



the sensor people





Figure can vary

Part no.: 50119451 CML720i-T05-240.R-M12 Light curtain transmitter





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### **Technical data**

| Basic data                          |   |
|-------------------------------------|---|
| Series Series                       | 720   |
| Operating principle                 | Throughbeam principle   |
| Device type                         | Transmitter   |
| Contains                            | Accessories for the use of the BT-2R1   |
| Application                         | Object measurement  |
|                                     | ·   |
| Optical data                        |   |
| Operating range                     | Guaranteed operating range  |
| Operating range                     | 0.1 3.5 m   |
| Operating range limit               | Typical operating range   |
| Operating range limit               | 0.1 4.5 m   |
| Measurement field length            | 240 mm  |
| Number of beams                     | 48 Piece(s)   |
| Beam spacing                        | 5 mm  |
| Light source                        | LED , Infrared  |
| LED light wavelength                | 940 nm  |
|                                     |   |
| Measurement 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                | 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. |
| Timing                              |   |
| Readiness delay                     | 450 ms  |
| Cycle time                          | 1.84 ms   |
|                                     |   |
| Connection                          | 4 Pinar(s)  |
| Number of connections               | 1 Piece(s)  |
| Plug outlet                         |   |
|                                     | Rear side   |
| Connection 1                        |   |
| Connection 1 Function               | Connection to receiver Sync-input Voltage supply  |
|                                     | Connection to receiver Sync-input   |
| Function                            | Connection to receiver Sync-input Voltage supply  |
| Function  Type of connection        | Connection to receiver Sync-input Voltage supply Connector  |
| Type of connection Thread size      | Connection to receiver Sync-input Voltage supply Connector M12                                      |
| Type of connection Thread size Type | Connection to receiver Sync-input Voltage supply Connector M12 Male                                 |



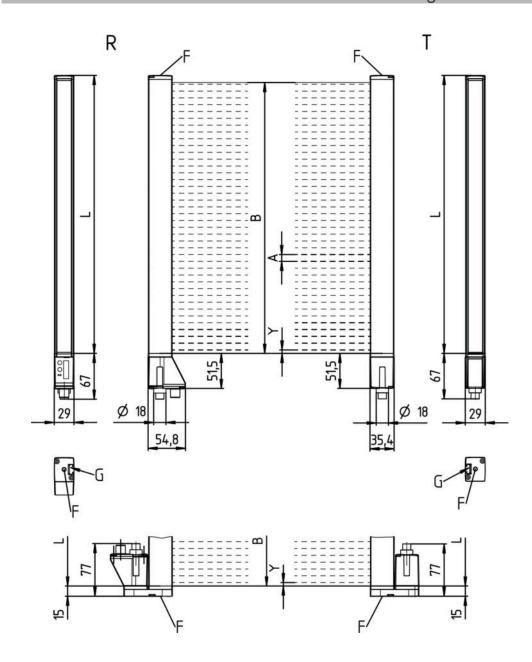
| Mechanical data                |   |
|--------------------------------|---|
| Design                         | Cubic   |
| Dimension (W x H x L)          | 29 mm x 35.4 mm x 263 mm                        |
| Housing material               | Metal , Aluminum                                |
| Lens cover material            | Plastic   |
| Net weight                     | 450 g   |
| Housing color                  | Silver  |
| Type of fastening              | Groove mounting<br>Via optional mounting device |
|                                |   |
| Operation and display          |   |
| Type of display                | LED   |
| Number of LEDs                 | 1 Piece(s)                                      |
| Environmental data             |   |
| Ambient temperature, operation | -30 60 °C                                       |
| Ambient temperature, storage   | -40 70 °C                                       |
| Certifications                 |   |
| Degree of protection           | IP 65   |
| Protection class               | III   |
| Certifications                 | c CSA US  |
| Standards applied              | IEC 60947-5-2                                   |

| Classification        |          |
|-----------------------|----------|
| Customs tariff number | 90314990 |
| eCl@ss 8.0            | 27270910 |
| eCl@ss 9.0            | 27270910 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |

