with 1-beam tolerance Fixed blanking without tolerance Fixed blanking without tolerance, can be activated/deactivated during operation Floating blanking, can be changed to "fixed blanking" during operation Integration of "contact-based safety circuit" Integration of "electronic safety-related switching outputs" MaxiScan Partial muting Reduced resolution, can be changed to "fixed blanking" during operation Start/restart interlock (RES) Timing controlled 2-sensor muting Transmission channel changeover |

Characteristic parameters

| | |
|-----------------------------|--------------------------|
| Type | 4, IEC/EN 61496 |
| SIL | 3, IEC 61508 |
| SILCL | 3, IEC/EN 62061 |
| Performance Level (PL) | e, EN ISO 13849-1 |
| PFH _D | 7.73E-09 per hour |
| Mission time T _M | 20 years, EN ISO 13849-1 |
| Category | 4, EN ISO 13849 |

Protective field data

| | |
|-------------------------|----------|
| Resolution | 30 mm |
| Protective field height | 1,350 mm |

Optical data

| | |
|-----------------|--|
| Synchronization | Optical between transmitter and receiver |
|-----------------|--|

Electrical data

| | |
|--------------------|---|
| Protective circuit | Overvoltage protection Short circuit protected |
|--------------------|---|

Performance data

| | |
|-------------------------------|------------------------|
| Supply voltage U _B | 24 V, DC, -20 ... 20 % |
| Current consumption, max. | 150 mA |
| Fuse | 2 A semi time-lag |

Inputs

| | |
|------------------------------------|------------|
| Number of digital switching inputs | 3 Piece(s) |
|------------------------------------|------------|

Switching inputs

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

Outputs

| | |
|--|------------|
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s) |
|--|------------|

Safety-related switching outputs

| | |
|------------------------------|--------------------------------------|
| Type | Safety-related switching output OSSD |
| Switching voltage high, min. | 18 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, typ. | 22.5 V |
| Voltage type | DC |
| Current load, max. | 380 mA |
| Load inductivity | 2,000 µH |
| Load capacity | 0.3 µF |
| Residual current, max. | 0.2 mA |
| Residual current, typ. | 0.002 mA |
| Voltage drop | 1.5 V |

Safety-related switching output 1

| | |
|-------------------|---------------------|
| Assignment | Connection 1, pin 5 |
| Switching element | Transistor, PNP |

Safety-related switching output 2

| | |
|-------------------|---------------------|
| Assignment | Connection 1, pin 6 |
| Switching element | Transistor, PNP |

Time behavior

| | |
|--------------------|--------|
| Response time | 13 ms |
| Restart delay time | 100 ms |

Connection

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

Connection 1

| | |
|--------------------|-------------------|
| Function | Machine interface |
| Type of connection | Connector |
| Thread size | M12 |
| Material | Metal |
| No. of pins | 8 -pin |

Cable properties

| | |
|--|----------------------|
| Permissible conductor cross section, typ. | 0.25 mm ² |
| Length of connection cable, max. | 100 m |
| Permissible cable resistance to load, max. | 200 Ω |

Technical data

Mechanical data

| | |
|-----------------------|----------------------------|
| Dimension (W x H x L) | 29 mm x 1,416 mm x 35.4 mm |
| Housing material | Metal |
| Metal housing | Aluminum |
| Lens cover material | Plastic / PMMA |
| Material of end caps | Diecast zinc |
| Net weight | 1,500 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 | 7-segment display |
| | LED |
| Number of LEDs | 3 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 |
| Certifications | c TÜV NRTL US |
| | c UL US |
| | KCs |
| | 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 |
| ETIM 5.0 | EC002549 |
| ETIM 6.0 | EC002549 |
| ETIM 7.0 | EC002549 |
| ETIM 8.0 | EC002549 |
| ETIM 9.0 | 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 = 1378 mm

H_{PFN} Nominal protective field height = 1350 mm

A Total height = 1416 mm

B 19 mm
- C 9 mm

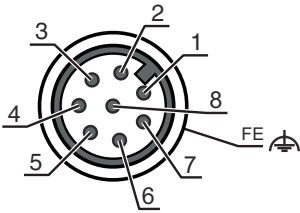
R Effective protective field height H_{PFE} goes beyond the dimensions of the optics area to the outer borders of the circles labeled with R.

Electrical connection

Connection 1

| | |
|--------------------|-------------------|
| Function | Machine interface |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |
| Connector housing | FE/SHIELD |

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1 | IO1 | White |
| 2 | VIN1 | Brown |
| 3 | IN3 | Green |
| 4 | IN4 | Yellow |
| 5 | OSSD1 | Gray |
| 6 | OSSD2 | Pink |
| 7 | VIN2 | Blue |
| 8 | IN8 | Red |



Circuit diagrams

Connection diagram receiver



Operating mode 1: circuit diagram example of linkage with position switch for monitoring for the presence of machine parts with fixed blanking



- 1 Linked safety sensor, e.g. safety door switch
- 2 Key switch for teaching ("teach key switch")

Circuit diagrams

Operating mode 2: circuit diagram example of linkage of electronic safety-related switching outputs for the combined monitoring of access points and areas



Operating mode 3: circuit diagram example of a linked, contact-based position switch for monitoring of the blanked object and a changeover switch for switching between function groups FG1 and FG2



- 1 Changeover key switch for switching between function groups FG1 and FG2
- 2 Key switch for teaching blanking areas

Circuit diagrams

Operating mode 4: circuit diagram example for timing controlled 2-sensor muting



Operation and display

| LED | Display | Meaning |
|-----|-----------------------------|---|
| 1 | Off | Device switched off |
| | Red, continuous light | OSSD off |
| | Red, flashing, 1 Hz | External error |
| | Red, flashing, 10 Hz | Internal error |
| | Green, flashing, 1 Hz | OSSD on, weak signal |
| | Green, continuous light | OSSD on |
| 2 | Off | RES deactivated or RES activated and enabled or RES blocked and protective field interrupted |
| | Yellow, continuous light | RES activated and blocked but ready to be unlocked - protective field free and linked sensor is enabled if applicable |
| | Yellow, flashing | Upstream safety circuit opened |
| | Yellow, flashing (1x or 2x) | Changeover of the upstream safety circuit |
| 3 | Off | No special function (blanking, muting, etc.) active |
| | Blue, continuous light | Protective field parameter (blanking) correctly taught |
| | Blue, flashing, 1 Hz | Muting active |
| | Blue, short flashing | Teaching of protective field parameters or muting restart required or muting override active |
| | Blue, flashing, 10 Hz | Error during teaching of protective field parameters |

Suitable transmitters

| Part no. | Designation | Article | Description |
|----------|----------------|----------------------------------|--|
| 68000313 | MLC500T30-1350 | Safety light curtain transmitter | Resolution: 30 mm Protective field height: 1,350 mm Operating range: 0 ... 10 m Connection: Connector, M12, Metal, 5 -pin |

Part number code

Part designation: MLCxyy-za-hhhhei-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 |
| 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 |


Note



A list with all available device types can be found on the Leuze website at 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 - Connection cables

| | Part no. | Designation | Article | Description |
|---|----------|--------------------|------------------|--|
|  | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -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 | Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, 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



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