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Part no.: 50120094 CML720i-R20-150.R/L-M12 Light curtain receiver



Figure can vary

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- · Dimensioned drawings
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- Suitable transmitters
- Part number code
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Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver

Technical data

| Series 720 Operating principle Throughbeam principle Device type Receiver Contains Accessories for the use of the BT-2R1 Application Object measurement Special design Crossed-beam scanning Diagonal-beam scanning Paratel-beam scanning Operating range Guaranteed operating range Operating range 0.37 m | Basic data | |
|---|-------------------------------------|---|
| Operating principle Throughbeam principle Device type Receiver Object measurement Accessories for the use of the BT-2R1 Application Object measurement Special design Crossed-beam scanning Diagonal-beam scanning Special design Crossed-beam scanning Optical data Crossed-beam scanning Optical data Derating range Optical data Derating range Operating range 0.37 m Operating range 0.11 m Measurement data Differenceita Fortective circuit Polarity re | | 720 |
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| Special design Crossed-heam scanning Dagonal-beam scanning Optical data | Spacial dosign | |
| Diagonal-beam scanning Parallel-beam scanning Operating range Operating range limit Operating range Opera | | Crossed beam scanning |
| 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 150 mm Number of beams 8 Piece(s) 3eam spacing 20 mm Wessurement date Winimum object diameter 30 mm Electrical data Protective circuit Protective circuit Polarity reversal protection Short circuit protection Short circuit protection | | Diagonal-beam scanning |
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| Operating range limit 0.2 9 m Weasurement field length 150 mm Number of beams 8 Piece(s) Beam spacing 20 mm Weasurement data | | 0.3 7 m |
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| Winimum object diameter 30 mm Electrical data Polarity reversal protection Short circuit Performance data Supply voltage Us 18 30 V , DC Residual ripple 0 15 % , From Us Open-circuit current 0 15 % , From Us Output selectable 0 135 mA , The specified values refer to the entire package con sisting of transmitter and receiver. Input/soutputs selectable 100 mA Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable 4 Piece(s) Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs DC Switching voltage, inputs DC Switching voltage, inputs high: ≥6V low: ≤4V Input/output 1 Activation/disable delay 0 1 ms | | |
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| Supply voltage UB 18 30 V , DC Residual ripple 0 15 % , From UB Open-circuit current 0 135 mA , The specified values refer to the entire package con sisting of transmitter and receiver. Inputs/outputs selectable 0 mA Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable 4 Piece(s) Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs DC Switching voltage, inputs Now: s4V Input/output 1 Activation/disable delay Activation/disable delay 0 1 ms | Protective circuit | Short circuit protected |
| Residual ripple 0 15 %, From UB Open-circuit current 0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver. Inputs/outputs selectable 0 0 mA Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable 4 Piece(s) Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs DC Switching voltage, inputs DC Switching voltage, inputs DC Switching voltage, inputs bigh: ≥6V low: ≤4V Input/output 1 Activation/disable delay Activation/disable delay 0 1 ms Cycle time 1 ms | Performance data | |
| Open-circuit current 0 135 mA , The specified values refer to the entire package con sisting of transmitter and receiver. Inputs/outputs selectable 00 mA Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable 4 Piece(s) Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs DC Switching voltage, inputs DC Input/output 1 Input/output 1 Activation/disable delay 0 1 ms Cycle time 1 ms | Supply voltage UB | 18 30 V , DC |
| isisting of transmitter and receiver. Inputs/outputs selectable Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable 4 Piece(s) Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs DC Switching voltage, inputs DC Input/output 1 Input/output 1 Activation/disable delay 0 1 ms Readiness delay 400 ms Cycle time 1 ms | Residual ripple | 0 15 % , From U _B |
| Output current, max.100 mAInput resistance $6,000 \Omega$ Number of inputs/outputs selectable 4 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsTyp. UB / 0 VVoltage type, inputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCSwitching voltage, inputs $high: \geq 6V$ low: $\leq 4V$ Input/output 1Activation/disable delay $0 \dots 1$ msTimingReadiness delay 400 msCycle time 1 ms | Open-circuit current | - ··· · · · · · · · · · · · · · · · · · |
| Input resistance 6,000 Ω Number of inputs/outputs selectable 4 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 DC Switching voltage, inputs DC Switching voltage, inputs DC Switching voltage, inputs 0 1 ms | Inputs/outputs selectable | |
| Number of inputs/outputs selectable 4 Piece(s) Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs Typ. UB / 0 V Voltage type, inputs DC Switching voltage, inputs DC Switching voltage, inputs DC Input/output 1 Input/output 1 Activation/disable delay 0 1 ms Timing 400 ms Cycle time 1 ms | Output current, max. | 100 mA |
| Type Inputs/outputs selectable Voltage type, outputs DC Switching voltage, outputs Typ. U _B / 0 V Voltage type, inputs DC Switching voltage, inputs DC Switching voltage, inputs DC Input/output 1 | Input resistance | 6,000 Ω |
| Voltage type, outputs DC Switching voltage, outputs Typ. U _B / 0 V Voltage type, inputs DC Switching voltage, inputs DC Switching voltage, inputs high: ≥6V low: ≤4V Input/output 1 Activation/disable delay 0 1 ms | Number of inputs/outputs selectable | 4 Piece(s) |
| Switching voltage, outputs Typ. U _B / 0 V Voltage type, inputs DC Switching voltage, inputs high: ≥6V low: ≤4V Input/output 1 0 1 ms Activation/disable delay 0 1 ms | Туре | Inputs/outputs selectable |
| Voltage type, inputs DC Switching voltage, inputs high: ≥6V low: ≤4V Input/output 1 0 1 ms Activation/disable delay 0 1 ms | Voltage type, outputs | |
| Switching voltage, inputs high: ≥6V low: ≤4V Input/output 1 0 1 ms Activation/disable delay 0 1 ms Timing 400 ms Readiness delay 1 ms | Switching voltage, outputs | Тур. U _B / 0 V |
| Input/output 1 Activation/disable delay 0 1 ms | Voltage type, inputs | DC |
| Input/output 1 Activation/disable delay 0 1 ms Timing Readiness delay 400 ms Cycle time 1 ms | Switching voltage, inputs | |
| Activation/disable delay 0 1 ms Timing Readiness delay 400 ms Cycle time 1 ms | Input/output 1 | |
| Readiness delay 400 ms Cycle time 1 ms | | 0 1 ms |
| Readiness delay 400 ms Cycle time 1 ms | Timing | |
| Cycle time 1 ms | - | 400 ms |
| · | | |
| | Response time per beam | 30 µs |

Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199

Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver

| Interface | | | | |
|-----------------------|------------------------------|--|--|--|
| Туре | IO-Link | | | |
| IO-Link | IU-LIIK | | | |
| COM mode | COM2 | | | |
| Specification | V1.0.1 | | | |
| Specification | V1.1 | | | |
| Min. cycle time | COM2 = 2.3 ms | | | |
| | | | | |
| Service interface | | | | |
| Туре | 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 | | | |
| Туре | 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 183 mm | | | |
| Housing material | Metal , Aluminum | | | |
| Lens cover material | Plastic | | | |
| Net weight | 400 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) | | | |

Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver

| 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 | 111 | | | |
| Certifications | c CSA US | | | |
| Standards applied | IEC 60947-5-2 | | | |
| Classification | | | | |
| Customs tariff number | 90314990 | | | |
| eCl@ss 8.0 | 27270910 | | | |
| eCl@ss 9.0 | 27270910 | | | |
| ETIM 5.0 | EC002549 | EC002549 | | |

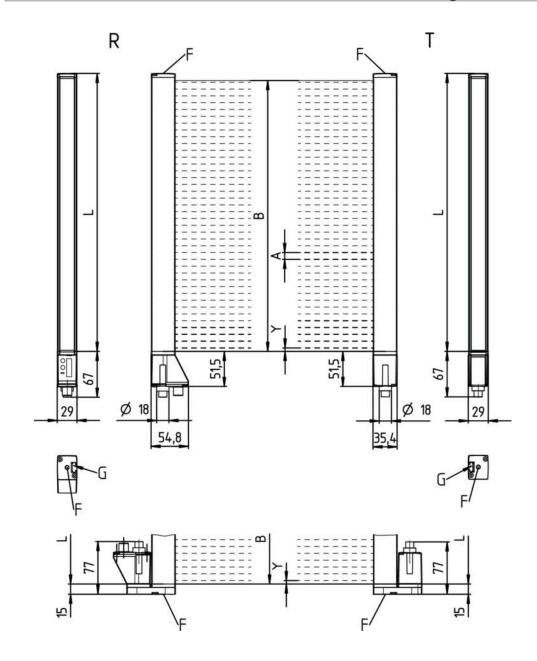
EC002549

Dimensioned drawings

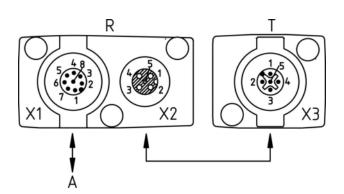
All dimensions in millimeters

ETIM 6.0

Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver



- A Beam spacing 20 mm B Measurement field length 150 mm
- F M6 thread
- G Fastening groove
- L Profile length 168 mm
- T Transmitter
- R Receiver
- Y 5 mm



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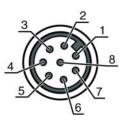
Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver

A PWR / SW IN/OUT

Electrical connection

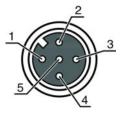
| Connection 1 | | |
|--------------------|--|--|
| Function | Configuration interface Signal IN Signal OUT Voltage supply | |
| Type of connection | Connector | |
| Thread size | M12 | |
| Туре | Male | |
| Material | Metal | |
| No. of pins | 8 -pin | |
| Encoding | A-coded | |

| Pin | Pin assignment |
|-----|----------------|
| 1 | V+ |
| 2 | 101 |
| 3 | GND |
| 4 | IO-Link |
| 5 | IO2 |
| 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- |



Part no.: 50120094 - CML720i-R20-150.R/L-M12 - Light curtain receiver

Operation and display

LEDs

| LED | Display | Meaning |
|-----|--------------------------|--|
| 1 | Green, continuous light | Operational readiness |
| | Green, flashing | Teach / error |
| | | Measurement frequency display |
| 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 |
|----------|---------------------------|------------------------------|---|
| 50119505 | CML720i- T20-150.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 | | | |
| 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 | | | |
| 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 with all available device types can be found on the Leuze electronic website at www.leuze.com.

Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver

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 |
|---|----------|------------------------|---------|--|
| 5 | | KD S-M12-8A- P1-050 | | 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 | 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 |

Part no.: 50120094 – CML720i-R20-150.R/L-M12 – Light curtain receiver

Mounting technology - Swivel mounts

| | Part no. | Designation | Article | Description |
|-----|----------|-------------|---------|--|
| ęł. | 429046 | BT-2R1 | set | Contains: 2x BT-R swivel mount, 1 cylinder 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 |

| Part no. | Designation | Article | Description |
|----------|---------------------------------|---------|--|
| 50121098 | SET MD12-US2-IL1.1 + Zub. | | 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 electronic website in the Download tab of the article detailed page.