## Leuze

## **Technical data sheet Light curtain receiver** Part no.: 50118812 CML730i-R40-930.A/L-M12



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### **Technical data**

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#### **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 0.3 ... 9.5 m **Operating range** Guaranteed operating range Operating range, transparent media 0.3 ... 3.5 m **Operating range limit** 0.2 ... 12 m Operating range limit Typical operating range Measurement field length 930 mm Number of beams 23 Piece(s) Beam spacing 40 mm **Measurement data** Minimum object diameter 50 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 0 ... 15 %, From U<sub>B</sub> **Residual ripple** 0 ... 215 mA, The specified values refer **Open-circuit current** to the entire package consisting of transmitter and receiver. Inputs/outputs selectable 100 mA Output current, max. Input resistance 6,000 Ω Number of inputs/outputs selectable 4 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: $\leq 4 \text{ V}$ Input/output 1 Activation/disable delay 0 ... 1 ms Time behavior Readiness delay 450 ms Cycle time 1 ms Response time per beam 10 µs Interface IO-Link Туре

|                       | IO-Link                                 | 20142                               |
|-----------------------|---|-------------------------------------|
|                       | COM mode                                | COM2<br>COM2 = 2.3 ms               |
|                       | Min. cycle time                         |                                     |
|                       | Specification                           | V1.0.1                              |
|                       |   | V1.1                                |
| S                     | ervice interface                        |                                     |
| т                     | (DO                                     | IO-Link                             |
| 1)                    | /pe                                     | IO-LINK                             |
|                       | IO-Link                                 |                                     |
|                       | Function                                | Configuration via software          |
|                       |   | Service                             |
|                       |   |                                     |
| С                     | onnection                               |                                     |
| N                     | umber of connections                    | 2 Piece(s)                          |
| PI                    | ug outlet                               | Axial                               |
|                       |   |                                     |
|                       | Connection 1<br>Function                | Configuration interface             |
|                       | Function                                | Configuration interface             |
|                       |   | Signal IN<br>Signal OUT             |
|                       |   | 0                                   |
|                       | Type of connection                      | Voltage supply<br>Connector         |
|                       | Type of connection<br>Thread size       | M12                                 |
|                       | Туре                                    | Male                                |
|                       | Material                                | Metal                               |
|                       | No. of pins                             | 8 -pin                              |
|                       | Encoding                                | A-coded                             |
|                       | Elicounig                               | A coded                             |
|                       | 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                             |
| М                     | echanical data                          |                                     |
|                       |   |                                     |
|                       | esign                                   | Cubic                               |
|                       | imension (W x H x L)<br>ousing material | 29 mm x 35.4 mm x 1,035 mm<br>Metal |
|                       | etal housing                            | Aluminum                            |
|                       | ens cover material                      | Plastic                             |
|                       | et weight                               | 1,150 g                             |
|                       | ousing color                            | Silver                              |
|                       | /pe of fastening                        | Groove mounting                     |
|                       | 5                                       | Via optional mounting device        |
|                       |   |                                     |
| Operation and display |   |                                     |
| Ту                    | /pe of display                          | LED                                 |
|                       |   | OLED display                        |
| N                     | umber of LEDs                           | 2 Piece(s)                          |
| Ту                    | pe of configuration                     | Software                            |
|                       |   | Teach-in                            |
| 0                     | perational controls                     | Membrane keyboard                   |
| Environmental data    |   |                                     |
| _                     | nvironmental data                       |                                     |
|                       | mbient temperature, operation           | -30 60 °C                           |
| A                     | mbient temperature, storage             | -40 70 °C                           |
|                       |   |                                     |
|                       |   |                                     |

### **Technical data**

#### Certifications

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

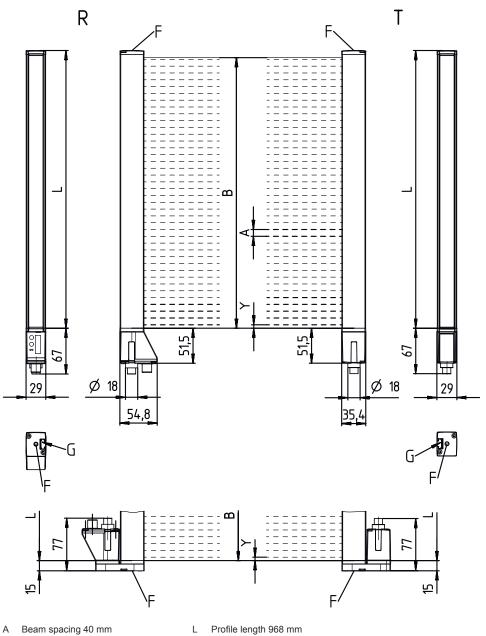
#### Classification

| 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 |
|                       |          |

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### **Dimensioned drawings**

All dimensions in millimeters



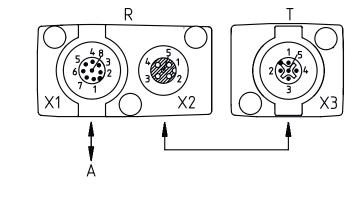
- В Measurement field length 930 mm
- т
- F M6 thread G Fastening groove
- Transmitter
- R Receiver
- Υ 5 mm

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### **Dimensioned drawings**





A PWR / SW IN / OUT

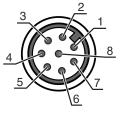
### **Electrical connection**

**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 | IO1     |
| 3 | GND     |
| 4 | IO-Link |
| 5 | 102     |
| 6 | 103     |
| 7 | 104     |
| 8 | GND     |



#### **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- |



### **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                        |

#### Suitable transmitters

| <br>Part no. | Designation               | Article                      | Description   |
|--------------|---------------------------|------------------------------|---|
| 50118649     | CML730i-T40-930.A-<br>M12 | Light curtain<br>transmitter | Operating range: 0.3 9.5 m<br>Connection: Connector, M12, Axial, 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  |  |  |
| B Equipment<br>A: Axial connector outlet<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 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.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  Only use the product in accordance with its intended use.



| Ŕ | > For UL applications | s, 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 unit

|           | Part no. | Designation               | Article        | Description  |
|-----------|----------|---------------------------|----------------|--|
| C. LEATER | 50144900 | MD 798i-11-82/L5-<br>2222 | IO-Link master | Type: IO-Link master<br>Current consumption, max.: 11,000 mA<br>Switching outputs for each sensor connection: 1 Piece(s)<br>Switching output: Transistor, PNP<br>Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP,<br>PROFINET<br>Connections: 12 Piece(s)<br>Sensor connections: 8 Piece(s)<br>Connections for voltage supply: 2 Piece(s)<br>Interface connections: 2 Piece(s)<br>Degree of protection: IP 67, IP 65, IP 69K |

#### 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>Connector, LED: No           |
|  |          |                    |                  | 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: 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 |

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### Mounting technology - Mounting brackets

| <br>Part no. | Designation    | Article             | Description   |
|--------------|----------------|---------------------|---|
| <br>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

**Accessories** 

| <br>Part no. | Designation                  | Article         | Description  |
|--------------|------------------------------|-----------------|--|
| 50121098     | SET MD12-US2-IL1.1<br>+ Zub. | Diagnostics set | Interface: USB<br>Connections: 2 Piece(s)<br>Degree of protection: IP 20 |

#### Services

| <br>Part no. | Designation | Article          | Description  |
|--------------|-------------|------------------|--|
| S981001      | CS10-S-110  | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10<br>hours.<br>Conditions: Devices and connection cables are already mounted, price not<br>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<br>expenses.   |

Note

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