

Technical data sheet

Light curtain receiver

Part no.: 50119943

CML720i-R10-480.R/CN-M12

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- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable transmitters
- Part number code
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For illustration purposes only



Technical data

Basic 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

| | |
|--------------------------|-------------|
| Measurement field length | 480 mm |
| Number of beams | 48 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 ... 165 mA, The specified values refer to the entire package consisting of transmitter and receiver. |

Inputs/outputs selectable

| | |
|-------------------------------------|-------------------------------------|
| Output current, max. | 100 mA |
| Input resistance | 6,000 Ω |
| Number of inputs/outputs selectable | 2 Piece(s) |
| Type | Inputs/outputs selectable |
| Voltage type, outputs | DC |
| Switching voltage, outputs | Typ. U_B / 0 V |
| Voltage type, inputs | DC |
| Switching voltage, inputs | high: ≥ 6 V low: ≤ 4 V |

Input/output 1

| | |
|--------------------------|------|
| Activation/disable delay | 1 ms |
|--------------------------|------|

Time behavior

| | |
|------------------------|------------|
| Readiness delay | 450 ms |
| Cycle time | 1.84 ms |
| Response time per beam | 30 μ s |

Interface

| | |
|----------|---------|
| Type | CANopen |
| Function | Process |

Service interface

| | |
|------|---------|
| Type | IO-Link |
|------|---------|

IO-Link

| | |
|----------|---------------------------------------|
| Function | Configuration via software Service |
|----------|---------------------------------------|

Connection

| | |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
| Plug outlet | Rear side |

Connection 1

| | |
|--------------------|---|
| Function | Configuration interface Connection to transmitter Signal IN Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | 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 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|-----------------------|---|
| Design | Cubic |
| Dimension (W x H x L) | 29 mm x 35.4 mm x 503 mm |
| Housing material | Metal |
| Metal housing | Aluminum |
| Lens cover material | Plastic |
| Net weight | 750 g |
| Housing color | Silver |
| Type of fastening | Groove mounting Via optional mounting device |

Operation and display

| | |
|-----------------------|----------------------|
| Type 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 |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

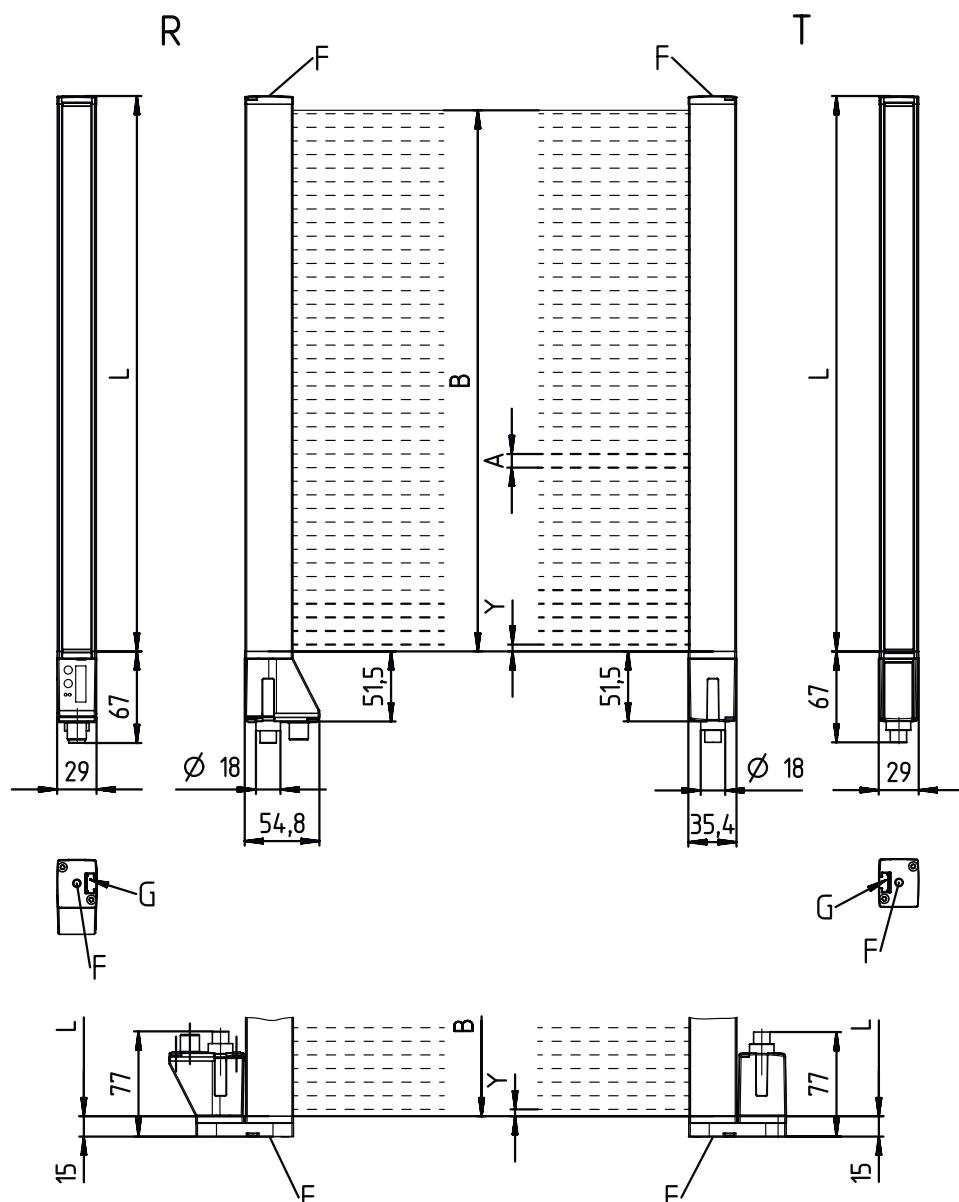
| | |
|----------------------|---------------|
| Degree of protection | IP 65 |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

