



Figure can vary

**Part no.: 66055600**  
**MLD320-XR3LM**  
**Multiple light beam safety device receiver**



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## Technical data

| <b>Basic data</b>                |  |
|----------------------------------|--|
| Series                           | MLD 300  |
| Device type                      | Receiver   |
| <b>Special design</b>            |  |
| Special design                   | Integrated status indicator<br>Reflective element for laser alignment aid            |
| <b>Functions</b>                 |  |
| Functions                        | Contacting monitoring (EDM), selectable<br>Start/restart interlock (RES), selectable |
| <b>Characteristic parameters</b> |  |
| Type                             | 2 , IEC/EN 61496   |
| SIL                              | 1 , IEC 61508  |
| SILCL                            | 1 , IEC/EN 62061   |
| Performance Level (PL)           | c , EN ISO 13849-1   |
| MTTF <sub>d</sub>                | 204 years , EN ISO 13849-1   |
| PFH <sub>D</sub>                 | 1.2E-08 per hour   |
| Mission time T <sub>M</sub>      | 20 years , EN ISO 13849-1  |
| Category                         | 3 , EN ISO 13849   |
| <b>Optical data</b>              |  |
| Number of beams                  | 3 Piece(s)   |
| Beam spacing                     | 400 mm   |
| <b>Electrical data</b>           |  |
| Protective circuit               | Overvoltage protection<br>Short circuit protected                                    |
| <b>Performance data</b>          |  |
| Supply voltage U <sub>B</sub>    | 24 V , DC , -20 ... 20 %   |
| Current consumption, max.        | 150 mA , Without external load   |
| Fuse                             | External with max. 3 A   |

| <b>Inputs</b>                                      |   |
|--|---|
| Number of digital switching inputs                 | 3 Piece(s)                                      |
| <b>Switching inputs</b>                            |   |
| Type   | Digital switching input                         |
| Switching voltage high, min.                       | 18.2 V  |
| Switching voltage low, max.                        | 2.5 V   |
| Switching voltage, typ.                            | 23 V  |
| Voltage type                                       | DC  |
| Switching current, max.                            | 5 mA  |
| <b>Digital switching input 1</b>                   |   |
| Assignment   | Connection 1, pin 1                             |
| Function   | Control input for start/restart interlock (RES) |
| <b>Digital switching input 2</b>                   |   |
| Assignment   | Connection 1, pin 3                             |
| Function   | Control input for contactor monitoring (EDM)    |
| <b>Digital switching input 3</b>                   |   |
| Assignment   | Connection 1, pin 4                             |
| Function   | Control input for start/restart interlock (RES) |
| <b>Outputs</b>                                     |   |
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s)                                      |
| Number of digital switching outputs                | 1 Piece(s)                                      |
| <b>Safety-related switching outputs</b>            |   |
| Type   | Safety-related switching output OSSD            |
| Switching voltage high, min.                       | 18.2 V  |
| Switching voltage low, max.                        | 2.5 V   |
| Switching voltage, typ.                            | 23 V  |
| Voltage type                                       | DC  |
| Current load, max.                                 | 380 mA  |
| Load inductivity                                   | 2,200,000 $\mu$ H                               |
| Load capacity                                      | 0.3 $\mu$ F                                     |
| Residual current, max.                             | 0.2 mA  |
| Residual current, typ.                             | 0.002 mA  |
| Voltage drop                                       | 1 V   |
| <b>Safety-related switching output 1</b>           |   |
| Assignment   | Connection 1, pin 6                             |
| Switching element                                  | Transistor , PNP                                |
| <b>Safety-related switching output 2</b>           |   |
| Assignment   | Connection 1, pin 5                             |
| Switching element                                  | Transistor , PNP                                |
| <b>Switching outputs</b>                           |   |
| 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  |
| <b>Switching output 1</b>                          |   |
| Assignment   | Connection 1, pin 1                             |
| Switching element                                  | Transistor , PNP                                |

**Timing**

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|                    |        |
|--------------------|--------|
| Response time      | 25 ms  |
| Restart delay time | 100 ms |

**Connection**

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

**Cable properties**

|   |                      |
|---|----------------------|
| Permissible conductor cross section, typ. | 0.25 mm <sup>2</sup> |
| Length of connection cable, max.          | 100 m                |

**Connection 1**

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

**Cable properties**

|  |       |
|--|-------|
| Permissible cable resistance to load, max. | 200 Ω |
|--|-------|

**Mechanical data**

|                       |                                 |
|-----------------------|---------------------------------|
| Dimension (W x H x L) | 52 mm x 900 mm x 64.7 mm        |
| Housing material      | Metal , Aluminum                |
| Lens cover material   | Plastic / PMMA                  |
| Material of end caps  | Diecast zinc                    |
| Net weight            | 2,000 g                         |
| Housing color         | Yellow, RAL 1021                |
| Type of fastening     | Groove mounting<br>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**

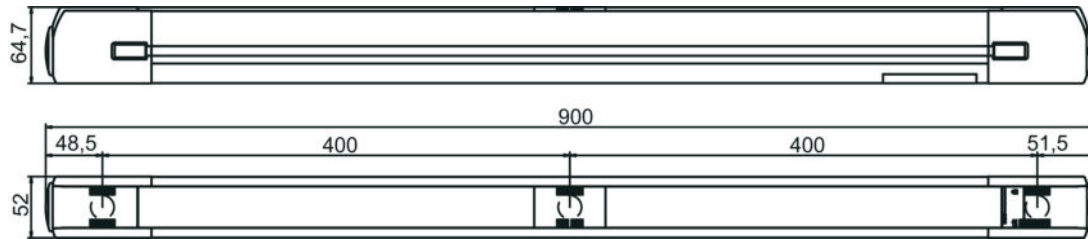
|                      |                                      |
|----------------------|--------------------------------------|
| Degree of protection | IP 67                                |
| Protection class     | III                                  |
| Certifications       | c CSA US<br>c TÜV NRTL 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            | 27272703 |
| eCl@ss 9.0            | 27272703 |
| ETIM 5.0              | EC001832 |
| ETIM 6.0              | EC001832 |

## Dimensioned drawings

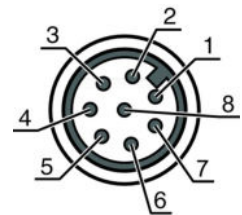
All dimensions in millimeters



## 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   | +24V                   | Brown           |
| 3   | EDM                    | Green           |
| 4   | MODE                   | Yellow          |
| 5   | OSSD2                  | Gray            |
| 6   | OSSD1                  | Pink            |
| 7   | 0 V                    | Blue            |
| 8   | n.c.                   | Red             |




## 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.                      |

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## Suitable transmitters

|   | Part no. | Designation | Article                                       | Description  |
|---|----------|-------------|---|--|
|  | 66002600 | MLD300-XT3L | Multiple light beam safety device transmitter | Operating range: 20 ... 70 m<br>Number of beams: 3 Piece(s)<br>Beam spacing: 400 mm<br>Connection: Connector, M12, Metal, 5 -pin<br>Special design: Integrated laser alignment aid |

## Part number code

Part designation: **MLD**xxy-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 website at [www.leuze.com](http://www.leuze.com).

## Accessories

## 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. |

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|   | Part no. | Designation | Article          | Description   |
|---|----------|-------------|------------------|---|
|  | S981046  | CS40-S-140  | Start-up support | <p>Details: For safety devices including stopping time measurement and initial inspection.</p> <p>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.</p> <p>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.</p> |

**Note**

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