



the sensor people





Part no.: 68602039 MLC520-S-24-390 Safety sensor set









Figure can vary

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### **Technical data**

| Basic data                    |  |  |  |
|-------------------------------|--|--|--|
| Series                        | MLC 520S   |  |  |
| Device type                   | Set (transmitter and receiver)   |  |  |
| Contains                      | 4x BT-MLC-S-C mounting brackets 4x BT-MLC-S-O mounting brackets                  |  |  |
| Application                   | Hand protection  |  |  |
| Functions                     |  |  |  |
| Functions                     | Automatic start/restart Contactor monitoring (EDM) Start/restart interlock (RES) |  |  |
| Characteristic parameters     |  |  |  |
| Туре                          | 4 , IEC/EN 61496   |  |  |
| SIL                           | 3 , IEC 61508  |  |  |
| SILCL                         | 3 , IEC/EN 62061   |  |  |
| Performance Level (PL)        | e , EN ISO 13849-1   |  |  |
| PFH <sub>D</sub>              | 2,64E-09 per hour  |  |  |
| Mission time T <sub>M</sub>   | 20 years , EN ISO 13849-1  |  |  |
| Category                      | 4 , EN ISO 13849   |  |  |
|                               |  |  |  |
| Protective field data         |  |  |  |
| Resolution                    | 24 mm  |  |  |
| Protective field height       | 390 mm   |  |  |
| Operating range               | 0.2 6 m  |  |  |
| Optical data                  |  |  |  |
| Number of beams               | 20 Piece(s)  |  |  |
| Synchronization               | Optical between transmitter and receiver   |  |  |
| Light source                  | LED , Infrared   |  |  |
| LED light wavelength          | 850 nm   |  |  |
| Transmitted-signal shape      | Pulsed   |  |  |
| LED group                     | Exempt group in acc. with EN 62471:2008  |  |  |
| Electrical data               |  |  |  |
| Protective circuit            | Overvoltage protection Short circuit protected                                   |  |  |
| Performance data              |  |  |  |
| Supply voltage U <sub>B</sub> | 24 V , DC , -20 20 %   |  |  |



| Outputs  |                                      |  |  |  |
|--|--------------------------------------|--|--|--|
| Number of safety-related switching outputs (OSSDs) | 2 Piece(s)                           |  |  |  |
| Safety-related switching outputs                   |                                      |  |  |  |
| Туре   | 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                                   |  |  |  |
| Load inductivity                                   | 2,000 μΗ                             |  |  |  |
| Load capacity                                      | 1 μF                                 |  |  |  |
| Residual current, max.                             | 200 mA                               |  |  |  |
| Residual current, typ.                             | 2 mA                                 |  |  |  |
| Safety-related switching output 1                  |                                      |  |  |  |
| Assignment   | Receiver device connection, pin 2    |  |  |  |
| Switching element                                  | Transistor , PNP                     |  |  |  |
| Safety-related switching output 2                  |                                      |  |  |  |
| Assignment   | Receiver device connection, pin 4    |  |  |  |
| Switching element                                  | Transistor , PNP                     |  |  |  |
|  |                                      |  |  |  |
| ming   |                                      |  |  |  |
| esponse time                                       | 8 ms                                 |  |  |  |
| · ·  |                                      |  |  |  |
| onnection  |                                      |  |  |  |
| umber of connections                               | 2 Piece(s)                           |  |  |  |
| Connection 1                                       | 211000(0)                            |  |  |  |
| Type of connection                                 | Cable with connector                 |  |  |  |
| Function   | Transmitter device connection        |  |  |  |
| Cable length                                       | 160 mm                               |  |  |  |
| Sheathing material                                 | PUR                                  |  |  |  |
| Thread size  | M12                                  |  |  |  |
| Material Material                                  | Plastic                              |  |  |  |
| No. of pins  | 5 -pin                               |  |  |  |
| Connection 2                                       | 3 -μπ                                |  |  |  |
| Type of connection                                 | Cable with connector                 |  |  |  |
| Function   | Receiver device connection           |  |  |  |
|  |                                      |  |  |  |
| Cable length                                       | 160 mm                               |  |  |  |
| Sheathing material Thread size                     | PUR                                  |  |  |  |
|  | M12                                  |  |  |  |
| Material   | Plastic                              |  |  |  |
| No. of pins  | 5 -pin                               |  |  |  |
|  |                                      |  |  |  |
| echanical data                                     |                                      |  |  |  |
| mension (W x H x L)                                | 15.4 mm x 390 mm x 32.6 mm           |  |  |  |
| ousing material                                    | Metal , Aluminum                     |  |  |  |
| ens cover material                                 | Plastic / PMMA                       |  |  |  |
| aterial of end caps                                | Plastic                              |  |  |  |
| 4  | 2,000 g                              |  |  |  |
| et weight  | 2,000 g                              |  |  |  |



| Type of fastening | C-shaped mounting bracket<br>L-shaped mounting bracket<br>O-shaped mounting bracket |  |
|-------------------|---|--|
|-------------------|---|--|

| Environmental data                 |           |
|------------------------------------|-----------|
| Ambient temperature, operation     | -10 55 °C |
| Ambient temperature, storage       | -30 70 °C |
| Relative humidity (non-condensing) | 15 95 %   |

