

## Technical data sheet Light curtain receiver

Part no.: 50119778

CML720i-R20-1430.A/L-M12



For illustration purposes only

### Contents

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



## Technical data

### Basic data

|                     |                        |
|---------------------|------------------------|
| Series              | 720                    |
| Operating principle | Throughbeam principle  |
| Device type         | Receiver               |
| Contains            | 2x BT-NC sliding block |
| Application         | Object measurement     |

### Special version

|                 |   |
|-----------------|---|
| Special version | Crossed-beam scanning<br>Diagonal-beam scanning<br>Parallel-beam scanning |
|-----------------|---|

### Optical data

|                          |             |
|--------------------------|-------------|
| Measurement field length | 1,430 mm    |
| Number of beams          | 72 Piece(s) |
| Beam spacing             | 20 mm       |

### Measurement data

|                         |       |
|-------------------------|-------|
| Minimum object diameter | 30 mm |
|-------------------------|-------|

### Electrical data

|                    |   |
|--------------------|---|
| Protective circuit | Polarity reversal protection<br>Short circuit protected<br>Transient protection |
|--------------------|---|

#### Performance data

|                      |  |
|----------------------|--|
| Supply voltage $U_B$ | 18 ... 30 V, DC  |
| Residual ripple      | 0 ... 15 %, From $U_B$   |
| Open-circuit current | 0 ... 270 mA, The specified values refer to the entire package consisting of transmitter and receiver. |

#### Inputs/outputs selectable

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| Output current, max.                | 100 mA                              |
| Input resistance                    | 6,000 $\Omega$                      |
| Number of inputs/outputs selectable | 4 Piece(s)                          |
| Type                                | Inputs/outputs selectable           |
| Voltage type, outputs               | DC                                  |
| Switching voltage, outputs          | Typ. $U_B / 0$ V                    |
| Voltage type, inputs                | DC                                  |
| Switching voltage, inputs           | high: $\geq 6$ V<br>low: $\leq 4$ V |

#### Input/output 1

|                          |            |
|--------------------------|------------|
| Activation/disable delay | 0 ... 1 ms |
|--------------------------|------------|

### Time behavior

|                        |            |
|------------------------|------------|
| Readiness delay        | 400 ms     |
| Cycle time             | 2.56 ms    |
| Response time per beam | 30 $\mu$ s |

### Interface

|                 |                |
|-----------------|----------------|
| Type            | IO-Link        |
| IO-Link         |                |
| COM mode        | COM2           |
| Min. cycle time | COM2 = 2.3 ms  |
| Specification   | V1.0.1<br>V1.1 |

### Service interface

|          |                                       |
|----------|---------------------------------------|
| Type     | IO-Link                               |
| IO-Link  |                                       |
| Function | Configuration via software<br>Service |

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
| Plug outlet           | Axial      |

#### Connection 1

|                    |  |
|--------------------|--|
| Function           | Configuration interface<br>Signal IN<br>Signal OUT<br>Voltage supply |
| Type of connection | Connector  |
| Thread size        | M12  |
| Type               | Male   |
| Material           | Metal  |
| No. of pins        | 8 -pin   |
| Encoding           | A-coded  |

#### Connection 2

|                    |                           |
|--------------------|---------------------------|
| Function           | Connection to transmitter |
| Type of connection | Connector                 |
| Thread size        | M12                       |
| Type               | Female                    |
| Material           | Metal                     |
| No. of pins        | 5 -pin                    |
| Encoding           | A-coded                   |

### Mechanical data

|                       |   |
|-----------------------|---|
| Design                | Cubic   |
| Dimension (W x H x L) | 29 mm x 35.4 mm x 1,515 mm                      |
| Housing material      | Metal   |
| Metal housing         | Aluminum  |
| Lens cover material   | Plastic   |
| Net weight            | 1,600 g   |
| Housing color         | Silver  |
| Type of fastening     | Groove mounting<br>Via optional mounting device |

