

# **Technical data sheet** Light curtain receiver

Part no.: 50119717

CML720i-R05-240.A/L-M12



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## **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  |
|-----------------|------------------------|
|                 | 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 | 240 mm                     |
| Number of beams          | 48 Piece(s)                |
| Beam spacing             | 5 mm                       |

#### Measurement data

| Minimum ob | ject diameter | 10 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          | 0 165 mA, The specified values refer<br>to the entire package consisting of trans-<br>mitter and receiver. |

#### Inputs/outputs selectable

| Output current, max.                | 100 mA                    |
|-------------------------------------|---------------------------|
| Input resistance                    | 6,000 Ω                   |
| Number of inputs/outputs selectable | 4 Piece(s)                |
| Туре                                | 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: ≤ 4 V                |
|                                     |                           |

### Input/output 1

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

### Time behavior

| Readiness delay        | 400 ms  |
|------------------------|---------|
| Cycle time             | 1.84 ms |
| Response time per beam | 30 µs   |

### Interface

| Type IO-I | _ink |
|-----------|------|
|-----------|------|

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

### Service interface

| Ty | уре      | IO-Link                    |
|----|----------|----------------------------|
|    | IO-Link  |                            |
|    | Function | Configuration via software |
|    |          | Service                    |

### Connection

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

#### Connection 1

| Configuration interface |
|-------------------------|
| Signal IN               |
| Signal OUT              |
| Voltage supply          |
| Connector               |
| M12                     |
| Male                    |
| Metal                   |
| 8 -pin                  |
| A-coded                 |
|                         |

### **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 315 mm     |
| Housing material      | Metal                        |
| Metal housing         | Aluminum                     |
| Lens cover material   | Plastic                      |
| Net weight            | 450 g                        |
| Housing color         | Silver                       |
| Type of fastening     | Groove mounting              |
|                       | Via optional mounting device |

### Operation and display

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

### **Environmental data**

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

## **Technical data**



### Certifications

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

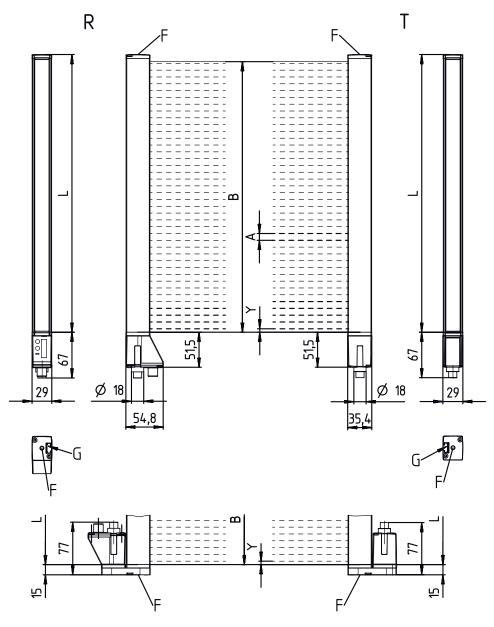
### Classification

| 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**

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All dimensions in millimeters

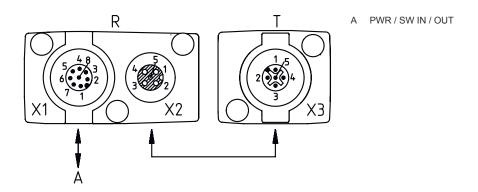


- Beam spacing 5 mm
- В Measurement field length 240 mm
- M6 thread
- Fastening groove
- Profile length 248 mm
- Transmitter
- Receiver
- 2.5 mm

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# **Dimensioned drawings**



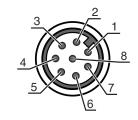


# **Electrical connection**

### **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   | 101            |
| 3   | GND            |
| 4   | IO-Link        |
| 5   | 102            |
| 6   | 103            |
| 7   | 104            |
| 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

| Pai | rt no. | Designation | Article | Description   |
|-----|--------|-------------|---------|---|
| 501 |        |             |         | 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 Measuring light curtain   |
|------|---|
| 7XXi | Series           720i: 720i series           730i: 730i series  |
| Υ    | Device type T: transmitter R: receiver  |
| ZZ   | Beam spacing 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm   |
| AAAA | Measurement field length [mm], dependent on beam spacing  |
| В    | Equipment A: Axial connector outlet R: Rear connector outlet  |
| ccc  | Interface L: IO-Link /CN: CANopen /PB: PROFIBUS /PN: PROFINET /CV: Analog current and voltage output /D3: RS 485 Modbus |
| DDD  | Special equipment -PS: Power Setting  |
| EEE  | Electrical connection M12: M12 connector  |
| FFF  | -EX: Explosion protection   |



🖔 A list with 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.
- \$ The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

### For UL applications:



- 🔖 For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National 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  |
|-----------------|----------|---------------------------|----------------|--|
| CARLELLE STATES | 50144900 | MD 798i-11-82/L5-<br>2222 | IO-Link master | Type: IO-Link master Current consumption, max.: 11,000 mA Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) 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<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: DeviceNet, CANopen Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

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### **Accessories**



# Mounting technology - Mounting brackets

| Part no. | Designation    | Article             | Description   |
|----------|----------------|---------------------|---|
| 50142900 | BT 700M.5-2SET | Mounting device set | Design of mounting device: Bracket mounting Fastening, at system: Through-hole mounting, T slotted hole Mounting bracket, at device: Screw type, Sliding block Type of mounting device: Rigid Material: Steel |

# Configuration devices

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