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Part no.: 66533102
MLD510-R2E/A
Multiple light beam safety device receiver



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 design | |
| Special design | Connection socket for external muting indicator |
| Functions | |
| Functions | Automatic restart |
| Reflective element for laser alignment aid | No |
| Integrated muting indicator | No |
| 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 | 2 Piece(s) |
| Beam spacing | 500 mm |
| Electrical data | |
| Protective circuit | Overvoltage protection Short circuit protected |
| Performance data | |
| Supply voltage U _B | 26.5 ... 31.6 V |
| Current consumption from AS-i circuit | 50 mA |
| Outputs | |
| Number of digital switching outputs | 1 Piece(s) |
| Switching outputs | |
| Type | Digital switching output |
| Switching voltage high, min. | 18.2 V |
| Switching voltage low, max. | 2.5 V |
| Switching voltage, typ. | 23 V |
| Voltage type | DC |
| Switching output 1 | |
| Assignment | Connection 2, pin 5 |
| Switching element | Transistor , PNP |
| Function | "Muting state" signal output |
| Timing | |
| Response time | 30 ms |
| Restart delay time | 100 ms |

Part no.: 66533102 – MLD510-R2E/A – Multiple light beam safety device

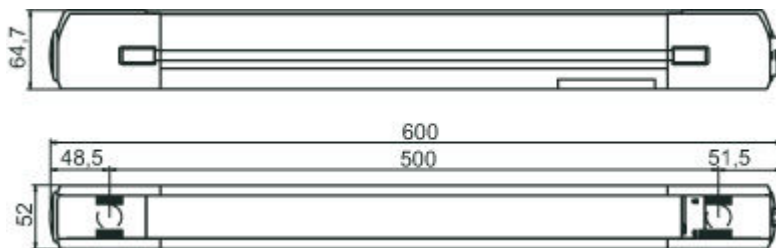
| Interface | |
|--|--------------------------------------|
| Type | AS-Interface Safety at Work |
| AS-i | |
| Function | Process |
| AS-i profile | Safe slave |
| Slave address | 1..31 programmable, default=0 |
| Cycle time acc. to AS-i specifications | Max. 5 ms |
| Connection | |
| Number of connections | 2 Piece(s) |
| Connection 1 | |
| Type of connection | Connector |
| Function | Machine interface |
| Thread size | M12 |
| Material | Metal |
| No. of pins | 5 -pin |
| Connection 2 | |
| Type of connection | Connector |
| Function | External muting indicator |
| Thread size | M12 |
| Material | Metal |
| No. of pins | 5 -pin |
| Mechanical data | |
| Dimension (W x H x L) | 52 mm x 600 mm x 64.7 mm |
| Housing material | Metal , Aluminum |
| Lens cover material | Plastic / PMMA |
| Material of end caps | Diecast zinc |
| Net weight | 1,400 g |
| Housing color | Yellow, RAL 1021 |
| Type of fastening | Groove mounting 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 | -40 ... 75 °C |
| Relative humidity (non-condensing) | 0 ... 95 % |
| Certifications | |
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | 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 |
| eCl@ss 8.0 | 27272703 |
| eCl@ss 9.0 | 27272703 |
| ETIM 5.0 | EC001832 |
| ETIM 6.0 | EC001832 |

Dimensioned drawings

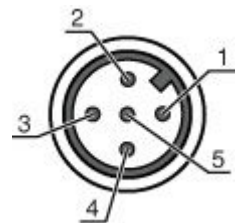
All dimensions in millimeters



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 | Conductor color |
|-----|----------------|-----------------|
| 1 | AS-i+ | Brown |
| 2 | n.c. | White |
| 3 | AS-i- | Blue |
| 4 | n.c. | Black |
| 5 | n.c. | Gray |



| Connection 2 | |
|--------------------|---------------------------|
| Type of connection | Connector |
| Function | External muting indicator |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Part no.: 66533102 – MLD510-R2E/A – Multiple light beam safety device


| Pin | Pin assignment |
|-----|-----------------------------|
| 1 | AS-i+ |
| 2 | 0 V (auxiliary supply) |
| 3 | AS-i- |
| 4 | +24 V DC (auxiliary supply) |
| 5 | n.c. |

Operation and display

LEDs

| 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. |
| | Off | No voltage on AS-i cable. |
| | Red, continuous light | AS-i slave not communicating with AS-i master |
| | Yellow, flashing | AS-i slave has invalid address 0 |
| | Red/green, flashing alternately | AS-i slave device error or AS-i connection defective |
| | Green, continuous light, flashing red at the same time | Periphery error |
| | Green, continuous light | AS-i slave communicating with AS-i master |

Suitable transmitters

| | Part no. | Designation | Article | Description |
|---|----------|-------------|---|---|
|  | 66501101 | MLD500-T2/A | Multiple light beam safety device transmitter | Operating range: 0.5 ... 50 m Number of beams: 2 Piece(s) Beam spacing: 500 mm Type of interface: AS-Interface Safety at Work 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 no.: 66533102 – MLD510-R2E/A – Multiple light beam safety device



| 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 electronic website at www.leuze.com.

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 |
|  | 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 |

Services

| | Part no. | Designation | Article | Description |
|---|----------|-------------|---|--|
|  | S981050 | CS40-I-140 | Safety inspection "Safety light barriers" | 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. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure. |
|  | 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. Restrictions: Max. 2 h., no mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment. |