

# Technical data sheet Light curtain receiver Part no.: 50123555 CML720i-R20-1110.A/D3-M12



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 changes

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We reserve the right to make technical changes

### **Technical data**

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| Series  | 720   |
|---|---|
| Operating principle                               | Throughbeam principle   |
| Device type                                       | Receiver  |
| Contains  | 2x BT-NC sliding block  |
| Application                                       | Object measurement  |
| Special version                                   |   |
|   | Crossed beem seepping   |
| Special version                                   | Crossed-beam scanning<br>Diagonal-beam scanning   |
|   | Parallel-beam scanning  |
|   | . a.a.or boarr ooarring   |
| Optical data                                      |   |
| Operating range                                   | 0.3 7 m   |
| Operating range                                   | Guaranteed operating range  |
| Operating range limit                             | 0.2 9 m   |
| Operating range limit                             | Typical operating range   |
| Measurement field length                          | 1,110 mm  |
| Number of beams                                   | 56 Piece(s)   |
| Beam spacing                                      | 20 mm   |
| Measurement data                                  |   |
| Minimum object diameter                           | 30 mm   |
| Electrical data                                   |   |
| Protective circuit                                | Delerity reversel protection  |
| Protective circuit                                | Polarity reversal protection<br>Short circuit protected   |
|   | Transient protection  |
|   | mansient 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                         | 100 mA  |
| Output current, max.<br>Input resistance          | 6,000 Ω   |
| Number of inputs/outputs selectable               | ,   |
|   | Inputs/outputs selectable   |
| Voltage type, outputs                             | DC  |
| Switching voltage, outputs                        | Typ. U <sub>B</sub> / 0 V   |
| Switching voltage, inputs                         | high: ≥6V   |
| g,  | $low: \leq 4 V$   |
|   |   |
| Input/output 1                                    |   |
| Activation/disable delay                          | 1 ms  |
|   |   |
| Time behavior                                     |   |
|   | 2.08 ms   |
| Cycle time  | 2.08 ms<br>30 us  |
| Cycle time<br>Response time per beam              | 2.08 ms<br>30 μs  |
| Cycle time  |   |
| Cycle time<br>Response time per beam<br>Interface | 30 µs   |
| Cycle time<br>Response time per beam<br>Interface | 30 µs   |

| IO-Link<br>Configuration via software<br>Service |
|--|
|  |
|  |
| Service  |
|  |
|  |
| 2 Piece(s)                                       |
| Axial  |
|  |
| Configuration interface                          |
| Connection to transmitter                        |
| Signal IN  |
| Signal OUT                                       |
| Voltage supply                                   |
| Connector  |
| M12  |
| Male   |
| Metal  |
| 8 -pin   |
| A-coded  |
|  |
| BUS IN   |
| BUS OUT  |
| Connector  |
| M12  |
| Female   |
| Metal  |
| 5 -pin   |
| B-coded  |
|  |
| Cubic  |
| 29 mm x 35.4 mm x 1,195 mm                       |
| Metal  |
| Aluminum   |
| Plastic  |
| 1,300 g  |
| Silver   |
| Groove mounting                                  |
| Via optional mounting device                     |
|  |
| LED  |
| OLED display                                     |
| 2 Piece(s)                                       |
| Software   |
| Teach-in   |
| Membrane keyboard                                |
|  |
| -30 60 °C  |
| -40 70 °C  |
|  |
|  |

## **Technical data**

### Certifications

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

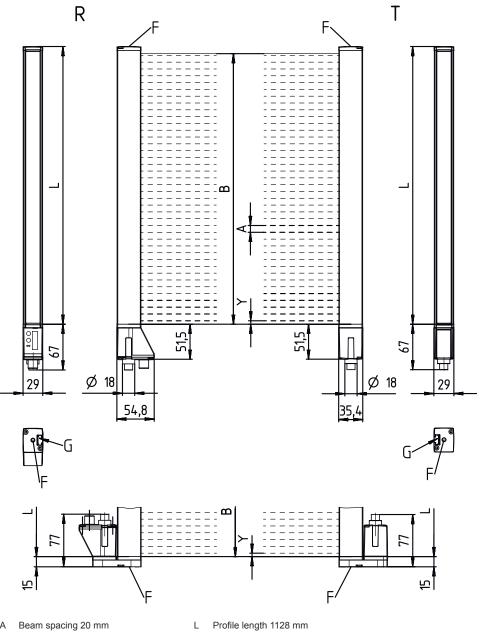
### Classification

| 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**

All dimensions in millimeters



#### Beam spacing 20 mm А

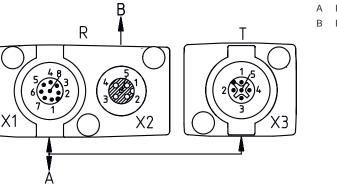
- В Measurement field length 1110 mm
- F M6 thread G
  - Fastening groove
- Transmitter R Receiver
- Y 5 mm

Т

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### **Dimensioned drawings**





A PWR / SW IN / OUTB BUS IN / OUT

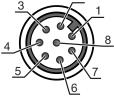
# **Electrical connection**

**Connection 1** 

| Function           | Configuration interface   |
|--------------------|---------------------------|
|                    | 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             |
| Turne              | Example         |
| Туре               | Female          |
| Material           | Female<br>Metal |
|                    |                 |

## **Electrical connection**

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



| 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   |
|--------------|----------------------------|------------------------------|---|
| 50119429     | CML720i-T20-1110.A-<br>M12 | Light curtain<br>transmitter | Operating range: 0.3 7 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           05: 5 mm           10: 10 mm           20: 20 mm           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   |
| A   | ∜ A list with all available device types can be found on the Leuze website at www.leuze.com. |

### 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  |
|----------|----------|-------------|------------------|--|
| ц.<br>С  | 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  |
|---|---|
| A | ♣ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page. |