### **Dimensioned drawings**

All dimensions in millimeters





- A Beam spacing 5 mm B Measurement field length 240 mm
- F M6 thread
- G Fastening groove
- L Profile length 248 mm
- T Transmitter
- R Receiver
- Y 2.5 mm

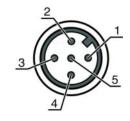




#### **Electrical connection**

| Connection 1       |  |  |
|--------------------|--|--|
| Function           | Connection to receiver<br>Sync-input<br>Voltage supply |  |
| Type of connection | Connector  |  |
| Thread size        | M12  |  |
| Туре               | Male   |  |
| 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

#### **LEDs**

|   | LED | Display                                      | Meaning  |
|---|-----|--|--|
|   | 1   | Green, continuous light                      | Continuous mode  |
| 1 |     | Off  | No communication with the receiver / waiting for trigger |
|   |     | green, flashing in sync with the measurement | Measurement frequency display                            |

#### Suitable receivers

|   | Part no. | Designation                      | Article                | Description   |
|---|----------|----------------------------------|------------------------|---|
| 1 | 50119906 | CML720i-<br>R05-240.R/CN-<br>M12 | Light curtain receiver | Operating range: 0.1 3.5 m<br>Interface: CANopen<br>Connection: Connector, M12, Rear side, 8 -pin                           |
| 4 | 50120124 | CML720i-<br>R05-240.R/CV-<br>M12 | Light curtain receiver | Operating range: 0.1 3.5 m<br>Analog outputs: 2 Piece(s), Voltage, Current<br>Connection: Connector, M12, Rear side, 8 -pin |
| 4 | 50123577 | CML720i-<br>R05-240.R/<br>D3-M12 | Light curtain receiver | Operating range: 0.1 3.5 m<br>Interface: RS 485<br>Connection: Connector, M12, Rear side, 8 -pin                            |



| Part no. | Designation                      | Article                | Description   |
|----------|----------------------------------|------------------------|---|
| 50119987 | CML720i-<br>R05-240.R/L-M12      | Light curtain receiver | Operating range: 0.1 3.5 m<br>Interface: IO-Link<br>Connection: Connector, M12, Rear side, 8 -pin     |
| 50122925 | CML720i-<br>R05-240.R/PB-<br>M12 | Light curtain receiver | Operating range: 0.1 3.5 m<br>Interface: PROFIBUS DP<br>Connection: Connector, M12, Rear side, 8 -pin |
| 50131879 | CML720i-<br>R05-240.R/PN-<br>M12 | Light curtain receiver | Operating range: 0.1 3.5 m<br>Interface: PROFINET<br>Connection: Connector, M12, Rear side, 8 -pin    |

#### Part number code

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

| CML  | Operating principle: Measuring light curtain   |
|------|--|
| 7XXi | Series:<br>720i: 720i series<br>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: connector outlet, axial 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:   |

| Note  |
|---|
| A list with all available device types can be found on the Leuze electronic 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 - Interconnection cables

| Part no. | Designation                     | Article | Description   |
|----------|---------------------------------|---------|---|
| 50129781 | KDS DN-M12-5A-<br>M12-5A-P3-050 |         | 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  |
|----------|----------------|---------------------|--|
| 50142900 | BT 700M.5-2SET | Mounting device set | Contains: 2x mounting brackets, 1 teach template, 4 M6 x 10 screws 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 |

# Mounting technology - Swivel mounts

|     | Part no. | Designation | Article              | Description   |
|-----|----------|-------------|----------------------|---|
| EE, | 429046   | BT-2R1      | Mounting bracket set | Contains: 2x BT-R swivel mount, 1 cylinder for mounting on the light curtain Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic |

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|     | Part no. | Designation                     | Article         | Description  |
|-----|----------|---------------------------------|-----------------|--|
| 165 | 50121098 | SET<br>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. Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment. |
| 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. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.   |

#### Note

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