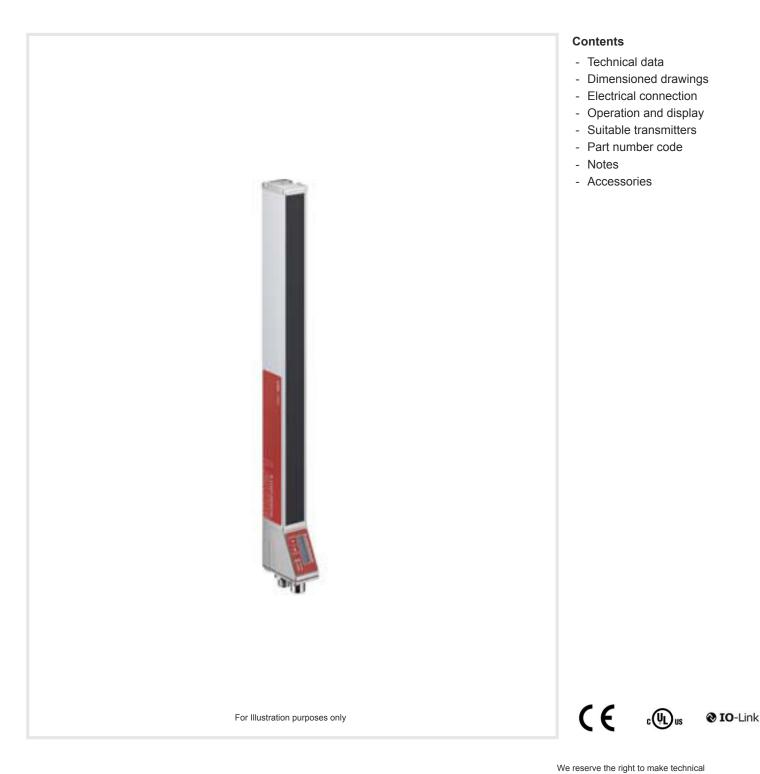


## **Technical data sheet Light curtain receiver** Part no.: 50119726 CML720i-R05-960.A/L-M12



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 changes

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 eng • 2025-04-04

### **Technical 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  |
|   | Diagonal-beam scanning   |
|   | Parallel-beam scanning   |
| Optical data                                      |  |
| Operating range                                   | 0.1 3.5 m  |
| Operating range                                   | Guaranteed operating range   |
| Operating range limit                             | 0.1 4.5 m  |
| Operating range limit                             | Typical operating range  |
| Measurement field length                          | 960 mm   |
| Number of beams                                   | 192 Piece(s)   |
| Beam spacing                                      | 5 mm   |
| Measurement data                                  |  |
| Minimum object diameter                           | 10 mm  |
| Electrical data                                   |  |
|   | Date //  |
| Protective circuit                                | Polarity reversal protection   |
|   | Short circuit protected  |
|   | Transient protection   |
| Performance data                                  |  |
| Supply voltage U <sub>B</sub>                     | 18 30 V, DC  |
| Residual ripple                                   | 0 15 %, From U <sub>B</sub>  |
| Open-circuit current                              | 0 270 mA, The specified values refer<br>to the entire package consisting of trans-<br>mitter and receiver. |
|   |  |
| Inputs/outputs selectable<br>Output current, max. | 100 mA   |
| Input resistance                                  | 6,000 Ω  |
| Number of inputs/outputs selectable               | ,  |
| Type  | Inputs/outputs selectable  |
| Voltage type, outputs                             | DC   |
| Switching voltage, outputs                        | Typ. U <sub>B</sub> / 0 V  |
| Voltage type, inputs                              | DC   |
| Switching voltage, inputs                         | high: ≥6V  |
|   | $low: \le 4 V$   |
|   |  |
| Input/output 1                                    |  |
| Activation/disable delay                          | 0 1 ms   |
| Time behavior                                     |  |
| Readiness delay                                   | 400 ms   |
| Cycle time  | 6.16 ms  |
| Response time per beam                            | 30 µs  |
| Interface   |  |
| Туре  | IO-Link  |
|   |  |
|   |  |