### Operation and display

|                       |                      |
|-----------------------|----------------------|
| Type of display       | LED<br>OLED display  |
| Number of LEDs        | 2 Piece(s)           |
| Type of configuration | Software<br>Teach-in |
| Operational controls  | Membrane keyboard    |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -30 ... 60 °C |
| Ambient temperature, storage   | -40 ... 70 °C |

### Certifications

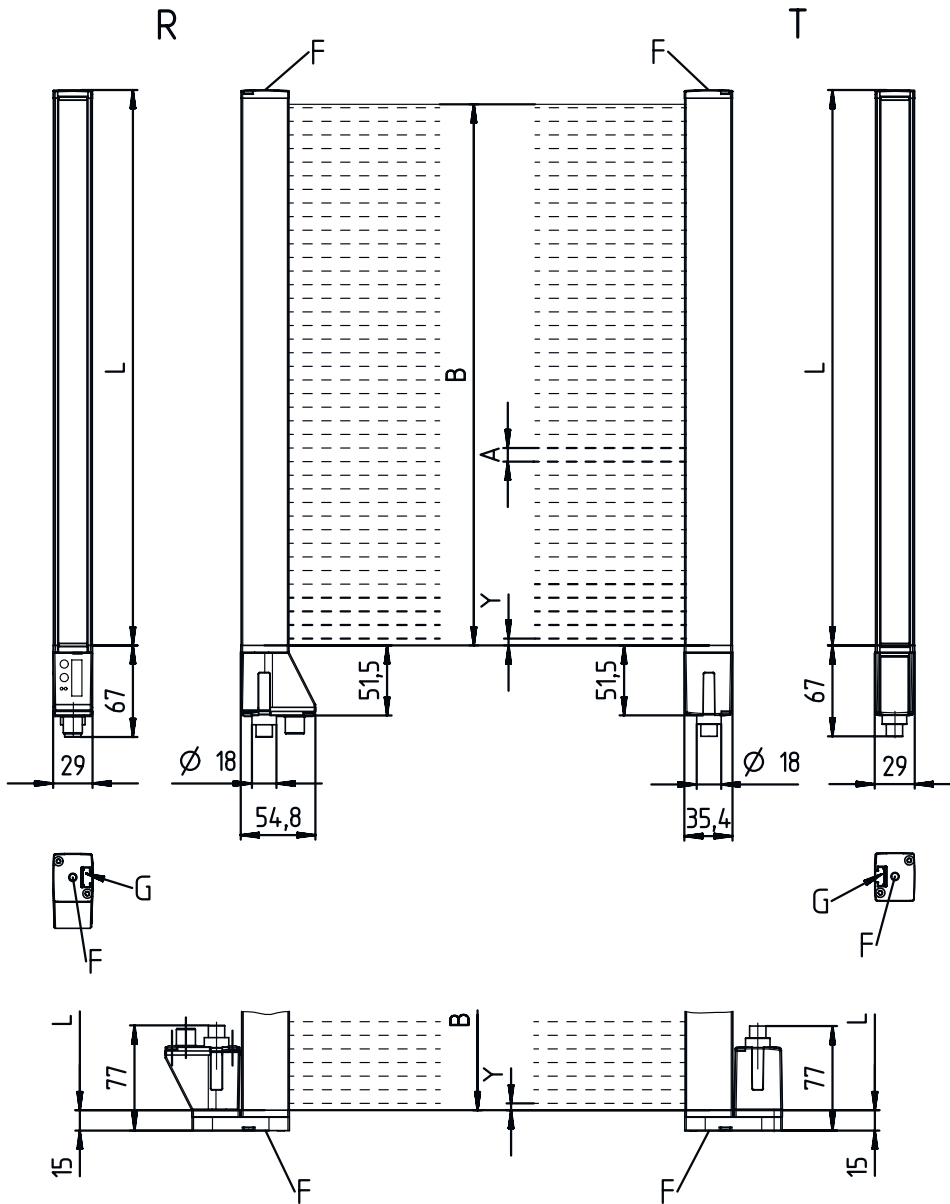
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 65         |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

