Leuze

Technical data sheet Light curtain receiver Part no.: 50120084 CML720i-R10-1440.R/L-M12



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 changes

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 eng • 2024-06-21

Technical data

| Series | 720 |
|---|---|
| Operating principle | Throughbeam 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 | 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 | 1,440 mm |
| Number of beams | 144 Piece(s) |
| Beam spacing | 10 mm |
| Measurement data | |
| Minimum object diameter | 20 mm |
| Electrical data | |
| Protective circuit | Polarity reversal protection |
| | Short circuit protected |
| | Transient protection |
| | |
| Performance data | |
| Supply voltage U _B | 18 30 V, DC |
| Residual ripple | 0 15 %, From U _B |
| Open-circuit current | 0 350 mA, The specified values refer to the entire package consisting of trans mitter and receiver. |
| Inputs/outputs selectable | |
| Output current, max. | 100 mA |
| Input resistance | 6,000 Ω |
| Number of inputs/outputs selectable | 4 Piece(s) |
| Туре | Inputs/outputs selectable |
| Voltage type, outputs | DC |
| Switching voltage, outputs | Typ. U _B / 0 V |
| | |
| Voltage type, inputs | DC |
| Voltage type, inputs Switching voltage, inputs | DC high: ≥6V |
| | |
| Switching voltage, inputs | high: ≥6V |
| Switching voltage, inputs | high: ≥6V Iow: ≤ 4 V |
| Switching voltage, inputs | high: ≥6V |
| Switching voltage, inputs Input/output 1 Activation/disable delay | high: ≥6V Iow: ≤ 4 V |
| Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay | high: ≥6V low: ≤ 4 V 0 1 ms 400 ms |
| Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time | high: ≥6V low: ≤ 4 V 0 1 ms 400 ms 4.72 ms |
| Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay | high: ≥6V low: ≤ 4 V 0 1 ms 400 ms |
| Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time Response time per beam | high: ≥6V low: ≤ 4 V 0 1 ms 400 ms 4.72 ms |
| Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time | high: ≥6∨ low: ≤ 4 ∨ 0 1 ms 400 ms 4.72 ms |

| IO-Link | 00140 |
|----------------------------------|------------------------------|
| COM mode | COM2 |
| Min. cycle time Specification | COM2 = 2.3 ms V1.0.1 |
| Specification | V1.1 |
| | V1.1 |
| Service interface | |
| уре | IO-Link |
| IO-Link | |
| Function | Configuration via software |
| | Service |
| Connection | |
| lumber of connections | 2 Piece(s) |
| Plug outlet | Rear side |
| | |
| Connection 1 | |
| Function | Configuration interface |
| | 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 | Connection to transmitter |
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |
| lechanical data | |
| Design | Cubic |
| Dimension (W x H x L) | 29 mm x 35.4 mm x 1,463 mm |
| lousing material | Metal |
| Metal housing | Aluminum |
| ens cover material | Plastic |
| Net weight | 1,650 g |
| lousing color | Silver |
| Type of fastening | Groove mounting |
| | Via optional mounting device |
| Operation and display | |
| Гуре of display | LED |
| | OLED display |
| Number of LEDs | 2 Piece(s) |
| Type of configuration | Software |
| | Teach-in |
| Operational controls | Membrane keyboard |
| Environmental data | |
| | |
| Ambient temperature, operation | -30 60 °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 |
| | |

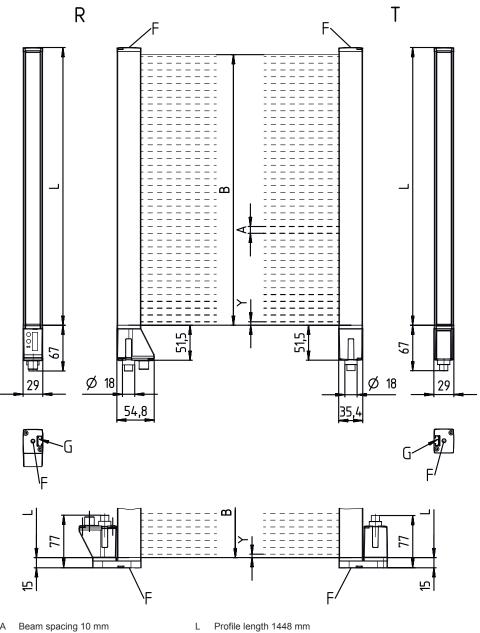
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Dimensioned drawings

All dimensions in millimeters



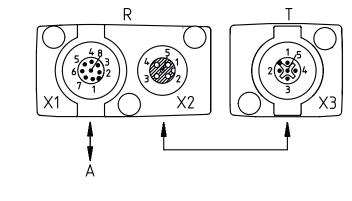
- В Measurement field length 1440 mm
- F M6 thread G Fastening groove
- R Receiver 5 mm Υ

Т

Transmitter

Dimensioned drawings





A PWR / SW IN / OUT

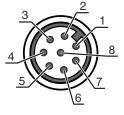
Electrical connection

Connection 1

| Function | Configuration interface |
|--------------------|-------------------------|
| | 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 | IO1 | | |
| 3 | GND | | |
| 4 | IO-Link | | |
| 5 | 102 | | |
| 6 | IO3 | | |
| 7 | IO4 | | |
| 8 | GND | | |
| | | | |

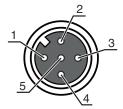


Connection 2

| Function | Connection to transmitter |
|--------------------|---------------------------|
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| 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- |



We reserve the right to make technical changes

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 |
|--------------|----------------------------|------------------------------|---|
| 50119495 | CML720i-T10- 1440.R-M12 | Light curtain transmitter | Operating range: 0.3 7 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 |
| 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: Axial connector outlet 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 wi | th all available device types can be found on the Leuze website at www.leuze.com. |

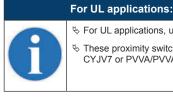
Notes

Observe intended use!

✤ This product is not a safety sensor and is not intended as personnel protection.

b The product may only be put into operation by competent persons.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$ Only use the product in accordance with its intended use.



| ₿ | 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 unit

| | Part no. | Designation | Article | Description |
|-----------|----------|---------------------------|----------------|--|
| C. LEATER | 50144900 | MD 798i-11-82/L5- 2222 | IO-Link master | Type: IO-Link master Current consumption, max.: 11,000 mA Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67, IP 65, IP 69K |

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|--|
| | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end |
| | | | | Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR |

Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|--|----------|---------------------------------|-----------------------|--|
| | 50129781 | KDS DN-M12-5A- M12-5A-P3-050 | Interconnection cable | Suitable for interface: DeviceNet, CANopen Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

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Accessories

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 |
|-----|----------|-------------|----------------------|---|
| ęę. | 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 |

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. |
| | 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. |