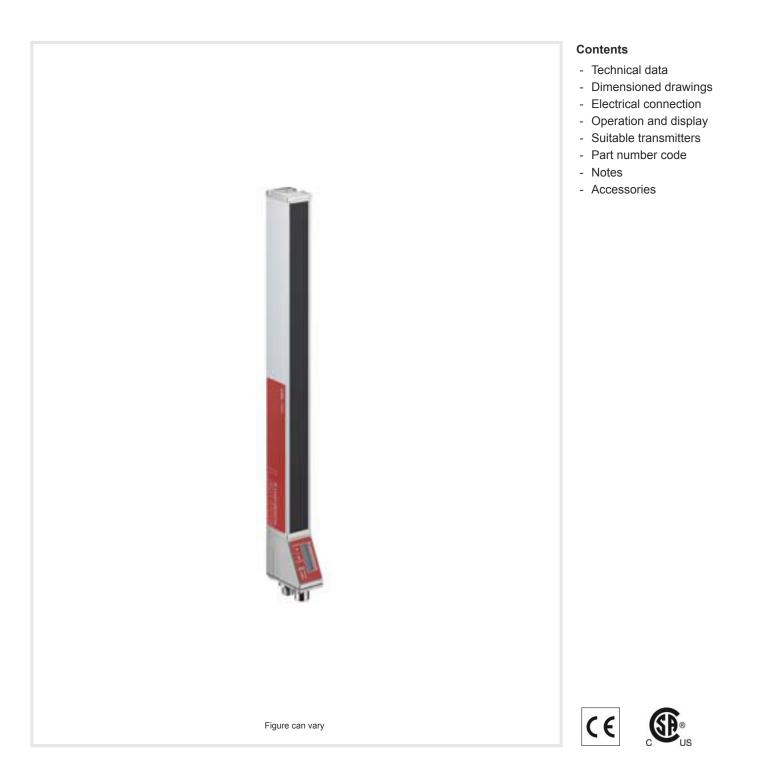


# **Technical data sheet** Light curtain receiver Part no.: 50119837 CML720i-R10-800.A/CV-M12



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# **Technical data**

#### **Basic 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  |
|                                     | Diagonal-beam scanning   |
|                                     | Parallel-beam scanning   |
|                                     | -  |
| Optical data                        |  |
| Operating range                     | Guaranteed operating range   |
| Operating range                     | 0.3 7 m  |
| Operating range limit               | Typical operating range  |
| Operating range limit               | 0.2 9 m  |
| Measurement field length            | 800 mm   |
| Number of beams                     | 80 Piece(s)  |
| Beam spacing                        | 10 mm  |
|                                     |  |
| Measurement data                    |  |
| Minimum object diameter             | 20 mm  |
|                                     |  |
| Electrical data                     |  |
| 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                | 0 215 mA, The specified values refer<br>to the entire package consisting of trans-<br>mitter and receiver. |
|                                     |  |
| Outputs                             |  |
| Number of analog outputs            | 2 Piece(s)   |
| Analog outputs                      |  |
| Current                             | 0 24 mA  |
| Voltage                             | 0 11 V   |
| -                                   |  |
| Analog output 1                     |  |
| Туре                                | Voltage  |
|                                     |  |
| Analog output 2                     |  |
| Туре                                | Current  |
|                                     |  |
| Inputs/outputs selectable           | 100 mA   |
| Output current, max.                | 6,000 Ω  |
| Input resistance                    |  |
| Number of inputs/outputs selectable |  |
| Type                                | Inputs/outputs selectable  |
| Voltage type, outputs               |  |
| Switching voltage, outputs          | Typ. U <sub>B</sub> / 0 V  |
| Voltage type, inputs                | DC   |
| Switching voltage, inputs           | high: ≥6V  |
|                                     | low: ≤4V   |
|                                     |  |

| Input/output 1           |   |
|--------------------------|---|
| Activation/disable delay | 1 ms  |
| Timing                   |   |
| Readiness delay          | 450 ms  |
| Cycle time               | 2.8 ms  |
| Response time per beam   | 30 µs   |
| Service interface        |   |
| Туре                     | IO-Link   |
| IO-Link                  |   |
| Function                 | Configuration via software                      |
|                          | Service   |
| Connection               |   |
| Number of connections    | 2 Piece(s)                                      |
| Plug outlet              | Axial   |
|                          |   |
| Connection 1             | Configuration interfere                         |
| Function                 | Configuration interface                         |
|                          | Signal IN                                       |
|                          | Signal OUT                                      |
| Type of connection       | Voltage supply<br>Connector                     |
| Thread size              | M12   |
| Туре                     | Male  |
| Material                 | Metal   |
| No. of pins              | 8 -pin  |
| Encoding                 | A-coded   |
| Ū.                       |   |
| 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   |
| Mechanical data          |   |
| Design                   | Cubic   |
| Dimension (W x H x L)    | 29 mm x 35.4 mm x 875 mm                        |
| Housing material         | Metal   |
| Metal housing            | Aluminum  |
| Lens cover material      | Plastic   |
| Net weight               | 1,000 g   |
| Housing color            | Silver  |
| Type of fastening        | Groove mounting<br>Via optional mounting device |
| Operation and display    |   |
| Type of display          | LED   |
| 1360 of display          | OLED display                                    |
| Number of LEDs           | 2 Piece(s)                                      |
| Type of configuration    | Software  |
|                          | Teach-in  |
| Operational controls     | Membrane keyboard                               |
|                          |   |

