

# **Technical data sheet** Light curtain receiver Part no.: 50133791

CML730i-R05-960.R/CV-PS-M12



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We reserve the right to make technical changes

# **Technical data**

#### Basic data

asic data		
eries	730	
perating principle	Throughbeam principle	
evice type	Receiver	
ontains	Accessories for the use of the BT-2R1	
pplication	Detection of transparent films	
	Detection of transparent objects	
	Object detection in film tube	
	Object measurement	
	Radiation of semi-transparent media	
ptical data		
perating range	0.1 4.5 m	
perating range	Guaranteed operating range 0.1 1.75 m	
perating range, transparent media		
perating range limit	0.1 6 m	
perating range limit	Typical operating range	
easurement field length	960 mm	
umber of beams	192 Piece(s)	
eam spacing	5 mm	
easurement data		
inimum object diameter	10 mm	
lectrical data		
rotective circuit	Polarity reversal protection	
	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	$0 \dots 270$ mA, The specified values refer	
	to the entire package consisting of trans mitter and receiver.	
Outputs		
Number of analog outputs		
Number of analog outputs	1 Piece(s)	
Number of analog outputs	1 Piece(s)	
Analog outputs	1 Piece(s)	
<b>-</b> .	1 Piece(s) Analog output	
Analog outputs		
Analog outputs Type	Analog output	
Analog outputs Type Current Voltage	Analog output 0 24 mA	
Analog outputs Type Current Voltage Analog output 1	Analog output 0 24 mA 0 11 V	
Analog outputs Type Current Voltage	Analog output 0 24 mA	
Analog outputs Type Current Voltage Analog output 1 Type	Analog output 0 24 mA 0 11 V	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable	Analog output 0 24 mA 0 11 V Freely configurable	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max.	Analog output 0 24 mA 0 11 V Freely configurable 100 mA	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 Ω	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 Ω 3 Piece(s)	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 Ω 3 Piece(s) Inputs/outputs selectable	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 Ω 3 Piece(s) Inputs/outputs selectable DC	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	Analog output $0 \dots 24 \text{ mA}$ $0 \dots 11 \text{ V}$ Freely configurable 100 mA $6,000 \Omega$ 3  Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 Ω 3 Piece(s) Inputs/outputs selectable DC	
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Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 $\Omega$ 3 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V	
Analog outputs Type Current Voltage Analog output 1 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	Analog output 0 24 mA 0 11 V Freely configurable 100 mA 6,000 $\Omega$ 3 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: $\geq$ 6V	

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#### Time behavior

Readiness delay	450 ms
Cycle time	2.07 ms
Response time per beam	10 µs
Service interface	
Туре	IO-Link
IO-Link	
Function	Configuration via software
	Service
Connection	
Number of connections	2 Piece(s)
Plug outlet	Rear side
Connection 1	
Function	Configuration interface
	Signal IN
	Signal OUT
Time of comments of	Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
Connection 2	
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
Lisoung	
Mechanical data	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 983 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic
Net weight	1,200 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
Environmental data	
Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C

# **Technical data**

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#### Certifications

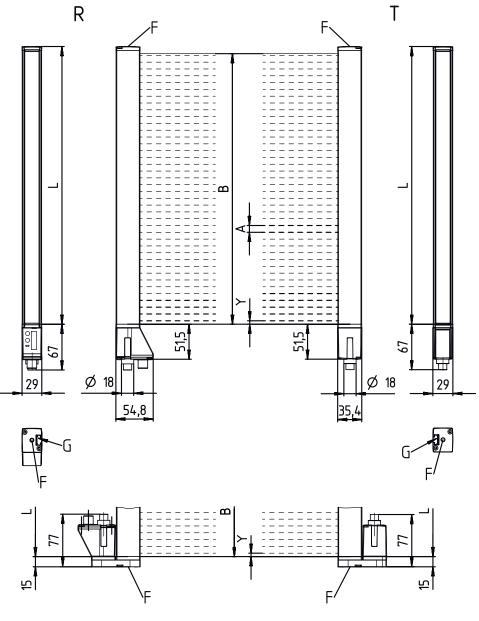
Degree of protection	IP 65
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2

#### 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
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

## **Dimensioned drawings**

All dimensions in millimeters



A Beam spacing 5 mm

- B Measurement field length 960 mm
- F M6 thread

G

Fastening groove

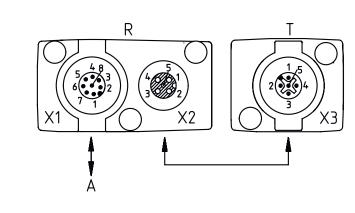
L Profile length 968 mm

- T Transmitter
- R Receiver
- Y 2.5 mm

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## **Dimensioned drawings**





A PWR / SW IN / OUT

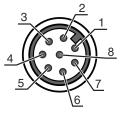
# **Electrical connection**

**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	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	I/O 3
7	OUT mA / V
8	AGND

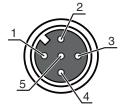


#### **Connection 2**

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-



# Operation and displav

LED 1

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eratio	on and display	LCUZC
	Display	Meaning
	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
	Yellow, continuous light	Light path free, with function reserve
	Yellow, flashing	No function reserve
	Off	Object detected

### Suitable transmitters

I	Part no.	Designation	Article	Description
	50133792	CML730i-T05-960.R- PS-M12	Light curtain transmitter	Operating range: 0.1 4.5 m Connection: Connector, M12, Rear side, 5 -pin

### Part number code

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

	Operating principle Measuring light curtain
	Series 720i: 720i series 730i: 730i series
	Device type T: transmitter R: receiver
	Beam spacing           05: 5 mm           10: 10 mm           20: 20 mm           40: 40 mm
AAAA	Measurement field length [mm], dependent on beam spacing
	Equipment A: Axial connector outlet R: Rear connector outlet
	Interface L: IO-Link /CN: CANopen /PB: PROFIBUS /PN: PROFINET /CV: Analog current and voltage output /D3: RS 485 Modbus
	Special equipment -PS: Power Setting
	Electrical connection M12: M12 connector
FFF	-EX: Explosion protection
Note	n 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.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$  The product may only be put into operation by competent persons.

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

	For UL applications:
A	<ul> <li>For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> <li>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)</li> </ul>

### 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 Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

## Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50129781	KDS DN-M12-5A- M12-5A-P3-050	Interconnection cable	Suitable for interface: 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
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	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

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### Accessories



# Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
ęę.	429029	BT-2RG	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

# Configuration devices

 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

### 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.
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.

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