



the sensor people





Figure can vary

Part no.: 50123141 CML730i-R10-1280.R/PB-M12 Light curtain receiver





Contents

- Technical data
- . Dimensioned drawings
- Electrical connection
- · Operation and display
- Suitable transmitters
- · Part number code
- Notes
- Accessories



Technical data

asic data	
eries	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 design	
Special design	Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning
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	1,280 mm
Number of beams	128 Piece(s)
Beam spacing	10 mm
Measurement data Minimum object diameter	20 mm
	20 mm
Minimum object diameter	Polarity reversal protection Short circuit protected Transient protection
Minimum object diameter Electrical data	Polarity reversal protection Short circuit protected
Minimum object diameter Electrical data Protective circuit	Polarity reversal protection Short circuit protected
Minimum object diameter Electrical data Protective circuit Performance data	Polarity reversal protection Short circuit protected Transient protection
Electrical data Protective circuit Performance data Supply voltage UB	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC
Performance data Supply voltage UB Residual ripple	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 270 mA , The specified values refer to the entire package con
Performance data Supply voltage UB Residual ripple Open-circuit current	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 270 mA , The specified values refer to the entire package con
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 270 mA , The specified values refer to the entire package con sisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max.	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 270 mA , The specified values refer to the entire package con sisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 270 mA , The specified values refer to the entire package con sisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 270 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 270 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs Voltage type, outputs	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 270 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 270 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 270 mA , The specified values refer to the entire package consisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. UB / 0 V DC high: ≥6V

1.43 ms

Cycle time



Response time per beam	10 μs		
Interface			
Туре	PROFIBUS DP		
PROFIBUS DP			
Function	Process		
Service interface			
Type	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		
	Connection to transmitter Signal IN		
	Signal OUT		
Type of connection	Voltage supply Connector		
Type of connection Thread size	M12		
	Male		
Type Material	Metal		
No. of pins	8 -pin A-coded		
Encoding Compaction 2	A-coded		
Connection 2 Function	BUS IN		
Function	BUS OUT		
Type of connection	Connector		
Thread size	M12		
Туре	Female		
Material	Metal		
No. of pins	5 -pin		
Encoding	B-coded		
Mechanical data			
Design	Cubic		
Dimension (W x H x L)	29 mm x 35.4 mm x 1,303 mm		
Housing material	Metal , Aluminum		
Lens cover material	Plastic		
Net weight	1,500 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)		

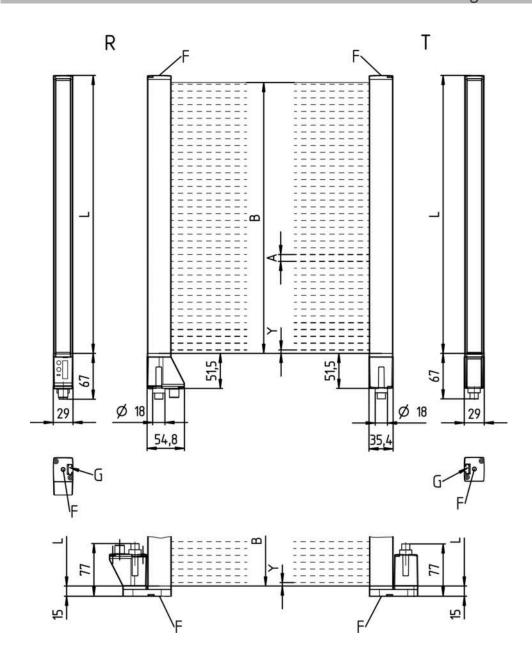


Type of configuration	Software Teach-in				
Operational controls	Membrane keyboard	Membrane keyboard			
Environmental data					
Ambient temperature, operation	-30 60 °C				
Ambient temperature, storage	-40 70 °C				
Certifications					
Degree of protection	IP 65				
Protection class	III				
Certifications	c CSA US				
Standards applied	IEC 60947-5-2	IEC 60947-5-2			
Classification					
Customs tariff number	90314990	90314990			
eCl@ss 8.0	27270910	27270910			
eCl@ss 9.0	27270910	27270910			
ETIM 5.0	EC002549	EC002549			
ETIM 6.0	EC002549	EC002549			

Dimensioned drawings

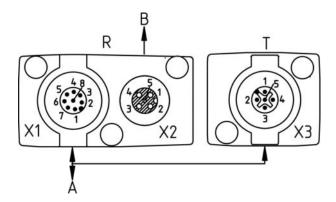
All dimensions in millimeters





- A Beam spacing 10 mm B Measurement field length 1280 mm
- F M6 thread
- G Fastening groove
- L Profile length 1288 mm
- T Transmitter
- R Receiver
- Y 5 mm



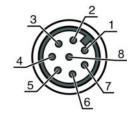


A PWR / SW IN/OUT B BUS IN / OUT

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	

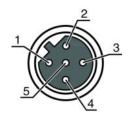
Pin	Pin assignment			
1	V+			
2	I/O 1			
3	GND			
4	IO-Link			
5	I/O 2			
6	RS 485 Tx+			
7	RS 485 Tx+			
8	FE/SHIELD			



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



Pin	Pin assignment
1	V+
2	Tx-
3	PB GND
4	Tx+
5	FE/SHIELD



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

Suitable transmitters

Part no.	Designation	Article	Description
50118956	CML730i- T10-1280.R-M12	Light curtain transmitter	Operating range: 0.3 9.5 m Connection: Connector, M12, Rear side, 5 -pin

Part number code

Part designation: ${f CML7XXi-YZZ-AAAA.BCCCDDD-EEEFFF}$

CML	Operating principle: Measuring light curtain
7XXi	Series: 720i: 720i series 730i: 730i series
Y	Device type: T: transmitter R: receiver
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

Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



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
	50123265	K-YPB M12A-5m- M12A-S-PUR	Interconnection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Male, B-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, B-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, B-coded, 5 -pin Shielded: Yes Cable length fork 1: 5,000 mm Cable length fork 2: 250 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

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.

Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



Part no.	Designation	Article	Description
\$981005	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.