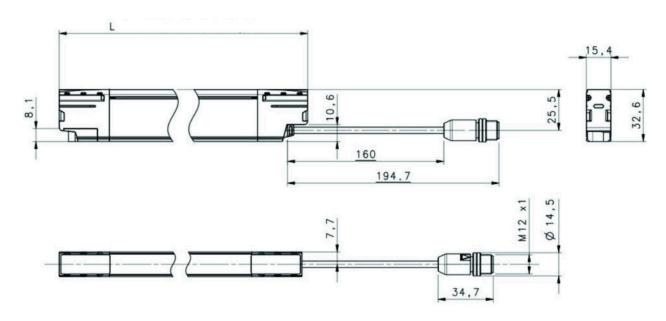
| Certifications       |                |
|----------------------|----------------|
| Degree of protection | IP 65          |
| Protection class     | III            |
| Certifications       | TÜV Süd        |
| Vibration resistance | 50 m/s²        |
| Shock resistance     | 98.1 m/s²      |
| US patents           | US 6,418,546 B |

| Classification        |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27272704 |
| eCl@ss 9.0            | 27272704 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |

### **Dimensioned drawings**

All dimensions in millimeters

#### Dimensions of transmitter and receiver



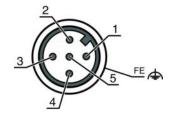
L Length/protective field height



#### **Electrical connection**

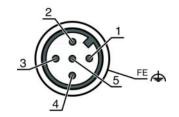
| Connection 1       | Transmitter                   |  |  |
|--------------------|-------------------------------|--|--|
| Type of connection | Cable with connector          |  |  |
| Function           | Transmitter device connection |  |  |
| Cable length       | 160 mm                        |  |  |
| Sheathing material | PUR                           |  |  |
| Cable color        | Black                         |  |  |
| Wire cross section |                               |  |  |
| Thread size        | M12                           |  |  |
| Туре               | Male                          |  |  |
| Material           | Plastic                       |  |  |
| No. of pins        | 5 -pin                        |  |  |
| Encoding           | A-coded                       |  |  |
| Connector housing  | FE/SHIELD                     |  |  |

| Pin | Pin assignment    | Conductor color |
|-----|-------------------|-----------------|
| 1   | +24 V DC          | Brown           |
| 2   | RESTART SELECTION | White           |
| 3   | 0 V               | Blue            |
| 4   | n.c.              | Black           |
| 5   | RESTART SELECTION | Gray            |



| Connection 2       | Receiver                   |  |  |
|--------------------|----------------------------|--|--|
| Type of connection | Cable with connector       |  |  |
| Function           | Receiver device connection |  |  |
| Cable length       | 160 mm                     |  |  |
| Sheathing material | PUR                        |  |  |
| Cable color        | Black                      |  |  |
| Wire cross section |                            |  |  |
| Thread size        | M12                        |  |  |
| Туре               | Male                       |  |  |
| Material           | Plastic                    |  |  |
| No. of pins        | 5 -pin                     |  |  |
| Encoding           | A-coded                    |  |  |
| Connector housing  | FE/SHIELD                  |  |  |

| Pin | Pin assignment    | Conductor color |
|-----|-------------------|-----------------|
| 1   | EDM               | Brown           |
| 2   | OSSD1             | White           |
| 3   | 0 V               | Blue            |
| 4   | OSSD2             | Black           |
| 5   | EDM FBK/SELECTION | Gray            |



#### Part number code

Part designation: MLCxxx-ooo-aa-hhhh



| MLC  | Safety light curtain                                      |
|------|---|
| xxx  | Series:<br>520: MLC 520S                                  |
| aa   | Resolution: 14: 14 mm 24: 24 mm                           |
| hhhh | Protective field height: 150 1200: from 150 mm to 1200 mm |
| 000  | Option:<br>S: Slimline version                            |

#### Note

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

#### **Accessories**

## Connection technology - Connection cables

| Part no. | Designation            | Article          | Description   |
|----------|------------------------|------------------|---|
| 50133841 | KD U-M12-5A-<br>P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

### Services

| Part no. | Designation | Article   | Description  |
|----------|-------------|---|--|
| S981050  | CS40-I-140  | Safety inspection<br>"Safety light<br>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.   |

#### Note

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