

Technical data sheet Light curtain receiver

Part no.: 50120066

CML720i-R05-2240.R/L-M12



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eng • 2020-12-19

Technical data



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

| 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 | 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 | 2,240 mm |
| Number of beams | 448 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 |
|-------------------------------|--|
| Residual ripple | 0 15 %, From U _B |
| Open-circuit current | 0 435 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 |
| Switching voltage, inputs | high: ≥6V |
| | low: ≤4V |
| | |

Input/output 1

| Activation/disable delay | 0 1 ms |
|--------------------------|--------|
|--------------------------|--------|

Timing

| Readiness delay | 400 ms |
|------------------------|----------|
| Cycle time | 13.84 ms |
| Response time per beam | 30 µs |

Interface

| Туре | IO-Link |
|--------|---------|
| .,,,,, | 10 1111 |

| IO-Link | |
|-----------------|---------------|
| COM mode | COM2 |
| Specification | V1.0.1 |
| | V1.1 |
| Min. cycle time | COM2 = 2.3 ms |

Service interface

| Гуре | 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 |
| | 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 |
| 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 2,263 mm |
| Housing material | Metal |
| Metal housing | Aluminum |
| Lens cover material | Plastic |
| Net weight | 2,350 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 |

Environmental data

| Ambient temperature, operation | -30 60 °C |
|--------------------------------|-----------|
| Ambient temperature, storage | -40 70 °C |

Technical data



Certifications

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

Classification

| Customs tariff number | 90314990 |
|-----------------------|----------|
| eCI@ss 5.1.4 | 27270910 |
| eCI@ss 8.0 | 27270910 |
| eCI@ss 9.0 | 27270910 |
| eCI@ss 10.0 | 27270910 |
| eCI@ss 11.0 | 27270910 |
| ETIM 5.0 | EC002549 |
| ETIM 6.0 | EC002549 |
| ETIM 7.0 | EC002549 |

Dimensioned drawings

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All dimensions in millimeters



- A Beam spacing 5 mm
- B Measurement field length 2240 mm
- F M6 thread
- G Fastening groove
- L Profile length 2248 mm
- T Transmitter
- R Receiver
- Y 2.5 mm

Dimensioned drawings



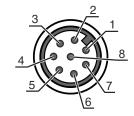


Electrical connection

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 |

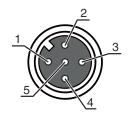
| Pin | Pin assignment |
|-----|----------------|
| 1 | V+ |
| 2 | IO1 |
| 3 | GND |
| 4 | IO-Link |
| 5 | 102 |
| 6 | 103 |
| 7 | 104 |
| 8 | GND |



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- |



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 |
|----------|----------------------------|------------------------------|---|
| 50119476 | CML720i-T05- 2240.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 | | | | |
| 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 | | | | |
| ссс | 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 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 |
|----------|--------------------|------------------|--|
| 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin 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: IO-Link, 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 |

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 |

Accessories



Mounting technology - Swivel mounts

| | Part no. | Designation | Article | Description |
|-----|----------|-------------|----------------------|---|
| ee. | 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 |

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 |
|----------|-------------|------------------|---|
| 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 website in the Download tab of the article detailed page.