## SMART SENSOR BUSINESS

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Part no.: 50120194 CML720i-R20-2710.R/CV-M12 Light curtain receiver



Figure can vary

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## Part no.: 50120194 – CML720i-R20-2710.R/CV-M12 – Light curtain receiver

#### **Technical data**

| 720   |
|---|
| Throughbeam principle   |
| Receiver  |
| Accessories for the use of the BT-2R1   |
| Object measurement  |
| ,   |
|   |
| Crossed-beam scanning<br>Diagonal-beam scanning<br>Parallel-beam scanning                           |
|   |
| Guaranteed operating range  |
| 0.3 7 m   |
| Typical operating range   |
| 0.2 9 m   |
| 2,710 mm  |
| 136 Piece(s)  |
| 20 mm   |
|   |
|   |
| 30 mm   |
|   |
|   |
| Polarity reversal protection<br>Short circuit protected<br>Transient protection                     |
|   |
| 18 30 V , DC  |
| 0 15 % , From U <sub>B</sub>  |
| 0 435 mA , The specified values refer to the entire package consisting of transmitter and receiver. |
|   |
| 2 Piece(s)  |
|   |
| 0 24 mA   |
| 0 11 V  |
|   |
|   |
| Voltage   |
| Voltage   |
|   |

## Part no.: 50120194 – CML720i-R20-2710.R/CV-M12 – Light curtain receiver

| Inputs/outputs selectable  |   |
|--|---|
|  | 100 mA  |
| Output current, max.   |   |
| 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 <sub>B</sub> / 0 V   |
| Voltage type, inputs   | DC  |
| Switching voltage, inputs  | high: ≥6V<br>Iow: ≤4V   |
| Input/output 1   |   |
| Activation/disable delay   | 1 ms  |
| ïming  |   |
| Readiness delay  | 450 ms  |
| Cycle time   | 4.48 ms   |
| Response time per beam   | 30 µs   |
|  |   |
| Service interface  |   |
| уре  | IO-Link   |
| IO-Link  |   |
| Function   | Configuration via software<br>Service   |
|  |   |
| Connection   | 2 Piece(s)  |
| Plug outlet  | Rear side   |
| Connection 1   |   |
|  | Configuration interface   |
| Function   | Configuration interface<br>Signal IN  |
|  | Signal OUT  |
|  | Voltage supply  |
| Type of connection   | Connector   |
| Thread size  |   |
|  | M12   |
| Туре   | Male  |
| Type<br>Material   | Male<br>Metal   |
| Type<br>Material<br>No. of pins  | Male<br>Metal<br>8 -pin   |
| Type<br>Material<br>No. of pins<br>Encoding  | Male<br>Metal   |
| Type<br>Material<br>No. of pins<br>Encoding<br>Connection 2  | Male<br>Metal<br>8 -pin<br>A-coded  |
| Type<br>Material<br>No. of pins<br>Encoding<br>Connection 2<br>Function  | Male<br>Metal<br>8 -pin<br>A-coded<br>Connection to transmitter   |
| Type<br>Material<br>No. of pins<br>Encoding<br>Connection 2<br>Function<br>Type of connection  | Male<br>Metal<br>8 -pin<br>A-coded<br>Connection to transmitter<br>Connector                                      |
| Type<br>Material<br>No. of pins<br>Encoding<br>Connection 2<br>Function  | Male<br>Metal<br>8 -pin<br>A-coded<br>Connection to transmitter   |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection  | Male<br>Metal<br>8 -pin<br>A-coded<br>Connection to transmitter<br>Connector                                      |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection   Thread size  | Male<br>Metal<br>8 -pin<br>A-coded<br>Connection to transmitter<br>Connector<br>M12                               |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection   Thread size   Type                                     | Male   Metal   8 -pin   A-coded   Connection to transmitter   Connector   M12   Female                            |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection   Thread size   Type   Material                          | Male   Metal   8 -pin   A-coded   Connection to transmitter   Connector   M12   Female   Metal                    |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection   Thread size   Type   Material   No. of pins            | Male   Metal   8 -pin   A-coded   Connection to transmitter   Connector   M12   Female   Metal   5 -pin           |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection   Thread size   Type   Material   No. of pins   Encoding | Male   Metal   8 -pin   A-coded   Connection to transmitter   Connector   M12   Female   Metal   5 -pin           |
| Type   Material   No. of pins   Encoding   Connection 2   Function   Type of connection   Thread size   Type   Material   No. of pins   Encoding | Male   Metal   8 -pin   A-coded   Connection to transmitter   Connector   M12   Female   Metal   5 -pin   A-coded |