|    | IO-Link  |                                       |  |  |  |  |
|----|--|---------------------------------------|--|--|--|--|
|    | COM mode   | COM2                                  |  |  |  |  |
|    | Min. cycle time  | COM2 = 2.3 ms                         |  |  |  |  |
|    | Specification  | V1.0.1                                |  |  |  |  |
|    |  | V1.1                                  |  |  |  |  |
|    |  |                                       |  |  |  |  |
| S  | ervice interface   |                                       |  |  |  |  |
| Ту | /ре  | IO-Link                               |  |  |  |  |
|    |  |                                       |  |  |  |  |
|    | IO-Link  |                                       |  |  |  |  |
|    | Function   | Configuration via software<br>Service |  |  |  |  |
|    |  | Service                               |  |  |  |  |
| С  | onnection  |                                       |  |  |  |  |
| N  | umber of connections   | 2 Piece(s)                            |  |  |  |  |
| PI | lug outlet   | Axial                                 |  |  |  |  |
|    | -  |                                       |  |  |  |  |
|    | Connection 1   |                                       |  |  |  |  |
|    | Function   | Configuration interface               |  |  |  |  |
|    |  | Signal IN                             |  |  |  |  |
|    |  | Signal OUT                            |  |  |  |  |
|    | The second s | Voltage supply                        |  |  |  |  |
|    | Type of connection<br>Thread size  | Connector<br>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<br>Material   | Female<br>Metal                       |  |  |  |  |
|    | No. of pins  | 5 -pin                                |  |  |  |  |
|    | Encoding   | A-coded                               |  |  |  |  |
|    |  |                                       |  |  |  |  |
| Μ  | lechanical data  |                                       |  |  |  |  |
| D  | esign  | Cubic                                 |  |  |  |  |
|    | imension (W x H x L)   | 29 mm x 35.4 mm x 1,035 mm            |  |  |  |  |
|    | ousing material  | Metal                                 |  |  |  |  |
|    | etal housing   | Aluminum                              |  |  |  |  |
|    | ens cover material   | Plastic                               |  |  |  |  |
|    | et weight<br>ousing color  | 1,150 g<br>Silver                     |  |  |  |  |
|    | /pe of fastening   | Groove mounting                       |  |  |  |  |
| ر. | pe of fusiening  | Via optional mounting device          |  |  |  |  |
|    |  |                                       |  |  |  |  |
| 0  | peration and display   |                                       |  |  |  |  |
| ту | /pe of display   | LED                                   |  |  |  |  |
|    |  | OLED display                          |  |  |  |  |
| N  | umber of LEDs  | 2 Piece(s)                            |  |  |  |  |
| Ту | /pe of configuration   | Software                              |  |  |  |  |
|    |  | Teach-in                              |  |  |  |  |
| 0  | perational controls  | Membrane keyboard                     |  |  |  |  |
| E  | nvironmental data  |                                       |  |  |  |  |
| _  |  | 20 60 °C                              |  |  |  |  |
|    | mbient temperature, operation<br>mbient temperature, storage   | -30 60 °C<br>-40 70 °C                |  |  |  |  |
| A  | molent temperature, storage  |                                       |  |  |  |  |
|    |  |                                       |  |  |  |  |

### **Technical data**

#### Certifications

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

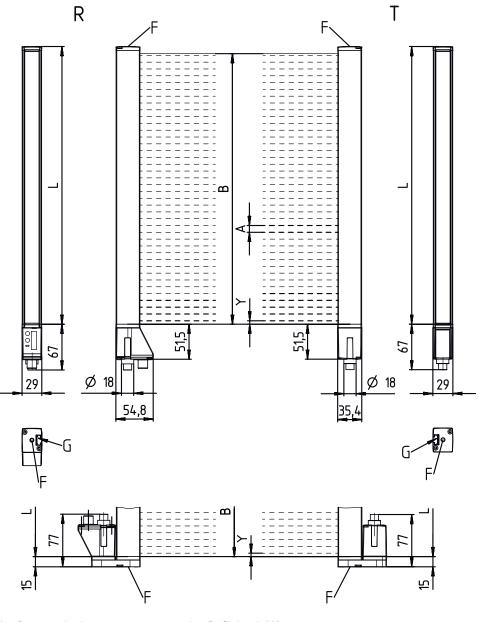
#### Classification

| 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 |
| 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 5 mm

