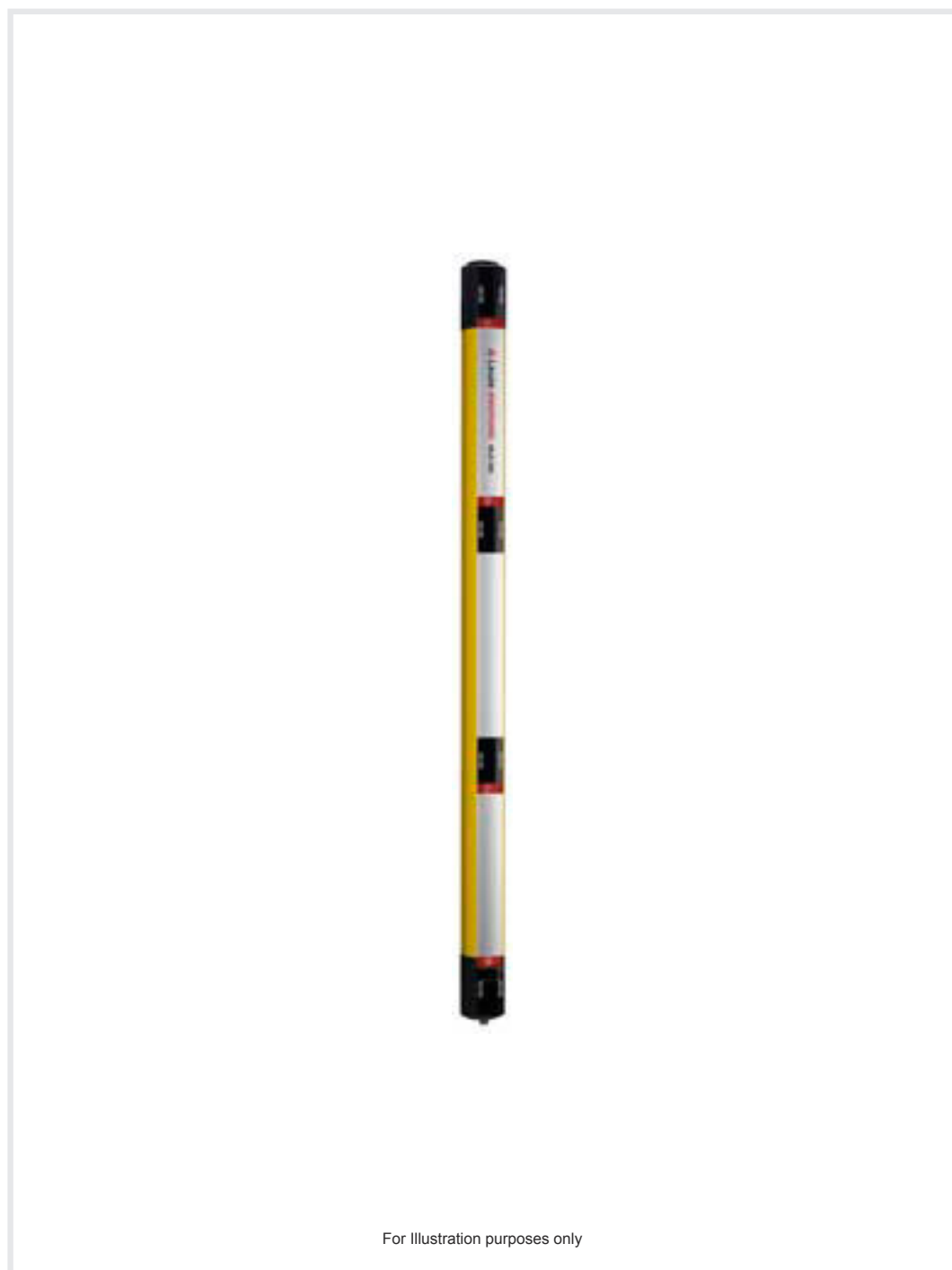


Technical data sheet

Multiple light beam safety device receiver

Part no.: 66555300

MLD520-R4LM



Contents

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



Technical data

Basic data

| | |
|-------------|----------|
| Series | MLD 500 |
| Device type | Receiver |

Special version

| | |
|-----------------|---------------------------------------------------------------------------|
| Special version | Integrated status indicator Reflective element for laser alignment aid |
|-----------------|---------------------------------------------------------------------------|

