

# **Technical data sheet** Light curtain receiver Part no.: 50123435 CML730i-R40-1890.R/D3-M12



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# **Technical data**

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### Basic 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   |
| 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  | 1,890 mm   |
| Number of beams   | 47 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  |
| 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. |
|   |  |
| Inputs/outputs selectable   |  |
| Number of inputs/outputs selectable                                 |  |
| Туре  | Inputs/outputs selectable  |
| Voltage type, outputs   | DC   |
| Switching voltage, outputs  | Typ. U <sub>B</sub> / 0 V  |
| Switching voltage, inputs   | high: ≥6V<br>Iow: ≤ 4 V  |
|   | 10W + V  |
| Input/output 1  |  |
|   |  |
| Time behavior   |  |
| Time behavior<br>Cycle time   | 1 ms   |
|   | 1 ms<br>10 µs  |
| Cycle time  |  |
| Cycle time<br>Response time per beam                                |  |
| Cycle time<br>Response time per beam<br>Interface                   | 10 µs  |
| Cycle time<br>Response time per beam<br>Interface<br>Type           | 10 µs  |
| Cycle time<br>Response time per beam<br>Interface<br>Type<br>RS 485 | 10 μs<br>RS 485 Modbus   |

|                    | IO-Link                               |  |  |  |  |
|--------------------|---------------------------------------|--|--|--|--|
|                    | Function                              | Configuration via software                           |  |  |  |
|                    |                                       | Service  |  |  |  |
| С                  | onnection                             |  |  |  |  |
| N                  | umber of connections                  | 2 Piece(s)   |  |  |  |
|                    | lug outlet                            | Rear side  |  |  |  |
|                    |                                       |  |  |  |  |
|                    | Connection 1                          |  |  |  |  |
|                    | Function                              | Configuration interface<br>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<br>BUS OUT                                    |  |  |  |
|                    | Type of connection                    | Connector  |  |  |  |
|                    | Thread size                           | M12  |  |  |  |
|                    | Туре                                  | Female   |  |  |  |
|                    | Material                              | Metal  |  |  |  |
|                    | No. of pins                           | 5 -pin   |  |  |  |
|                    | Encoding                              | B-coded  |  |  |  |
|                    |                                       |  |  |  |  |
| Mechanical data    |                                       |  |  |  |  |
|                    | esign                                 | Cubic  |  |  |  |
|                    | imension (W x H x L)                  | 29 mm x 35.4 mm x 1,943 mm<br>Metal                  |  |  |  |
|                    | ousing material<br>letal housing      | Aluminum   |  |  |  |
|                    | ens cover material                    | Plastic  |  |  |  |
|                    | et weight                             | 2,100 g  |  |  |  |
|                    | ousing color                          | Silver   |  |  |  |
|                    | ype of fastening                      | Groove mounting                                      |  |  |  |
|                    |                                       | Via optional mounting device                         |  |  |  |
| ~                  | meration and display                  |  |  |  |  |
| _                  | peration and display                  |  |  |  |  |
| Ty                 | ype of display                        |  |  |  |  |
|                    |                                       | OLED display   |  |  |  |
|                    | umber of LEDs<br>ype of configuration | 2 Piece(s)<br>Software                               |  |  |  |
|                    | ype of configuration                  | Teach-in   |  |  |  |
| 0                  | perational controls                   | Membrane keyboard                                    |  |  |  |
|                    |                                       |  |  |  |  |
| Environmental data |                                       |  |  |  |  |
|                    | mbient temperature, operation         | -30 60 °C  |  |  |  |
| A                  | mbient temperature, storage           | -40 70 °C  |  |  |  |
| С                  | ertifications                         |  |  |  |  |
| р                  | egree of protection                   | IP 65  |  |  |  |
|                    | rotection class                       | III  |  |  |  |
|                    | pprovals                              | c UL US  |  |  |  |
|                    | tandards applied                      | IEC 60947-5-2  |  |  |  |
|                    |                                       |  |  |  |  |
|                    |                                       |  |  |  |  |
|                    |                                       |  |  |  |  |

