

# **Technical data sheet** Light curtain receiver

Part no.: 50119874

CML720i-R40-1890.A/CV-M12



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- Operation and display
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### **Technical data**



#### Basic data

| Series              | 720                    |
|---------------------|------------------------|
| Operating principle | Throughbeam principle  |
| Device type         | Receiver               |
| Contains            | 2x BT-NC sliding block |
| 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          | 0.3 7 m                    |
| Operating range limit    | Typical operating range    |
| Operating range limit    | 0.2 9 m                    |
| Measurement field length | 1,890 mm                   |
| Number of beams          | 47 Piece(s)                |
| Beam spacing             | 40 mm                      |
|                          |                            |

#### Measurement data

| Minimum ob | iect diameter | 50 mm |
|------------|---------------|-------|
|            |               |       |

### **Electrical data** Protective circuit

|          | Short circuit protected |
|----------|-------------------------|
|          | Transient protection    |
| <b>5</b> |                         |

Polarity reversal protection

### Performance data

| Supply voltage U <sub>B</sub> | 18 30 V, DC  |
|-------------------------------|--|
| Residual ripple               | 0 15 %, From U <sub>B</sub>  |
| Open-circuit current          | 0 350 mA, The specified values refer<br>to the entire package consisting of trans-<br>mitter and receiver. |

### Outputs

### **Analog outputs**

| Current | 0 24 mA |
|---------|---------|
| Voltage | 0 11 V  |

### Analog output 1

| туре | voitage |
|------|---------|
|      |         |

### Analog output 2

| Type | Current |
|------|---------|
|      |         |

### Inputs/outputs selectable

| Output current, max.                | 100 mA                    |
|-------------------------------------|---------------------------|
| Input resistance                    | 6,000 Ω                   |
| Number of inputs/outputs selectable | 2 Piece(s)                |
| Туре                                | 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                 |

low: ≤4V

| Input/output 1           |
|--------------------------|
| Activation/disable delay |

| Timing                 |         |
|------------------------|---------|
| Readiness delay        | 450 ms  |
| Cycle time             | 1.81 ms |
| Response time per beam | 30 μs   |

1 ms

#### 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 |
|--------------------|-------------------------|
|                    | 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

| Connection to transmitter |
|---------------------------|
| Connector                 |
| M12                       |
| Female                    |
| Metal                     |
| 5 -pin                    |
| A-coded                   |
|                           |

### **Mechanical data**

| Design                | Cubic                        |
|-----------------------|------------------------------|
| Dimension (W x H x L) | 29 mm x 35.4 mm x 1,995 mm   |
| Housing material      | Metal                        |
| Metal housing         | Aluminum                     |
| Lens cover material   | Plastic                      |
| Net weight            | 2,050 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 |

# **Technical data**



### **Environmental data**

| Ziivii oiiiioiitai aata        |               |  |
|--------------------------------|---------------|--|
| 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 5.1.4          | 27270910 |
| eCl@ss 8.0            | 27270910 |
| eCl@ss 9.0            | 27270910 |
| eCl@ss 10.0           | 27270910 |
| eCI@ss 11.0           | 27270910 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |

# **Dimensioned drawings**

Leuze

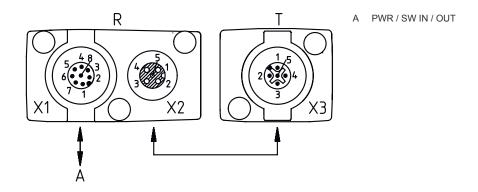
All dimensions in millimeters



- A Beam spacing 40 mm
- B Measurement field length 1890 mm
- F M6 thread
- G Fastening groove
- L Profile length 1928 mm
- T Transmitter
- R Receiver
- Y 5 mm

# **Dimensioned drawings**



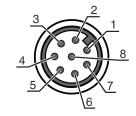


# **Electrical connection**

### **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                 |

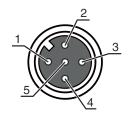
| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 2   | 1/0 1          |
| 3   | GND            |
| 4   | IO-Link        |
| 5   | I/O 2          |
| 6   | OUT V          |
| 7   | OUT mA         |
| 8   | AGND           |
|     |                |



### **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-     |







| 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   |
|----------|----------------------------|------------------------------|---|
| 50119446 | CML720i-T40-<br>1890.A-M12 | Light curtain<br>transmitter | Operating range: 0.3 6 m<br>Connection: Connector, M12, Axial, 5 -pin |

# Part number code

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

| CML  | Operating principle Measuring light curtain   |  |  |  |  |  |
|------|---|--|--|--|--|--|
| 7XXi | <b>Series</b> 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<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  |
|--|----------|---------------------------------|-----------------------|--|
|  | 50129781 | KDS DN-M12-5A-<br>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<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

# Configuration devices

| Part no. | Designation                  | Article         | Description  |
|----------|------------------------------|-----------------|--|
| 50121098 | SET MD12-US2-IL1.1<br>+ 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.