Technical data

| | |
|-----------------------|----------|
| 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



A Beam spacing 10 mm

B Measurement field length 480 mm

F M6 thread

G Fastening groove

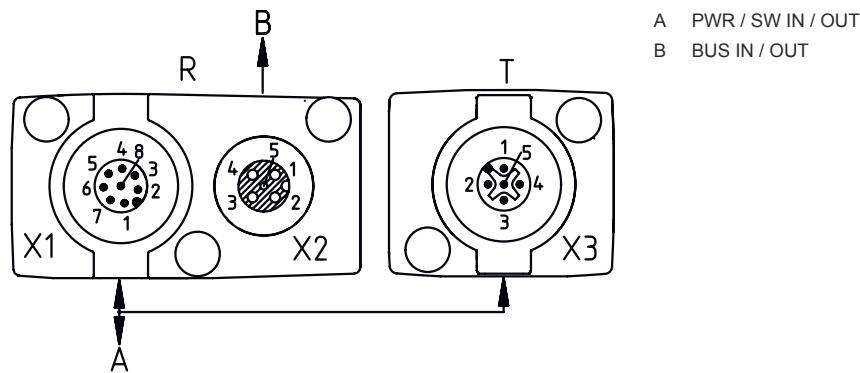
L Profile length 488 mm

T Transmitter

R Receiver

Y 5 mm

Dimensioned drawings

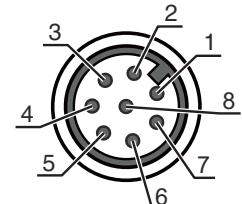



Electrical connection

Connection 1

| | |
|--------------------|---|
| Function | Configuration interface Connection to transmitter Signal IN Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | 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 |

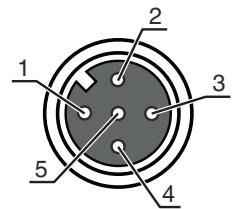


Connection 2

| | |
|--------------------|-------------------|
| Function | BUS IN BUS OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Female |
| Material | Metal |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Electrical connection

| Pin | Pin assignment |
|-----|----------------|
| 1 | FE/SHIELD |
| 2 | n.c. |
| 3 | CAN GND |
| 4 | CAN H |
| 5 | CAN L |



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 | Operating range Operating range limit | Description |
|----------|-----------------------|---|---|
| 50119489 | CML720i-T10-480.R-M12 | 0.3 ... 7 m 0.2 ... 9 m | Operating range: 0.3 ... 7 m Connection: Connector, M12, Rear side, 5 -pin |

Part number code

Part designation: CML7XXi-YZZ-AAAA.BCCCCDD-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 |
| B | 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 |

Part number code

| | |
|--|--|
| 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 website at www.leuze.com . |

Notes

| | |
|--|---|
|  | Observe intended use! |
| | <ul style="list-style-type: none"> ↳ 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: |
| | <ul style="list-style-type: none"> ↳ 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: CYJV7 or PVVA/PVVA7) |

Accessories

Connection technology - Connection cables

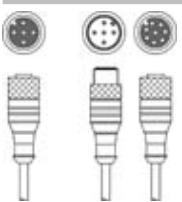
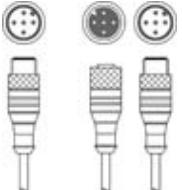
| Part no. | Designation | Article | Description |
|---|----------------------------------|------------------|--|
|   | 50132079 KD U-M12-5A-V1-050 | Connection cable | Application: Chemical resistant Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

Connection technology - Interconnection cables

| Part no. | Designation | Article | Description |
|---|---|-----------------------|--|
|   | 50129781 KDS DN-M12-5A-M12-5A-P3-050 | Interconnection cable | Application: Oil and lubricant resistant 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 |

Accessories

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 |
|  | 50118185 | K-YCN M12A-M12A-S-PUR | Interconnection cable Suitable for interface: CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length fork 1: 250 mm Cable length fork 2: 350 mm Sheathing material: PUR |

Connection technology - Terminating resistors

| Part no. | Designation | Article | Description |
|---|-------------|------------|--|
|  | 50040099 | TS 01-5-SA | Terminator plug Suitable for: DeviceNet, CANopen Function: Bus termination Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin |

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 |
|--|-------------|---------|--|
|  | 429029 | BT-2RG | Mounting bracket set Contains: 2x BT-R swivel mount, 2 cylinders 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 |

Accessories

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

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