- B Measurement field length 960 mm
- F M6 thread

G

Fastening groove

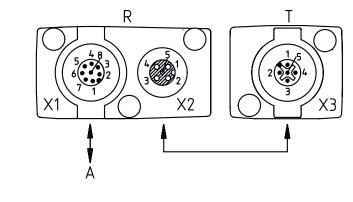
L Profile length 968 mm

- T Transmitter
- R Receiver
- Y 2.5 mm

### We reserve the right to make technical changes

### **Dimensioned drawings**





A PWR / SW IN / OUT

### **Electrical connection**

**Connection 1** 

| Function           | Configuration interface |
|--------------------|-------------------------|
|                    | Signal IN               |
|                    | Signal OUT              |
|                    | Voltage supply          |
| Type of connection | Connector               |
| Thread size        | M12                     |
| Туре               | 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 |   |         |
|--|---|---------|
| 3         GND           4         IO-Link           5         IO2           6         IO3  | 1 | V+      |
| 4         IO-Link           5         IO2           6         IO3  | 2 | IO1     |
| 5 IO2<br>6 IO3   | 3 | GND     |
| 6 IO3  | 4 | IO-Link |
|  | 5 | IO2     |
| 7 104  | 6 | IO3     |
| 1 104  | 7 | IO4     |
| 8 GND  | 8 | GND     |



#### **Connection 2**

| Function           | Connection to transmitter |
|--------------------|---------------------------|
| Type of connection | Connector                 |
| Thread size        | M12                       |
| Туре               | 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

| <br>Part no. | Designation               | Article                      | Description   |
|--------------|---------------------------|------------------------------|---|
| 50119379     | CML720i-T05-960.A-<br>M12 | Light curtain<br>transmitter | Operating range: 0.1 3.5 m<br>Connection: Connector, M12, Axial, 5 -pin |

#### Part number code

Part designation: CML7XXi-YZZ-AAAA.BCCCDDD-EEEFFF

| CML       | Operating principle<br>Measuring light curtain  |  |  |  |  |
|-----------|---|--|--|--|--|
| 7XXi      | Series           720i: 720i series           730i: 730i series  |  |  |  |  |
| Y         | Device type<br>T: transmitter<br>R: receiver  |  |  |  |  |
| ZZ        | Beam spacing<br>05: 5 mm<br>10: 10 mm<br>20: 20 mm<br>40: 40 mm   |  |  |  |  |
| AAAA      | Measurement field length [mm], dependent on beam spacing  |  |  |  |  |
| В         | Equipment<br>A: Axial connector outlet<br>R: Rear connector outlet  |  |  |  |  |
| CCC       | Interface<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 |  |  |  |  |
| DDD       | Special equipment<br>-PS: Power Setting   |  |  |  |  |
| EEE       | Electrical connection<br>M12: M12 connector   |  |  |  |  |
| FFF       | -EX: Explosion protection   |  |  |  |  |
| Note      |   |  |  |  |  |
| A list wi | th all available device types can be found on the Leuze website at www.leuze.com.   |  |  |  |  |

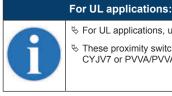
#### Notes

#### Observe intended use!

✤ This product is not a safety sensor and is not intended as personnel protection.

b The product may only be put into operation by competent persons.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  Only use the product in accordance with its intended use.



| ŀ, | For U | L applicatio | ons, use | is only per | mitted in Class 2 c | circuits in accorda | nce with the NEC (N | lational Electric Code). |  |
|----|-------|--------------|----------|-------------|---------------------|---------------------|---------------------|--------------------------|--|
|    |       |              |          |             |                     |                     |                     |                          |  |

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)

#### Accessories

#### Connection technology - Connection unit

|            | Part no. | Designation               | Article        | Description  |
|------------|----------|---------------------------|----------------|--|
| C. LEATING | 50144900 | MD 798i-11-82/L5-<br>2222 | IO-Link master | Type: IO-Link master<br>Current consumption, max.: 11,000 mA<br>Switching outputs for each sensor connection: 1 Piece(s)<br>Switching output: Transistor, PNP<br>Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP,<br>PROFINET<br>Connections: 12 Piece(s)<br>Sensor connections: 8 Piece(s)<br>Connections for voltage supply: 2 Piece(s)<br>Interface connections: 2 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 | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connector, LED: No           |
| Ŭ |          |                    |                  | 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-<br>M12-5A-P3-050 | Interconnection cable | 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

## Leuze

### Mounting technology - Mounting brackets

| <br>Part no. | Designation    | Article             | Description   |
|--------------|----------------|---------------------|---|
| <br>50142900 | BT 700M.5-2SET | Mounting device set | 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

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

#### Services

| <br>Part no. | Designation | Article          | Description  |
|--------------|-------------|------------------|--|
| S981001      | CS10-S-110  | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10<br>hours.<br>Conditions: Devices and connection cables are already mounted, price not<br>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<br>expenses.   |

Note

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