Functions

| | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Functions | Configuration by means of wiring Contactor monitoring (EDM), selectable Start/restart interlock (RES), selectable |
| Reflective element for laser alignment aid | Yes |
| Integrated muting indicator | No |
| Integrated status indicator | Yes |

Characteristic parameters

| | |
|-----------------------------|---------------------------|
| Type | 4, IEC/EN 61496 |
| SIL | 3, IEC 61508 |
| SILCL | 3, IEC/EN 62061 |
| Performance Level (PL) | e, EN ISO 13849-1 |
| MTTF _d | 204 years, EN ISO 13849-1 |
| PFH _D | 6.6E-09 per hour |
| Mission time T _M | 20 years, EN ISO 13849-1 |
| Category | 4, EN ISO 13849 |

Optical data

| | |
|-----------------|------------|
| Number of beams | 4 Piece(s) |
| Beam spacing | 300 mm |

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, Without external load |
| Fuse | External with max. 3 A |

Inputs

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

Switching inputs

| | |
|------------------------------|-------------------------|
| Type | Digital switching input |
| Switching voltage high, min. | 18.2 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, type. | 23 V |
| Voltage type | DC |
| Switching current, max. | 5 mA |

Digital switching input 1

| | |
|------------|-------------------------------------------------|
| Assignment | Connection 1, pin 1 |
| Function | Control input for start/restart interlock (RES) |

Digital switching input 2

| | |
|------------|----------------------------------------------|
| Assignment | Connection 1, pin 3 |
| Function | Control input for contactor monitoring (EDM) |

Digital switching input 3

| | |
|------------|-------------------------------------------------|
| Assignment | Connection 1, pin 4 |
| Function | Control input for start/restart interlock (RES) |

Outputs

| | |
|----------------------------------------------------|------------|
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s) |
| Number of digital switching outputs | 1 Piece(s) |

Safety-related switching outputs

| | |
|------------------------------|--------------------------------------|
| Type | Safety-related switching output OSSD |
| Switching voltage high, min. | 18.2 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, type. | 23 V |
| Voltage type | DC |
| Current load, max. | 380 mA |
| Load inductivity | 2,200,000 µH |
| Load capacity | 0.3 µF |
| Residual current, max. | 0.2 mA |
| Residual current, type. | 0.002 mA |
| Voltage drop | 1 V |

Safety-related switching output 1

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

Safety-related switching output 2

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

Switching outputs

| | |
|------------------------------|--------------------------|
| Type | Digital switching output |
| Switching voltage high, min. | 18.2 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, type. | 23 V |
| Voltage type | DC |

Switching output 1

| | |
|-------------------|--------------------------------|
| Assignment | Connection 1, pin 1 |
| Switching element | Transistor, PNP |
| Function | "State of OSSDs" signal output |

Time behavior

| | |
|--------------------|--------|
| Response time | 25 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, type. | 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) | 52 mm x 1,000 mm x 64.7 mm |
| Housing material | Metal |
| Metal housing | Aluminum |
| Lens cover material | Plastic / PMMA |
| Material of end caps | Diecast zinc |
| Net weight | 2,200 g |
| Housing color | Yellow, RAL 1021 |
| Type of fastening | Groove mounting Swivel mount |

Operation and display

| | |
|-----------------|------------|
| Type of display | LED |
| Number of LEDs | 1 Piece(s) |

Environmental data

| | |
|------------------------------------|---------------|
| Ambient temperature, operation | -30 ... 55 °C |
| Ambient temperature, storage | -40 ... 75 °C |
| Relative humidity (non-condensing) | 0 ... 95 % |