# **Technical data**

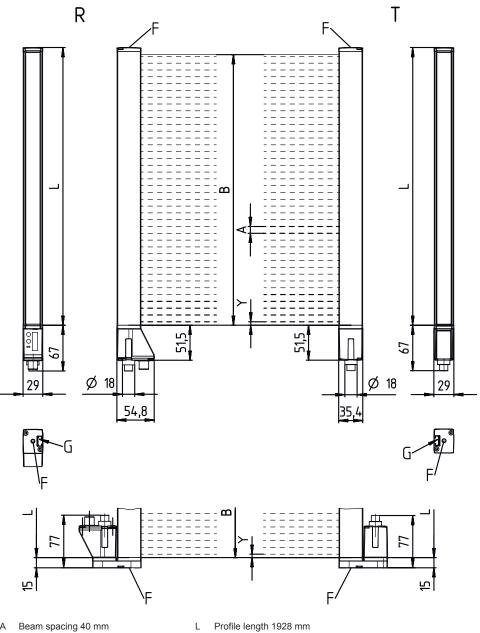
| Customs tariff number | 90314990 |
|-----------------------|----------|
| ECLASS 5.1.4          | 27270910 |
| ECLASS 8.0            | 27270910 |
| ECLASS 9.0            | 27270910 |
| ECLASS 10.0           | 27270910 |
| ECLASS 11.0           | 27270910 |
| ECLASS 12.0           | 27270910 |
| ECLASS 13.0           | 27270910 |
| ECLASS 14.0           | 27270910 |
| ECLASS 15.0           | 27270910 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |
| ETIM 10.0             | EC002549 |

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# **Dimensioned drawings**

All dimensions in millimeters



- Beam spacing 40 mm А
- В Measurement field length 1890 mm
- F M6 thread G Fastening groove
- R

Т

5 mm Υ

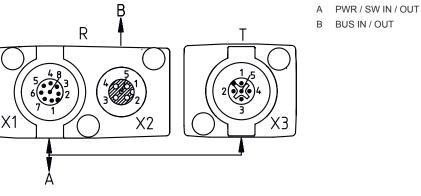
Transmitter

Receiver

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# **Dimensioned drawings**





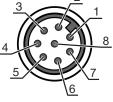
# **Electrical connection**

**Connection 1** 

| 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**

| Function           | BUS IN    |
|--------------------|-----------|
|                    | BUS OUT   |
| Type of connection | Connector |
| Thread size        | M12       |
| Туре               | Female    |
| Material           | Metal     |
| No. of pins        | 5 -pin    |
| Encoding           | B-coded   |

# **Electrical connection**

#### 

# **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   |
|--------------|----------------------------|------------------------------|---|
| 50118989     | CML730i-T40-<br>1890.R-M12 | Light curtain<br>transmitter | Operating range: 0.3 9.5 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           720i: 720i series           730i: 730i series  |
| Y    | Device type<br>T: transmitter<br>R: receiver  |
| 22   | 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: 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 |



# Part number code



| 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. |   |

## Notes

| Observe intended use!   |
|---|
| <ul> <li>This product is not a safety sensor and is not intended as personnel protection.</li> <li>The product may only be put into operation by competent persons.</li> <li>Only use the product in accordance with its intended use.</li> </ul> |



#### 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

| <br>Part no. | Designation            | Article          | Description   |
|--------------|------------------------|------------------|---|
| 50132079     | KD U-M12-5A-V1-<br>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 |

## Connection technology - Y distribution cables

|  | Part no. | Designation                 | Article               | Description  |
|--|----------|-----------------------------|-----------------------|--|
|  | 50118183 | K-Y1 M12A-5m-<br>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 |

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# Accessories

# 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 |

### Mounting technology - Swivel mounts

|     | Part no. | Designation | Article              | Description   |
|-----|----------|-------------|----------------------|---|
| RR. | 429029   | BT-2RG      | 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 |

### 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.