

## Technical data sheet Light curtain receiver

Part no.: 50131690

CML730i-R05-1440.A/PN-M12

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- Electrical connection
- Operation and display
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For illustration purposes only



Technical data

Basic data

|                     |                                  |
|---------------------|----------------------------------|
| Series              | 730                              |
| Operating principle | Throughbeam principle            |
| Device type         | Receiver                         |
| Contains            | 2x BT-NC sliding block           |
| Application         | Detection of transparent objects |
|                     | Object measurement               |

Special version

|                 |                        |
|-----------------|------------------------|
| Special version | Crossed-beam scanning  |
|                 | Diagonal-beam scanning |
|                 | Parallel-beam scanning |

Optical data

|                                    |                            |
|------------------------------------|----------------------------|
| Operating range                    | 0.1 ... 4.5 m              |
| Operating range                    | Guaranteed operating range |
| Operating range, transparent media | 0.1 ... 1.75 m             |
| Operating range limit              | 0.1 ... 6 m                |
| Operating range limit              | Typical operating range    |
| Measurement field length           | 1,440 mm                   |
| Number of beams                    | 288 Piece(s)               |
| Beam spacing                       | 5 mm                       |

Measurement data

|                         |       |
|-------------------------|-------|
| Minimum object diameter | 10 mm |
|-------------------------|-------|

Electrical data

|                    |                              |
|--------------------|------------------------------|
| Protective circuit | Polarity reversal protection |
|                    | Short circuit protected      |
|                    | Transient 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 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)                |
| 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                 |
|                                     | low: ≤ 4 V                |

Input/output 1

|                          |      |
|--------------------------|------|
| Activation/disable delay | 1 ms |
|--------------------------|------|

Time behavior

|                        |          |
|------------------------|----------|
| Readiness delay        | 1,500 ms |
| Cycle time             | 3.03 ms  |
| Response time per beam | 10 μs    |

Interface

|      |          |
|------|----------|
| Type | PROFINET |
|------|----------|

PROFINET

|                      |             |
|----------------------|-------------|
| Function             | Process     |
| Conformance class    | B           |
| Protocol             | PROFINET RT |
| Switch functionality | Integrated  |
| Transmission speed   | 10 Mbit/s   |
|                      | 100 Mbit/s  |

Service interface

|          |                            |
|----------|----------------------------|
| Type     | IO-Link                    |
| IO-Link  |                            |
| Function | Configuration via software |
|          | Service                    |

Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 3 Piece(s) |
| Plug outlet           | Axial      |

Connection 1

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

Connection 2

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

Connection 3

|                    |           |
|--------------------|-----------|
| Function           | BUS OUT   |
| Type of connection | Connector |
| Thread size        | M12       |
| Type               | 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 1,515 mm   |
| Housing material      | Metal                        |
| Metal housing         | Aluminum                     |
| Lens cover material   | Plastic                      |
| Net weight            | 1,600 g                      |
| Housing color         | Silver                       |
| Type of fastening     | Groove mounting              |
|                       | Via optional mounting device |

Technical data

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 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 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |

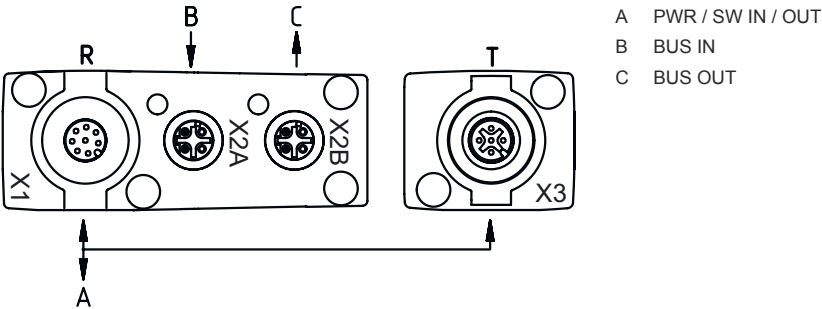
## Dimensioned drawings

All dimensions in millimeters



- |   |                                  |   |                        |
|---|----------------------------------|---|------------------------|
| A | Beam spacing 5 mm                | L | Profile length 1448 mm |
| B | Measurement field length 1440 mm | T | Transmitter            |
| F | M6 thread                        | R | Receiver               |
| G | Fastening groove                 | Y | 2.5 mm                 |

Dimensioned drawings



Electrical connection

Connection 1

X1

|                    |   |
|--------------------|---|
| Function           | Configuration interface<br>Connection to transmitter<br>Signal IN<br>Signal OUT<br>Voltage supply |
| Type of connection | Connector   |
| Thread size        | M12   |
| Type               | 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       |
| Type               | Female    |
| Material           | Metal     |
| No. of pins        | 4 -pin    |
| Encoding           | D-coded   |

Pin Pin assignment

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



Electrical connection

| Connection 3       | X2B       |
|--------------------|-----------|
| Function           | BUS OUT   |
| Type of connection | Connector |
| Thread size        | M12       |
| Type               | Female    |
| Material           | Metal     |
| No. of pins        | 4 -pin    |
| Encoding           | D-coded   |


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



Operation and display

| 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                        |
| 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   |
|---|----------|------------------------|---------------------------|---|
|  | 50118593 | CML730i-T05-1440.A-M12 | Light curtain transmitter | Operating range: 0.1 ... 4 m<br>Connection: Connector, M12, Axial, 5 -pin |

Part number code

Part designation: CML7XXi-YYZ-AAAA.BCCDDDD-EEEEFF

|      |  |
|------|--|
| 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           |
| B    | Equipment<br>A: Axial connector outlet<br>R: Rear connector outlet |


|     |  |
|-----|--|
| CCC | <b>Interface</b><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 | <b>Special equipment</b><br>-PS: Power Setting   |
| EEE | <b>Electrical connection</b><br>M12: M12 connector   |
| FFF | <b>-EX: Explosion protection</b>   |


Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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)

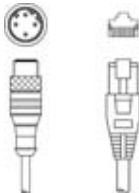
Accessories

Connection technology - Connection cables

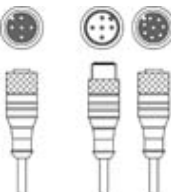
|   | Part no. | Designation         | Article          | Description  |
|---|----------|---------------------|------------------|--|
|  | 50132079 | KD U-M12-5A-V1-050  | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC                                    |
|   | 50135074 | KS ET-M12-4A-P7-050 | Connection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5.000 mm<br>Sheathing material: PUR |

## Accessories


### Connection technology - Interconnection cables

|  | Part no. | Designation                 | Article               | Description  |
|--|----------|-----------------------------|-----------------------|--|
|  | 50135081 | KSS ET-M12-4A-RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 5,000 mm<br>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<br>Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Connection 3: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Shielded: Yes<br>Cable length fork 1: 5,000 mm<br>Cable length fork 2: 150 mm<br>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<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 |


### Configuration devices

|  | Part no. | Designation               | Article         | Description  |
|--|----------|---------------------------|-----------------|--|
|  | 50121098 | SET MD12-US2-IL1.1 + Zub. | Diagnostics set | 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: max. 10 hours.<br>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.<br>Conditions: Price not including travel costs and, if applicable, accommodation expenses.  |

Accessories

| Note   |  |
|--|--|
|  | <p>A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.</p> |