



the sensor people





Figure can vary

Part no.: 50131805 CML730i-R20-2230.R/PN-M12 Light curtain receiver





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Technical data

| Basic data | |
|-------------------------------------|---|
| Series | 730 |
| Operating principle | Throughbeam principle |
| Device type | Receiver |
| Contains | Accessories for the use of the BT-2R1 |
| Application | Detection of transparent objects Object measurement |
| Optical data | |
| Operating range | Guaranteed operating range |
| Operating range | 0.3 9.5 m |
| Operating range, transparent media | 0.3 3.5 m |
| Operating range limit | Typical operating range |
| Operating range limit | 0.2 12 m |
| Measurement field length | 2,230 mm |
| Number of beams | 112 Piece(s) |
| Beam spacing | 20 mm |
| | |
| Measurement data | |
| Minimum object diameter | 30 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 transmitter and receiver. |
| 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 _B / 0 V |
| Voltage type, inputs | DC |
| Switching voltage, inputs | high: ≥6V low: ≤4V |
| Input/output 1 | |
| Activation/disable delay | 1 ms |
| Timing | |
| Readiness delay | 1,500 ms |
| Cycle time | 1.27 ms |
| Response time per beam | 10 μs |

Interface



| Туре | PROFINET |
|-----------------------|---|
| Profinet | |
| Function | Process |
| Conformance class | В |
| Protocol | PROFINET RT |
| Switch functionality | Integrated |
| Transmission speed | 10 Mbit/s |
| | 100 Mbit/s |
| Service interface | |
| Туре | IO-Link |
| IO-Link | |
| Function | Configuration via software Service |
| Connection | |
| Number of connections | 3 Piece(s) |
| Plug outlet | Rear side |
| Connection 1 | real side |
| 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 |
| Connection 2 | |
| Function | BUS IN |
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |
| Connection 3 | |
| Function | BUS OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |
| Mechanical data | |
| Design | Cubic |
| Dimension (W x H x L) | 29 mm x 35.4 mm x 2,263 mm |
| Housing material | Metal , 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 | 4 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 |
| Certifications | |
| Degree of protection | IP 65 |
| Protection class | III |
| Certifications | c CSA US |
| | |

| Classification | | |
|-----------------------|----------|--|
| Customs tariff number | 90314990 | |
| eCl@ss 8.0 | 27270910 | |
| eCl@ss 9.0 | 27270910 | |
| ETIM 5.0 | EC002549 | |
| ETIM 6.0 | EC002549 | |

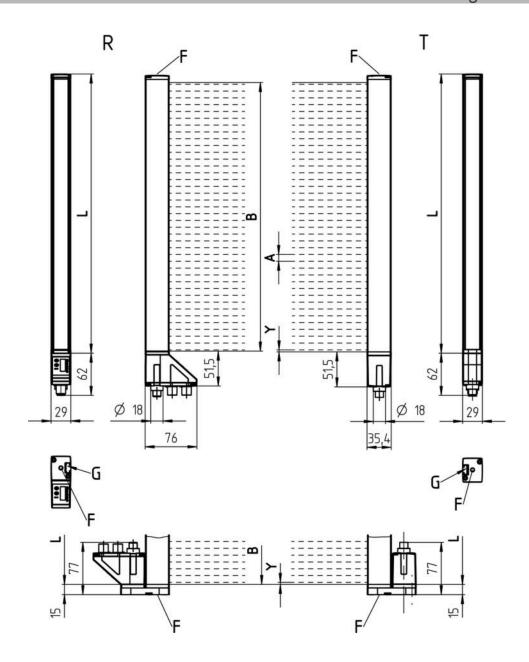
IEC 60947-5-2

Dimensioned drawings

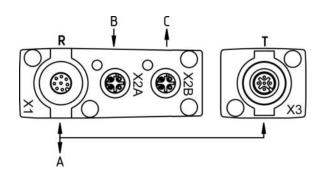
All dimensions in millimeters

Standards applied





- A Beam spacing 20 mm B Measurement field length 2230 mm
- F M6 thread
- G Fastening groove
- L Profile length 2248 mm
- T Transmitter
- R Receiver
- Y 5 mm



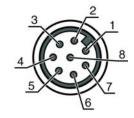


A PWR / SW IN/OUT B BUS IN C BUS OUT

Electrical connection

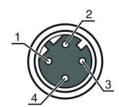
| Connection 1 | X1 | |
|--------------------|---|--|
| Function | Configuration interface Connection to transmitter Signal IN Signal OUT Voltage supply | |
| Type of connection | Connector | |
| Thread size | M12 | |
| Туре | Male | |
| Material | Metal | |
| No. of pins | 8 -pin | |
| Encoding | A-coded | |

| 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 | X2A |
|--------------------|-----------|
| Function | BUS IN |
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | TD0+ |
| 2 | RD0+ |
| 3 | TD0- |
| 4 | RD0- |

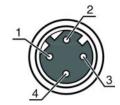


| Connection 3 | X2B |
|--------------------|-----------|
| Function | BUS OUT |
| Type of connection | Connector |
| Thread size | M12 |
| Туре | Female |



| Connection 3 | X2B |
|--------------|---------|
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | D-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | TD0+ |
| 2 | RD0+ |
| 3 | TD0- |
| 4 | RD0- |



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 |
| 3 | Green, continuous light (at the X2A / X2B connector) | Link |
| 4 | Yellow, continuous light (at the X2A / X2B connector) | Activity |

Suitable transmitters

| Part no. | Designation | Article | Description |
|----------|----------------------------|------------------------------|---|
| 50118979 | CML730i- T20-2230.R-M12 | Light curtain transmitter | Operating range: 0.3 9.5 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 |
| Y | Device type: T: transmitter R: receiver |

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| 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.

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 Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

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| Part no. | Designation | Article | Description |
|----------|-------------------------|------------------|--|
| 50135074 | KS ET-M12-4A- P7-050 | Connection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

Connection technology - Interconnection cables

| Part no. | Designation | Article | Description |
|----------|---------------------------------|-----------------------|--|
| 50135081 | KSS ET-M12-4A- RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

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 |

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 |

Mounting technology - Swivel mounts

| | Part no. | Designation | Article | Description |
|-----|----------|-------------|----------------------|---|
| EE. | 429046 | BT-2R1 | Mounting bracket 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. | Diagnostics set | Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20 |

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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.