

## **Technical data sheet** Light curtain receiver Part no.: 50123472 CML720i-R05-2640.A/D3-M12



Leuze electronic GmbH + Co. KG 
 The Sensor People
 In der Braike 1, D-73277 Owen/Germany
 Phone: +49 7021 573-0 • Fax: +49 7021 573-199
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info@leuze.com • www.leuze.com changes

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### **Technical data**

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| Series   | 720  |
|--|--|
| Operating principle  | Throughbeam principle  |
| Device type  | Receiver   |
| Contains   | 2x BT-NC sliding block   |
| Application  | Object measurement   |
| Precial version  |  |
| Special version  | O  |
| Special version  | Crossed-beam scanning  |
|  | Diagonal-beam scanning<br>Parallel-beam scanning   |
|  | r aranei-beam scanning   |
| Optical data   |  |
| Dperating 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   | 2,640 mm   |
| Number of beams  | 528 Piece(s)   |
| Beam spacing   | 5 mm   |
| leasurement data   |  |
| Minimum object 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   | 0 435 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  | 2 Piece(s)   |
| Туре   | Inputs/outputs selectable  |
| Voltage type, outputs  | DC   |
| Switching voltage, outputs   | Typ. U <sub>B</sub> / 0 V  |
| Switching voltage, inputs  | high: ≥6V  |
|  | low: $\leq 4 \text{ V}$  |
|  |  |
| Input/output 1<br>Activation/disable delay                                 | 1 mo   |
| Activation/disable delav   | 1 ms   |
| · · · · · · · · · · · · · · · · · · ·                                      |  |
| -  |  |
| Time behavior  | 16.24 ms   |
| Time behavior<br>Cycle time  | 16.24 ms<br>30 µs  |
| Time behavior<br>Cycle time<br>Response time per beam<br>Interface         |  |
| Time behavior<br>Cycle time<br>Response time per beam                      |  |
| Time behavior<br>Cycle time<br>Response time per beam<br>Interface<br>Type | 30 µs  |
| Time behavior<br>Cycle time<br>Response time per beam<br>Interface         | 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                         |                              |
| Function                             | Configuration interface      |
|                                      | Connection to transmitter    |
|                                      | Signal IN<br>Signal OUT      |
|                                      | Voltage supply               |
| Type of connection                   | Connector                    |
| Thread size                          | M12                          |
| Туре                                 | Male                         |
| Material                             | Metal                        |
| No. of pins                          | 8 -pin                       |
| Encoding                             | A-coded                      |
| _                                    |                              |
| Connection 2                         |                              |
| Function                             | BUS IN                       |
|                                      | BUS OUT                      |
| Type of connection                   | Connector                    |
| Thread size                          | M12                          |
| Type                                 | Female                       |
| Material<br>No. of pins              | Metal<br>5 -pin              |
| Encoding                             | B-coded                      |
| Licoung                              | booted                       |
| Mechanical data                      |                              |
| Design                               | Cubic                        |
| Dimension (W x H x L)                | 29 mm x 35.4 mm x 2,715 mm   |
| Housing material                     | Metal                        |
| Metal housing<br>Lens cover material | Aluminum                     |
| Net weight                           | Plastic<br>2,700 g           |
| Housing color                        | Silver                       |
| Type of fastening                    | Groove mounting              |
|                                      | Via optional mounting device |
| Operation and display                |                              |
| Operation and display                |                              |
| Type of display                      | LED                          |
|                                      | 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                    |
|                                      |                              |
|                                      |                              |

## **Technical data**

#### Certifications

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

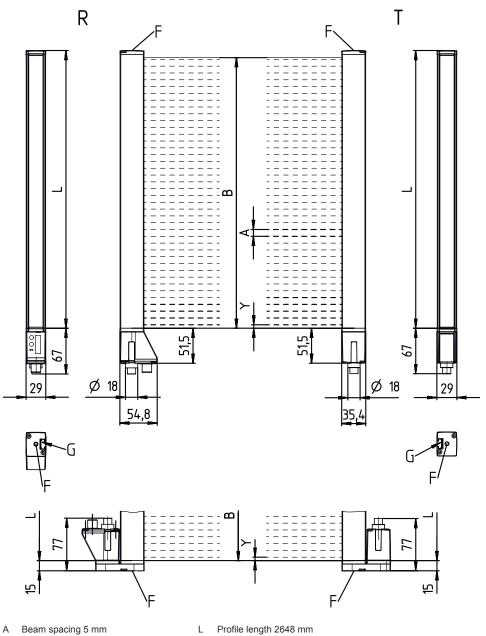
#### Classification

| 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 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |
|                       |          |

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#### **Dimensioned drawings**

All dimensions in millimeters

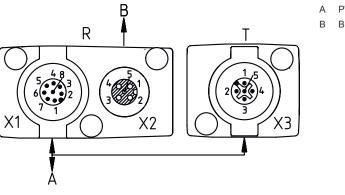


- Beam spacing 5 mm А
- В Measurement field length 2640 mm
- F M6 thread G Fastening groove
- Transmitter Т R Receiver
  - 2.5 mm Υ

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#### **Dimensioned drawings**





A PWR / SW IN / OUTB BUS IN / OUT

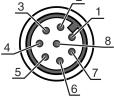
## **Electrical connection**

**Connection 1** 

| Function           | Configuration interface   |
|--------------------|---------------------------|
| Function           | , C                       |
|                    | Connection to transmitter |
|                    | 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 | RS 485 Tx+ |  |  |
| 7 | RS 485 Tx+ |  |  |
| 8 | FE/SHIELD  |  |  |
|   |            |  |  |



#### **Connection 2**

| Function           | BUS IN    |
|--------------------|-----------|
|                    | BUS OUT   |
| Type of connection | Connector |
| Thread size        | M12       |
| Туре               | Female    |
| Material           | Metal     |
| No. of pins        | 5 -pin    |
| Encoding           | B-coded   |

## **Electrical connection**

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

### **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   |
|--------------|----------------------------|------------------------------|---|
| 50119400     | CML720i-T05-<br>2640.A-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  |
| 22   | 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 |



#### Part number code



| DDD | Special equipment<br>-PS: Power Setting     |
|-----|---|
| EEE | Electrical connection<br>M12: M12 connector |
| FFF | -EX: Explosion protection                   |
|     |   |
|     | Note  |

#### Notes

| Observe intended use!   |
|---|
| <ul> <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:

 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 cables

| <br>Part no. | Designation            | Article          | Description   |
|--------------|------------------------|------------------|---|
| 50132079     | KD U-M12-5A-V1-<br>050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC |

#### Connection technology - Y distribution cables

|  | Part no. | Designation                 | Article               | Description  |
|--|----------|-----------------------------|-----------------------|--|
|  | 50118183 | K-Y1 M12A-5m-<br>M12A-S-PUR | Interconnection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Connection 3: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Shielded: Yes<br>Cable length fork 1: 5,000 mm<br>Cable length fork 2: 150 mm<br>Sheathing material: PUR |

#### Accessories

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## 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 |

#### Services

|          | 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. |
| الم<br>م | 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  |
|---|---|
| 6 | ✤ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page. |