## Technical data

|                       |          |
|-----------------------|----------|
| Customs tariff number | 90314990 |
| ECLASS 5.1.4          | 27270910 |
| ECLASS 8.0            | 27270910 |
| ECLASS 9.0            | 27270910 |
| ECLASS 10.0           | 27270910 |
| ECLASS 11.0           | 27270910 |
| ECLASS 12.0           | 27270910 |
| ECLASS 13.0           | 27270910 |
| ECLASS 14.0           | 27270910 |
| ECLASS 15.0           | 27270910 |
| ECLASS 16.0           | 27270910 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |
| ETIM 10.0             | EC002549 |

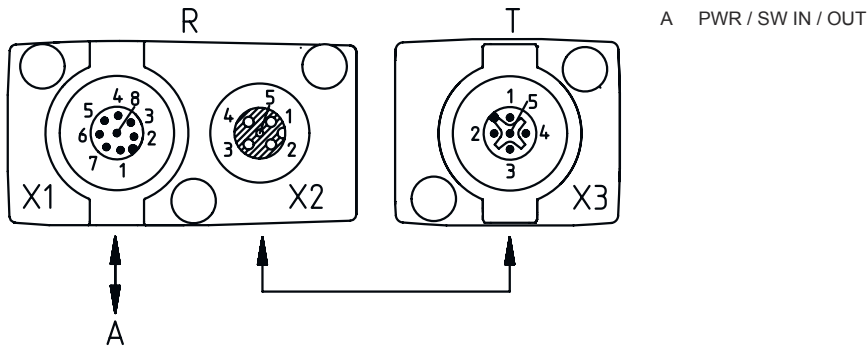
## Dimensioned drawings

All dimensions in millimeters



- |   |                                  |   |                        |
|---|----------------------------------|---|------------------------|
| A | Beam spacing 20 mm               | L | Profile length 1448 mm |
| B | Measurement field length 1430 mm | T | Transmitter            |
| F | M6 thread                        | R | Receiver               |
| G | Fastening groove                 | Y | 5 mm                   |

# Dimensioned drawings



## Electrical connection

### Connection 1

|                    |                         |
|--------------------|-------------------------|
| Function           | Configuration interface |
|                    | Signal IN               |
|                    | Signal OUT              |
|                    | Voltage supply          |
| Type of connection | Connector               |
| Thread size        | M12                     |
| Type               | Male                    |
| Material           | Metal                   |
| No. of pins        | 8 -pin                  |
| Encoding           | A-coded                 |

| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 2   | IO1            |
| 3   | GND            |
| 4   | IO-Link        |
| 5   | IO2            |
| 6   | IO3            |
| 7   | IO4            |
| 8   | GND            |



### Connection 2

|                    |                           |
|--------------------|---------------------------|
| Function           | Connection to transmitter |
| Type of connection | Connector                 |
| Thread size        | M12                       |
| Type               | Female                    |
| Material           | Metal                     |
| No. of pins        | 5 -pin                    |
| Encoding           | A-coded                   |


| Pin | Pin assignment |
|-----|----------------|
| 1   | FE/SHIELD      |
| 2   | V+             |
| 3   | GND            |
| 4   | RS 485 Tx+     |
| 5   | RS 485 Tx-     |



## Operation and display

| LED | Display                  | Meaning                                |
|-----|--------------------------|--|
| 1   | Green, continuous light  | Operational readiness                  |
|     | Green, flashing          | Teach / error                          |
| 2   | Yellow, continuous light | Light path free, with function reserve |
|     | Yellow, flashing         | No function reserve                    |
|     | Off                      | Object detected                        |

## Suitable transmitters

|   | Part no. | Designation            | Operating range<br>Operating range<br>limit | Description   |
|---|----------|------------------------|---|---|
|  | 50119431 | CML720i-T20-1430.A-M12 | 0.3 ... 7 m<br>0.2 ... 9 m                  | Operating range: 0.3 ... 7 m<br>Connection: Connector, M12, Axial, 5 -pin |