Certifications

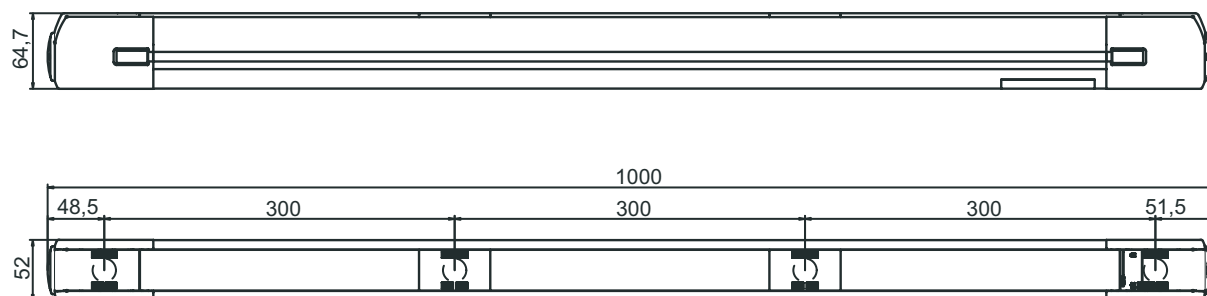
| | |
|----------------------|--------------------------------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Approvals | c CSA US c TÜV NRTL US TÜV Süd |
| US patents | US 6,418,546 B US 7,741,595 B |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4 | 27272703 |
| ECLASS 8.0 | 27272703 |
| ECLASS 9.0 | 27272703 |
| ECLASS 10.0 | 27272703 |
| ECLASS 12.0 | 27272703 |
| ECLASS 13.0 | 27272703 |
| ECLASS 14.0 | 27272703 |
| ECLASS 15.0 | 27272703 |
| ECLASS 16.0 | 27272703 |
| ETIM 5.0 | EC001832 |
| ETIM 6.0 | EC001832 |
| ETIM 7.0 | EC001832 |
| ETIM 8.0 | EC001832 |
| ETIM 9.0 | EC001832 |
| ETIM 10.0 | EC001832 |
| UNSPSC 26.08 | 32151804 |

Dimensioned drawings

All dimensions in millimeters



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 |


| Pin | Pin assignment | Conductor color |
|-----|------------------------|-----------------|
| 1 | RES/OSSD status signal | White |
| 2 | +24 V | Brown |
| 3 | EDM | Green |
| 4 | MODE | Yellow |
| 5 | OSSD2 | Gray |
| 6 | OSSD1 | Pink |
| 7 | 0 V | Blue |
| 8 | n.c. | Red |



Operation and display

| LED | Display | Meaning |
|-----|--------------------------|------------------------------------------------------|
| 1 | Red, continuous light | OSSD off. |
| | Green, continuous light | OSSD on |
| | Red, flashing, 1 Hz | External error |
| | Red, flashing, 10 Hz | Internal error |
| | Green, flashing, 1 Hz | Weak signal, device not optimally aligned or soiled. |
| 2 | Yellow, continuous light | Start/restart interlock locked. |

Suitable transmitters

| | Part no. | Designation | Article | Description |
|-------------------------------------------------------------------------------------|----------|-------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 66502300 | MLD500-T4L | Multiple light beam safety device transmitter | Special version: Integrated laser alignment aid Operating range: 0.5 ... 50 m Number of beams: 4 Piece(s) Beam spacing: 300 mm Connection: Connector, M12, Metal, 5 -pin |

Part number code

Part designation: MLDxyy-zab/t

MLD Multiple light beam safety device

| | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| x | Series 3: MLD 300 5: MLD 500 |
| yy | Function classes 00: transmitter 10: automatic restart 12: external testing 20: EDM/RES 30: muting 35: timing controlled 4-sensor muting |

Part number code

| | |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MLD | Multiple light beam safety device |
| z | Device type T: transmitter R: receiver RT: transceiver xT: transmitter with high range xR: receiver for high range |
| a | Number of beams |
| b | Option L: integrated laser alignment aid (for transmitter/receiver) M: integrated status indicator (MLD 320, MLD 520) or integrated status and muting indicator (MLD 330, MLD 335, MLD 510/A, MLD 530, MLD 535) E: Connection socket for external muting indicator (AS-i models only) |
| /t | Safety-related switching outputs (OSSDs), connection technology -: transistor output, M12 plug A: Integrated AS-i interface, M12 plug, (safety bus system) |





Note



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

Accessories

Connection technology - Connection cables



| | Part no. | Designation | Article | Description |
|-------------------------------------------------------------------------------------|----------|--------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50135129 | KD S-M12-8A-P1-100 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR |
|  | 50135130 | KD S-M12-8A-P1-150 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR |
|  | 50135131 | KD S-M12-8A-P1-250 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 25,000 mm Sheathing material: PUR |
|  | 50135132 | KD S-M12-8A-P1-500 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 50,000 mm Sheathing material: PUR |

Accessories

Mounting technology - Swivel mounts

| | Part no. | Designation | Article | Description |
|----------------------------------------------------------------------------------|----------|----------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 560340 | BT-SET-240BC | Mounting bracket set | Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal Shock absorber: No |
|  | 540350 | BT-SET-240BC-E | Mounting bracket set | Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 240° Material: Metal, Plastic Shock absorber: No |

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.