

Technical data sheet Light curtain receiver Part no.: 50131859 CML720i-R05-1600.R/PN-M12



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 changes

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Technical data

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Basic data Series 720 **Operating principle** Throughbeam principle Device type Receiver Accessories for the use of the BT-2R1 Contains 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 1,600 mm Number of beams 320 Piece(s) Beam spacing 5 mm **Measurement data** Minimum object diameter 10 mm **Electrical data** Protective circuit Polarity reversal protection Short circuit protected Transient protection Performance data Supply voltage U_B 18 ... 30 V, DC 0 ... 15 %, From U_B **Residual ripple** 0 ... 350 mA, The specified values refer **Open-circuit current** to the entire package consisting of transmitter and receiver. Inputs/outputs selectable 100 mA Output current, max. 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_B / 0 V Voltage type, inputs DC Switching voltage, inputs high: ≥6V low: $\leq 4 \text{ V}$ Input/output 1 Activation/disable delay 1 ms **Time behavior** Readiness delay 1,500 ms Cycle time 10 ms Response time per beam 30 µs Interface

Туре

PROFINET

| PROFINET | | |
|---------------------|----------------------|---------------------------------------|
| | Function | Process |
| | Conformance class | В |
| | Protocol | PROFINET RT |
| | Switch functionality | Integrated |
| | Transmission speed | 10 Mbit/s |
| | | 100 Mbit/s |
| Se | ervice interface | |
| Ту | ре | IO-Link |
| | | |
| | IO-Link Function | Configuration via coffuero |
| | Function | Configuration via software Service |
| | | Gervice |
| C | onnection | |
| Nu | umber of connections | 3 Piece(s) |
| PI | ug outlet | Rear side |
| | | |
| | Connection 1 | |
| | Function | Configuration interface |
| | | Connection to transmitter |
| | | Signal IN |
| | | Signal OUT |
| | T | 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 |
| | Type of connection | Connector |
| | Thread size | M12 |
| | Туре | Female |
| | Material | Metal |
| | No. of pins | 4 -pin |
| | Encoding | D-coded |
| | | |
| | Connection 3 | |
| | Function | BUS OUT |
| | Type of connection | Connector |
| | Thread size | M12 |
| | Туре | Female |
| | Material | Metal |
| | No. of pins | 4 -pin |
| | Encoding | D-coded |
| M | echanical data | |
| De | esign | Cubic |
| - | | 29 mm x 35.4 mm x 1,623 mm |
| | | Metal |
| - | | Aluminum |
| Lens cover material | | Plastic |
| Net weight | | 1,800 g |
| Но | ousing color | Silver |
| Type of fastening | | Groove mounting |
| | | Via optional mounting device |
| | | |

Technical data

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Operation and display

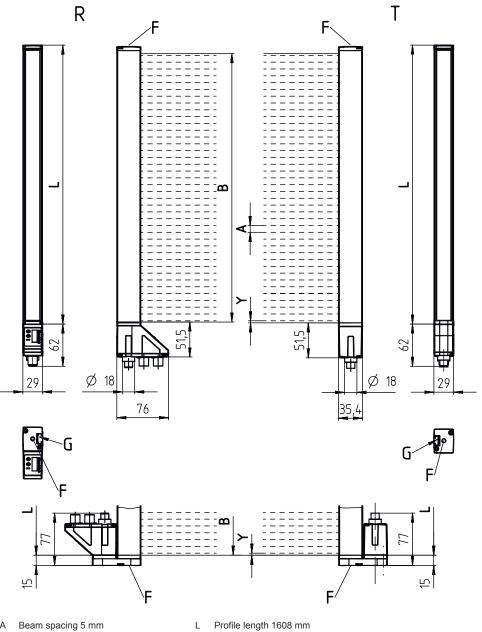
| Type of display | LED |
|--------------------------------|---------------|
| | OLED display |
| Number of LEDs | 4 Piece(s) |
| Type of configuration | Software |
| | Teach-in |
| | |
| Environmental data | |
| Ambient temperature, operation | -30 60 °C |
| Ambient temperature, storage | -40 70 °C |
| | |
| Certifications | |
| Degree of protection | IP 65 |
| Protection class | III |
| Certifications | c 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 |
| | |

Dimensioned drawings

All dimensions in millimeters



Beam spacing 5 mm А

Fastening groove

- В Measurement field length 1600 mm
- F M6 thread

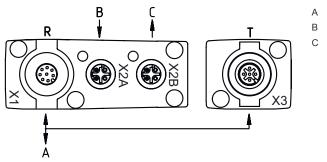
G

- Transmitter Т
- R Receiver
- 2.5 mm Υ

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Dimensioned drawings

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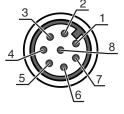
- A PWR / SW IN / OUT B BUS IN
- C BUS OUT

Electrical connection

| Connection 1 | X1 |
|--------------------|---------------------------|
| 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

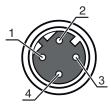
| 1 | V+ | | |
|---|------------|--|--|
| 2 | I/O 1 | | |
| 3 | GND | | |
| 4 | IO-Link | | |
| 5 | I/O 2 | | |
| 6 | RS 485 Tx+ | | |
| 7 | RS 485 Tx+ | | |
| 8 | FE/SHIELD | | |



| Connection 2 | X2A |
|--------------------|-----------|
| Function | BUS IN |
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

Pin Pin assignment

| 1 | TD0+ |
|---|------|
| 2 | RD0+ |
| 3 | TD0- |
| 4 | RD0- |



Electrical connection

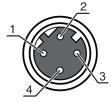
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Connection 3

| Function | BUS OUT |
|--------------------|-----------|
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

X2B

| Pin | Pin assignment | |
|-----|----------------|--|
| 1 | TD0+ | |
| 2 | RD0+ | |
| 3 | TD0- | |
| 4 | RD0- | |



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 |
| 3 | Green, continuous light (at the X2A / X2B connector) | Link |
| 4 | Yellow, continuous light (at the X2A / X2B connector) | Activity |
| | | |

Suitable transmitters

| Part no. | Designation | Article | Description |
|--------------|----------------------------|------------------------------|---|
| 50119468 | CML720i-T05- 1600.R-M12 | Light curtain transmitter | Operating range: 0.1 3.5 m Connection: Connector, M12, Rear side, 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 | | |
| Y | Device type T: transmitter 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 A: Axial connector outlet R: Rear connector outlet | | |
| | | | |

Part number code



| 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 |
| 6 | ✤ 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 cables

| Part no. | Designation | Article | Description |
|--------------|-------------------------|------------------|--|
| 50132079 | KD U-M12-5A-V1- 050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC |
| 50135074 | KS ET-M12-4A-P7- 050 | Connection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR |

Accessories

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Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|--|----------|---------------------------------|-----------------------|--|
| | 50135081 | KSS ET-M12-4A- RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

Connection technology - Y distribution cables

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

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 |

Mounting technology - Swivel mounts

| | Part no. | Designation | Article | Description |
|-----|----------|-------------|----------------------|---|
| RR. | 429029 | BT-2RG | Mounting bracket set | Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic |

Configuration devices

| Part no. | Designation | Article | Description |
|--------------|------------------------------|-----------------|--|
| 50121098 | SET MD12-US2-IL1.1 + Zub. | Diagnostics set | Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20 |

Accessories

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