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# **Technical data**

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#### **Environmental data**

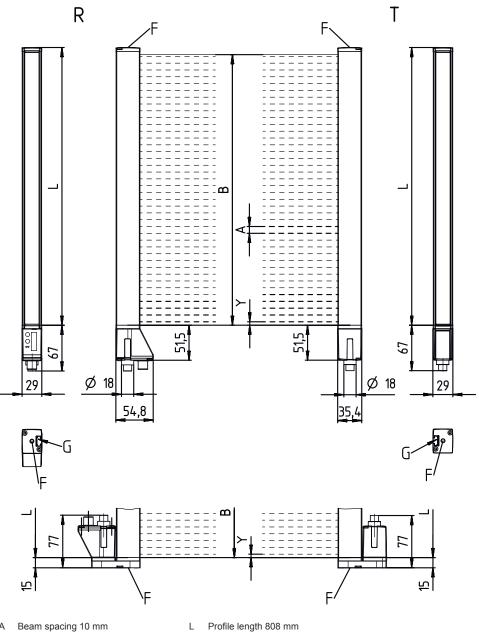
| Ambient temperature, operation           | -30 60 °C    |  |
|--|--------------|--|
| Ambient temperature, storage             | -40 70 °C    |  |
| Certifications                           |              |  |
|  |              |  |
| Degree of protection                     | IP 65        |  |
| Degree of protection<br>Protection class | IP 65<br>III |  |
| • •                                      |              |  |
| Protection class                         | III          |  |

#### Classification

| 90314990 |
|----------|
| 27270910 |
| 27270910 |
| 27270910 |
| 27270910 |
| 27270910 |
| EC002549 |
| EC002549 |
| EC002549 |
|          |

## **Dimensioned drawings**

All dimensions in millimeters



Beam spacing 10 mm А

Fastening groove

- В Measurement field length 800 mm
- F M6 thread

G

R Receiver

Т

Υ 5 mm

Transmitter

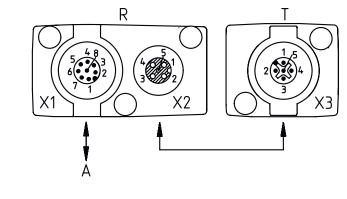




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# **Dimensioned drawings**





A PWR / SW IN / OUT

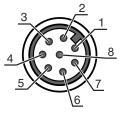
# **Electrical connection**

**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 | I/O 1   |  |  |
| 3 | GND     |  |  |
| 4 | IO-Link |  |  |
| 5 | I/O 2   |  |  |
| 6 | OUT V   |  |  |
| 7 | OUT mA  |  |  |
| 8 | AGND    |  |  |
|   |         |  |  |



#### **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   |
|--------------|---------------------------|------------------------------|---|
| 50119409     | CML720i-T10-800.A-<br>M12 | Light curtain<br>transmitter | Operating range: 0.3 6 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: connector outlet, axial<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 | ith all available device types can be found on the Leuze website at www.leuze.com.  |

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#### Notes

#### Observe intended use!

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

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  The product may only be put into operation by competent persons.

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

|   | For UL applications:  |
|---|---|
| A | <ul> <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/<br/>CYJV7 or PVVA/PVVA7)</li> </ul> |

#### Accessories

## 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>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: IO-Link, 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 |

#### Mounting technology - Mounting brackets

|   | Part no. | Designation    | Article             | Description   |
|---|----------|----------------|---------------------|---|
| 1 + 1 + + + + + + + + + + + + + + + + + | 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 |

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#### Accessories



# Mounting technology - Swivel mounts

|     | Part no. | Designation | Article              | Description   |
|-----|----------|-------------|----------------------|---|
| ęł. | 429046   | BT-2R1      | Mounting bracket set | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

# 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

|      | Part no. | Designation | Article          | Description   |
|------|----------|-------------|------------------|---|
| y, U | 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.<br>Restrictions: No mechanical (mounting) and electrical (wiring) work<br>performed, no changes (attachments, wiring, programming) to third-party<br>components in the nearby environment. |
|      | 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.<br>Restrictions: Travel costs and accommodation expenses charged separately<br>and according to expenditure.   |

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

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