



Figure can vary

**Part no.: 66502001**  
**MLD500-T1L/A**  
**Single beam safety device transmitter**



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- Technical data
- Dimensioned drawings
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- Operation and display
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## Technical data

| <b>Basic data</b>                      |   |
|--|---|
| Series                                 | MLD 500                                 |
| <b>Special design</b>                  |   |
| Special design                         | Integrated laser alignment aid          |
| <b>Functions</b>                       |   |
| Functions                              | Range reduction                         |
| Integrated laser alignment aid         | Yes                                     |
| <b>Characteristic parameters</b>       |   |
| Type                                   | 4 , IEC/EN 61496                        |
| SIL                                    | 3 , IEC 61508                           |
| SILCL                                  | 3 , IEC/EN 62061                        |
| Performance Level (PL)                 | e , EN ISO 13849-1:2008                 |
| MTTF <sub>d</sub>                      | 204 years , EN ISO 13849-1              |
| Mission time T <sub>M</sub>            | 20 years , EN ISO 13849-1               |
| Category                               | 4 , EN ISO 13849:2008                   |
| <b>Protective field data</b>           |   |
| Operating range                        | 0.5 ... 70 m                            |
| <b>Optical data</b>                    |   |
| Light source                           | LED , Infrared                          |
| LED light wavelength                   | 850 nm                                  |
| Transmitted-signal shape               | Pulsed                                  |
| LED group                              | Exempt group in acc. with EN 62471:2008 |
| Opening angle, max.                    | -2.5 ... 2.5 °                          |
| <b>Electrical data</b>                 |   |
| <b>Performance data</b>                |   |
| Supply voltage U <sub>B</sub>          | 26.5 ... 31.6 V                         |
| Current consumption from AS-i circuit  | 50 mA                                   |
| <b>Interface</b>                       |   |
| Type                                   | AS-Interface Safety at Work             |
| <b>AS-i</b>                            |   |
| Function                               | Process                                 |
| AS-i profile                           | S-7.B.1                                 |
| Slave address                          | 1..31 programmable, default=0           |
| Cycle time acc. to AS-i specifications | Max. 5 ms                               |
| <b>Connection</b>                      |   |
| Number of connections                  | 1 Piece(s)                              |

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**Connection 1**

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

**Mechanical data**

|                       |                                 |
|-----------------------|---------------------------------|
| Design                | Cubic                           |
| Dimension (W x H x L) | 52 mm x 193 mm x 64.7 mm        |
| Housing material      | Metal , 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<br>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**

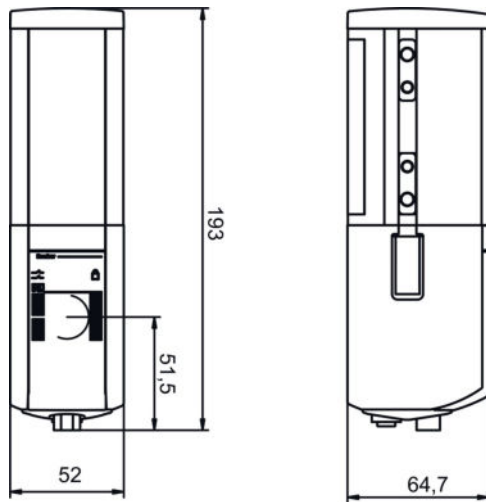
|                      |                                      |
|----------------------|--------------------------------------|
| Degree of protection | IP 67                                |
| Protection class     | III                                  |
| Certifications       | c CSA US<br>c TÜV NRTL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

**Classification**

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27272701 |
| eCl@ss 9.0            | 27272701 |
| ETIM 5.0              | EC001831 |
| ETIM 6.0              | EC001831 |

## Dimensioned drawings

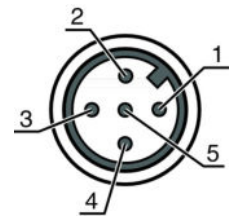
All dimensions in millimeters



## 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            |





## Operation and display

### LEDs

| LEDs per light axis     | Meaning                     |
|-------------------------|-----------------------------|
| Green, continuous light | Transmitted beam active     |
| Off                     | Transmitted beam not active |

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## Suitable receivers

|   | Part no. | Designation   | Article                            | Description   |
|---|----------|---------------|------------------------------------|---|
|  | 66536001 | MLD510-R1L/A  | Single beam safety device receiver | Response time: 30 ms<br>Type of interface: AS-Interface Safety at Work<br>Connection: Connector, M12, Metal, 5 -pin<br>Special design: Reflective element for laser alignment aid   |
|  | 66536002 | MLD510-R1LE/A | Single beam safety device receiver | Response time: 30 ms<br>Type of interface: AS-Interface Safety at Work<br>Connection: Connector, M12, Metal, 5 -pin<br>Special design: Reflective element for laser alignment aid,<br>Connection socket for external muting indicator |

## Part number code

Part designation: **MLDxyy-zab/t**

| MLD | Multiple light beam safety device  |
|-----|--|
| x   | <b>Series:</b><br>3: MLD 300<br>5: MLD 500   |
| yy  | <b>Function classes:</b><br>00: transmitter<br>10: automatic restart<br>12: external testing<br>20: EDM/RES<br>30: muting<br>35: timing controlled 4-sensor muting   |
| z   | <b>Device type:</b><br>T: transmitter<br>R: receiver<br>RT: transceiver<br>xT: transmitter with high range<br>xR: receiver for high range  |
| a   | Number of beams  |
| b   | <b>Option:</b><br>L: integrated laser alignment aid (for transmitter/receiver)<br>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)<br>E: connection socket for external muting indicator (AS-i models only) |
| /t  | <b>Safety-related switching outputs (OSSDs), connection technology:</b><br>-: transistor output, M12 plug<br>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](http://www.leuze.com).


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## Accessories



### Connection technology - Connection cables

|   | Part no. | Designation        | Article          | Description   |
|---|----------|--------------------|------------------|---|
|  | 50133859 | KD S-M12-5A-P1-020 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 2,000 mm<br>Sheathing material: PUR  |
|  | 50137014 | KD S-M12-5A-P1-150 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 15,000 mm<br>Sheathing material: PUR |
|  | 50136146 | KD S-M12-5A-P1-250 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 10,000 mm<br>Sheathing material: PVC |

### Muting - Mounting systems

|   | Part no. | Designation | Article              | Description   |
|---|----------|-------------|----------------------|---|
|  | 424421   | BT-SB10     | Mounting bracket set | Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Swiveling<br>Swivel range: -8 ... 8 °<br>Material: Metal |

## 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.<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.<br>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.<br>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.<br>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.   |

### Note

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