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Technical data sheet Light curtain receiver Part no.: 50123655 CML720i-R40-1890.R/D3-M12



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We reserve the right to make technical changes eng • 2020-12-23

Technical data

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Basic data Series 720 Throughbeam principle **Operating principle** Device type Receiver Contains Accessories for the use of the BT-2R1 Application Object measurement **Special version** Special version Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning **Optical data Operating range** Guaranteed operating range **Operating range** 0.3 ... 7 m Operating range limit Typical operating range **Operating range limit** 0.2 ... 9 m Measurement field length 1,890 mm Number of beams 47 Piece(s) Beam spacing 40 mm **Measurement data** Minimum object diameter 50 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 DC Voltage type, outputs Typ. U_B / 0 V Switching voltage, outputs Switching voltage, inputs high: ≥6V low: ≤4V Input/output 1 Activation/disable delay 1 ms Timing Cycle time 1.81 ms Response time per beam 30 µs Interface RS 485 Modbus Туре RS 485 Process Function

| т., | Service interface | | | | |
|------------|-------------------------------|------------------------------|--|--|--|
| Туре | | IO-Link | | | |
| | IO-Link | | | | |
| | Function | Configuration via software | | | |
| | | Service | | | |
| с <i>с</i> | onnection | | | | |
| | Imber of connections | 2 Piece(s) | | | |
| | ug outlet | Rear side | | | |
| | ug outlet | itea sue | | | |
| | 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 | | | |
| | | | | | |
| | 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 | | | |
| M | echanical data | | | | |
| De | esign | Cubic | | | |
| Di | mension (W x H x L) | 29 mm x 35.4 mm x 1,943 mm | | | |
| Hc | ousing material | Metal | | | |
| Me | etal housing | Aluminum | | | |
| Le | ns cover material | Plastic | | | |
| Ne | et weight | 2,100 g | | | |
| Ho | ousing color | Silver | | | |
| Ту | pe of fastening | Groove mounting | | | |
| | | Via optional mounting device | | | |
| Ol | peration and display | | | | |
| Ту | pe of display | LED | | | |
| - | | OLED display | | | |
| Nι | Imber of LEDs | 2 Piece(s) | | | |
| | pe of configuration | Software | | | |
| | | Teach-in | | | |
| Op | perational controls | Membrane keyboard | | | |
| Er | nvironmental data | | | | |
| | | | | | |
| Δn | nbient temperature, operation | -30 60 °C | | | |

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Technical data

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Certifications

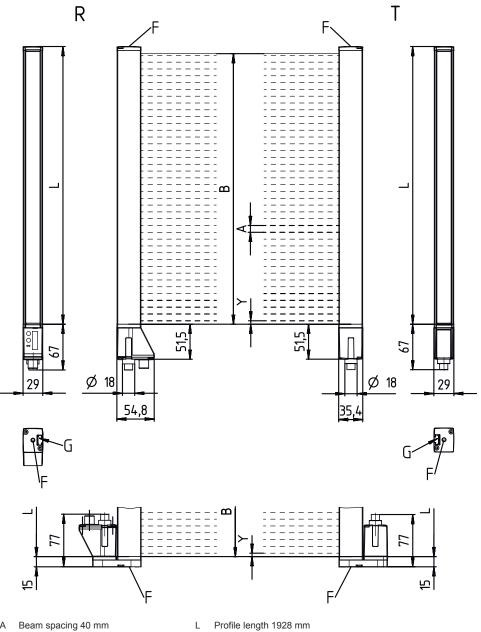
| Degree of protection | IP 65 |
|----------------------|---------------|
| Protection class | III |
| Certifications | c CSA US |
| Standards applied | IEC 60947-5-2 |

Classification

| 90314990 |
|----------|
| 27270910 |
| 27270910 |
| 27270910 |
| 27270910 |
| 27270910 |
| EC002549 |
| EC002549 |
| EC002549 |
| |

Dimensioned drawings

All dimensions in millimeters



Beam spacing 40 mm А

Fastening groove

- В Measurement field length 1890 mm
- F M6 thread

G

Transmitter R Receiver

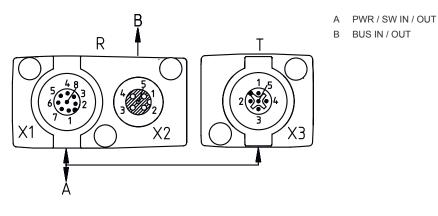
Т

5 mm Υ



Dimensioned drawings





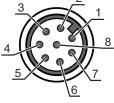
Electrical connection

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 |
| Туре | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | B-coded |

Electrical connection

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

| Part no. | Designation | Article | Description |
|--------------|----------------------------|------------------------------|---|
| 50119528 | CML720i-T40- 1890.R-M12 | Light curtain transmitter | Operating range: 0.3 6 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: 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 |

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Part number code



7/8

| DDD | Special equipment -PS: Power Setting |
|-----|--|
| EEE | Electrical connection 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! |
|---|
| 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 Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

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 |

Accessories

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| | Part no. | Designation | Article | Description |
|--|----------|------------------------------|-----------------------|---|
| | 50123265 | K-YPB M12A-5m- M12A-S-PUR | Interconnection cable | Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Male, B-coded, 5 -pin Connection 2: Cable with connector, M12, Axial, Female, B-coded, 5 -pin Connection 3: Cable with connector, M12, Axial, Male, B-coded, 5 -pin Shielded: Yes Sheathing material: PUR |

Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|----------|----------|----------------|---------------------|---|
| 1.1. 1.1 | 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 |
|-----|----------|-------------|----------------------|---|
| ęę. | 429046 | BT-2R1 | Mounting bracket set | Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic |

Services

| | Part no. | Designation | Article | Description |
|---------|----------|-------------|------------------|---|
| y; U | 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

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