

Technical data sheet Light curtain receiver Part no.: 50123566 CML720i-R20-2870.A/D3-M12



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 changes

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 eng • 2025-04-04

Technical data

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| Operating principle Throughbeam principle Device type Receiver Contains 2x BT-NC sliding block Application Object measurement Special version Crossed-beam scanning Deprating range 0.37 m Operating range 0.37 m Operating range 0.37 m Operating range 0.37 m Operating range 0.29 m Operating range 0.29 m Operating range 0.29 m Operating range limit Typical operating range Massurement field length 2.870 mm Number of beams 144 Piece(s) Beam spacing 20 mm Measurement data 30 mm Electrical data Polarity reversal protection Short circuit protection Short circuit protection Short circuit in tropice data Supply voltage Ug Supply voltage Ug 1830 V.DC Residual ripple 0455 mA.The specified values re to the entire package consisting of tra mitter and receiver. Input foutput selectable 2 Piece(s) | Basic data | |
|--|-------------------------------|---|
| Device type Receiver Contains 2x BT-NC sliding block Application Object measurement Special version Crossed-beam scanning Diagonal-beam scanning Special version Crossed-beam scanning Operating range 0.3 7 m Operating range 0.3 7 m Operating range 0.2 9 m Operating range limit 0.2 9 m Operating range limit 2.870 mm Number of beams 144 Piece(s) Beam spacing 20 mm Measurement field length 2.870 mm Number of beams 144 Piece(s) Beam spacing 20 mm Measurement data 30 mm Electrical data Polarity reversal protection Short circuit protected Transient protection Short circuit current 0 435 mA. The specified values re to the entire package consisting of tramiter and receiver. Input soutputs selectable Operating range Open-circuit current 0435 mA. The specified values re to the entire package consisting of tramiter and receiver. Input resistance 6,000 Q <th>Series</th> <th>720</th> | Series | 720 |
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| Special version Special version Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Operating range Measurement field length 2,870 mm Number of beams 144 Piece(s) Beam spacing 20 mm Measurement data Minimum object diameter Supply voltage Ug Number of input selectable Open-circuit current Input selectable Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable 2 Piece(s) Type Input/output 1 Activation/disable delay 1 ms Time behavior Cycle time 4.72 ms Response time per beam 30 μs | Contains | 2x BT-NC sliding block |
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| 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 reto the entire package consisting of tramitter and receiver. Inputs/outputs selectable 00 mA 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, inputs Typ. U _B / 0 V Switching voltage, inputs Typ. U _B / 0 V Input/output 1 Activation/disable delay 1 ms Cycle time 4.72 ms Response time per beam 30 µs Interface Type Type RS 485 | | |
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| Input/output 1 Activation/disable delay 1 ms Time behavior 4.72 ms Cycle time 4.72 ms Response time per beam 30 μs Interface 1 Type RS 485 Modbus | contening voltage, inputs | • |
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| Activation/disable delay 1 ms Time behavior Cycle time 4.72 ms Response time per beam 30 µs Interface Type RS 485 Modbus | Input/output 1 | |
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| Cycle time 4.72 ms Response time per beam 30 µs Interface Interface Type RS 485 Modbus RS 485 Interface | Time behavior | |
| Response time per beam 30 µs Interface Type RS 485 Modbus RS 485 | | 4.70 mg |
| Interface Type RS 485 Modbus RS 485 | • | |
| Type RS 485 Modbus RS 485 | response unie per beam | ου μο |
| RS 485 | Interface | |
| | Туре | RS 485 Modbus |
| Function Process | RS 485 | |
| | Function | Process |

| Service interface | |
|--------------------------------|------------------------------|
| Туре | IO-Link |
| IO-Link | |
| Function | Configuration via software |
| | Service |
| Connection | |
| Number of connections | 2 Piece(s) |
| Plug outlet | Axial |
| | |
| Connection 1 Function | Configuration interface |
| Function | 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 |
| | BUSOUT |
| Type of connection | Connector |
| Thread size | M12 Female |
| Type Material | Metal |
| No. of pins | 5 -pin |
| Encoding | B-coded |
| Liboanig | |
| Mechanical data | |
| Design | Cubic |
| Dimension (W x H x L) | 29 mm x 35.4 mm x 2,955 mm |
| Housing material | Metal |
| Metal housing | Aluminum |
| Lens cover material | Plastic |
| Net weight | 2,900 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 |
| | |
| | |

Technical data

Certifications

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

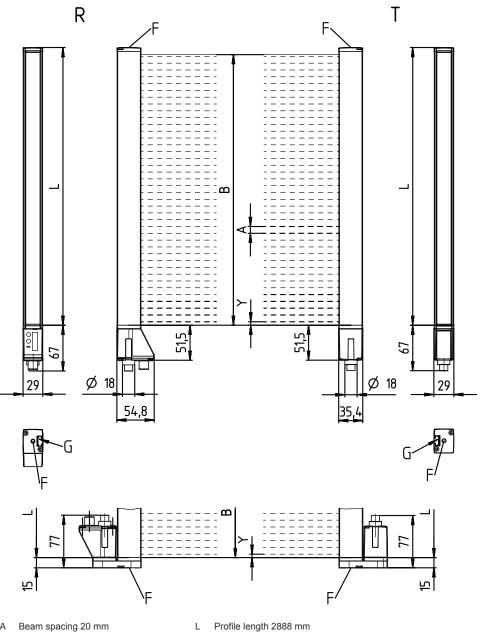
Classification

| 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 |
| 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



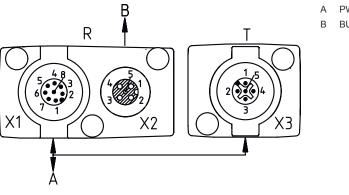
- Beam spacing 20 mm А
- В Measurement field length 2870 mm
- F M6 thread G Fastening groove
- Transmitter
- R Receiver
- 5 mm Υ

Т

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Dimensioned drawings





A PWR / SW IN / OUT B BUS IN / OUT

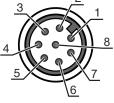
Electrical connection

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

Pin Pin assignment 1 V+ 2 Tx 3 PB GND 4 Tx+ 5 FE/SHIELD



| 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 |
|--------------|----------------------------|------------------------------|---|
| 50119440 | CML720i-T20- 2870.A-M12 | Light curtain transmitter | Operating range: 0.3 7 m Connection: Connector, M12, Axial, 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: 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 | ^t ⊗ 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 Connector, LED: No 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

Leuze

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 |

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