## Part number code

Part designation: CML7XXi-YZZ-AAAA.BCCDDDD-EEEEFF

|             |  |
|-------------|--|
| <b>CML</b>  | <b>Operating principle</b><br>Measuring light curtain  |
| <b>7XXi</b> | <b>Series</b><br>720i: 720i series<br>730i: 730i series  |
| <b>Y</b>    | <b>Device type</b><br>T: transmitter<br>R: receiver  |
| <b>ZZ</b>   | <b>Beam spacing</b><br>05: 5 mm<br>10: 10 mm<br>20: 20 mm<br>40: 40 mm   |
| <b>AAAA</b> | Measurement field length [mm], dependent on beam spacing   |
| <b>B</b>    | <b>Equipment</b><br>A: Axial connector outlet<br>R: Rear connector outlet  |
| <b>CCC</b>  | <b>Interface</b><br>L: IO-Link<br>/CN: CANopen<br>/PB: PROFIBUS<br>/PN: PROFINET<br>/CV: Analog current and voltage output<br>/D3: RS 485 Modbus |
| <b>DDD</b>  | <b>Special equipment</b><br>-PS: Power Setting   |
| <b>EEE</b>  | <b>Electrical connection</b><br>M12: M12 connector   |
| <b>FFF</b>  | <b>-EX: Explosion protection</b>   |

### Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://www.leuze.com).

## Notes

|                              |   |
|------------------------------|---|
| <b>Observe intended use!</b> |   |
|                              | <ul style="list-style-type: none"> <li>⌘ This product is not a safety sensor and is not intended as personnel protection.</li> <li>⌘ The product may only be put into operation by competent persons.</li> <li>⌘ Only use the product in accordance with its intended use.</li> </ul> |

| For UL applications: |   |
|----------------------|---|
|                      | <ul style="list-style-type: none"> <li>⌘ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> <li>⌘ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)</li> </ul> |

## Accessories

### Connection technology - Connection unit

|  | Part no. | Designation           | Article        | Description   |
|--|----------|-----------------------|----------------|---|
|  | 50144900 | MD 798i-11-82/L5-2222 | IO-Link master | Current consumption, max.: 11,000 mA<br>Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET<br>Connections: 12 Piece(s)<br>Sensor connections: 8 Piece(s)<br>Degree of protection: IP 67, IP 65, IP 69K |

### Connection technology - Connection cables

|  | Part no. | Designation        | Article          | Description  |
|--|----------|--------------------|------------------|--|
|  | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

### Connection technology - Interconnection cables


|  | Part no. | Designation                 | Article               | Description  |
|--|----------|-----------------------------|-----------------------|--|
|  | 50129781 | KDS DN-M12-5A-M12-5A-P3-050 | Interconnection cable | Application: Oil and lubricant resistant<br>Suitable for interface: DeviceNet, CANopen<br>Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

## Accessories

### Mounting technology - Mounting brackets

|  | Part no. | Designation    | Article             | Description   |
|--|----------|----------------|---------------------|---|
|  | 50142900 | BT 700M.5-2SET | Mounting device set | Contains: 2x mounting brackets, 1 teach template, 4 M6 x 10 screws<br>Design of mounting device: Bracket mounting<br>Fastening, at system: Through-hole mounting, T slotted hole<br>Mounting bracket, at device: Screw type, Sliding block<br>Type of mounting device: Rigid<br>Material: Steel |

### Configuration devices

|  | Part no. | Designation                  | Article         | Description  |
|--|----------|------------------------------|-----------------|--|
|  | 50121098 | SET MD12-US2-IL1.1<br>+ Zub. | Diagnostics set | Supply voltage: DC<br>Interface: USB<br>Connections: 2 Piece(s)<br>Degree of protection: IP 20 |

### Services

|  | Part no. | Designation | Article          | Description  |
|--|----------|-------------|------------------|--|
|   | S981001  | CS10-S-110  | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10 hours.<br>Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. |
|  | S981005  | CS10-T-110  | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours.<br>Conditions: 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.