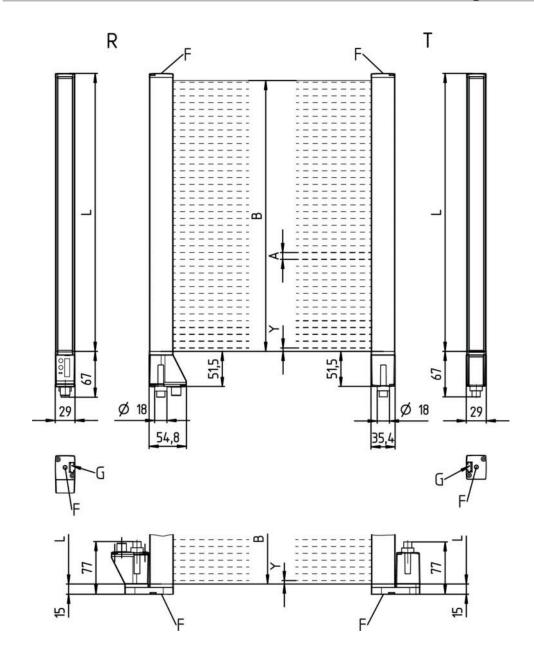
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| Lens cover material            | Plastic   |
|--------------------------------|---|
| Net weight                     | 2,800 g   |
| Housing color                  | Silver  |
| Type of fastening              | Groove mounting<br>Via optional mounting device |
|                                |   |
| Operation and display          |   |
| Type of display                | LED<br>OLED display                             |
| Number of LEDs                 | 2 Piece(s)                                      |
| Type of configuration          | Software<br>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   |
| 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  |
| ETIM 6.0                       | EC002549  |
|                                |   |

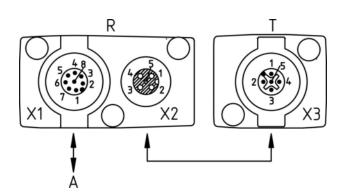
### **Dimensioned drawings**

All dimensions in millimeters

Part no.: 50120194 – CML720i-R20-2710.R/CV-M12 – Light curtain receiver



- A Beam spacing 20 mm B Measurement field length 2710 mm
- F M6 thread
- G Fastening groove
- L Profile length 2728 mm
- T Transmitter
- R Receiver
- Y 5 mm



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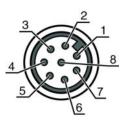
## Part no.: 50120194 – CML720i-R20-2710.R/CV-M12 – Light curtain receiver

A PWR / SW IN/OUT

### **Electrical connection**

| Connection 1       |  |  |  |  |
|--------------------|--|--|--|--|
| Function           | Configuration interface<br>Signal IN<br>Signal OUT<br>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   | OUT V          |
| 7   | OUT mA         |
| 8   | AGND           |



| 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-     |  |  |  |



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### **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   |
|----------|----------------------------|------------------------------|---|
| 50119521 | CML720i-<br>T20-2710.R-M12 | Light curtain<br>transmitter | Operating range: 0.3 6 m<br>Connection: Connector, M12, Rear side, 5 -pin |

#### Part number code

#### Part designation: CML7XXi-YZZ-AAAA.BCCCDDD-EEEFFF

| CML  | Operating principle:<br>Measuring light curtain  |  |  |  |  |  |
|------|--|--|--|--|--|--|
| 7XXi | Series:<br>720i: 720i series<br>730i: 730i series  |  |  |  |  |  |
| Y    | Device type:<br>T: transmitter<br>R: receiver  |  |  |  |  |  |
| ZZ   | Beam spacing:<br>05: 5 mm<br>10: 10 mm<br>20: 20 mm<br>40: 40 mm   |  |  |  |  |  |
| AAAA | Measurement field length [mm], dependent on beam spacing   |  |  |  |  |  |
| В    | Equipment:<br>A: connector outlet, axial<br>R: rear connector outlet   |  |  |  |  |  |
| CCC  | Interface:<br>L: IO-Link<br>/CN: CANopen<br>/PB: PROFIBUS<br>/PN: PROFINET<br>/CV: Analog current and voltage output<br>/D3: RS 485 Modbus |  |  |  |  |  |
| DDD  | Special equipment:<br>-PS: Power Setting   |  |  |  |  |  |
| EEE  | Electrical connection:<br>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.

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#### 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  |
|----|----------|------------------------|---------|--|
| 50 |          | KD S-M12-8A-<br>P1-050 |         | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

### Connection technology - Interconnection cables

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

## Mounting technology - Mounting brackets

| Part no. | Designation    | Article                | Description  |
|----------|----------------|------------------------|--|
| 50142900 | BT 700M.5-2SET | Mounting device<br>set | Contains: 2x mounting brackets, 1 teach template, 4 M6 x 10<br>screws<br>Design of mounting device: Bracket mounting<br>Fastening, at system: Through-hole mounting, T slotted hole<br>Mounting bracket, at device: Screw type, Sliding block<br>Type of mounting device: Rigid<br>Material: Steel |

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## Mounting technology - Swivel mounts

|     | Part no. | Designation | Article              | Description  |
|-----|----------|-------------|----------------------|--|
| ęł. | 429046   | BT-2R1      | Mounting bracket set | Contains: 2x BT-R swivel mount, 1 cylinder for mounting on the<br>light curtain<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

| Part no. | Designation                     | Article | Description  |
|----------|---------------------------------|---------|--|
| 50121098 | SET<br>MD12-US2-IL1.1<br>+ Zub. |         | Interface: USB<br>Connections: 2 Piece(s)<br>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:<br>max. 10 hours.<br>Conditions: Devices and connection cables are already<br>mounted, price not including travel costs and, if applicable,<br>accommodation expenses.<br>Restrictions: No mechanical (mounting) and electrical (wiring)<br>work performed, no changes (attachments, wiring,<br>programming) to third-party components in the nearby<br>environment. |
| S981005  | CS10-T-110  | Product training | Details: Location and content to be agreed upon, duration: max.<br>10 hours.<br>Conditions: Price not including travel costs and, if applicable,<br>accommodation expenses.<br>Restrictions: Travel costs and accommodation expenses<br>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.