



the sensor people





Figure can vary

Part no.: 50120109 CML720i-R20-2390.R/L-M12 Light curtain receiver







# **Contents**

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



### **Technical data**

Basic data	
Series	720
Operating principle	Throughbeam principle
Device type	Receiver
Contains	Accessories for the use of the BT-2R1
Application	Object measurement
application .	Object measurement
Special design	
Special design	Crossed-beam scanning
ypoolal doolgii	Diagonal-beam scanning
	Parallel-beam scanning
Optical data	
Operating range	Guaranteed operating range
Operating range	0.3 7 m
Operating range limit	Typical operating range
Operating range limit	0.2 9 m
Measurement field length	2,390 mm
Number of beams	120 Piece(s)
Beam spacing	20 mm
Seam spacing	20 111111
Measurement data	
Ainimum object diameter	30 mm
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	
Open-circuit current  Inputs/outputs selectable	0 435 mA , The specified values refer to the entire package con-
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Inputs/outputs selectable	0 435 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Inputs/outputs selectable Output current, max.	435 mA , The specified values refer to the entire package consisting of transmitter and receiver.  100 mA
Inputs/outputs selectable Output current, max. Input resistance	$0 \dots 435 \text{ mA}$ , The specified values refer to the entire package consisting of transmitter and receiver.
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Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	0 435 mA , The specified values refer to the entire package consisting of transmitter and receiver.  100 mA 6,000 Ω 4 Piece(s) Inputs/outputs selectable  DC  Typ. U <sub>B</sub> / 0 V  DC  high: ≥6V Iow: ≤4V
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs  Input/output 1 Activation/disable delay	0 435 mA , The specified values refer to the entire package consisting of transmitter and receiver.  100 mA 6,000 Ω 4 Piece(s) Inputs/outputs selectable  DC  Typ. U <sub>B</sub> / 0 V  DC  high: ≥6V Iow: ≤4V
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Interface		
Туре	IO-Link	
IO-Link	IO-LIIIK	
COM mode	COM2	
Specification	V1.0.1	
Specification	V1.0.1 V1.1	
Min. cycle time	COM2 = 2.3 ms	
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	
	Voltage supply	
Type of connection	Connector	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	8 -pin	
Encoding	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	
Mechanical data		
Design	Cubic	
Dimension (W x H x L)	29 mm x 35.4 mm x 2,423 mm	
Housing material	Metal , Aluminum	
Lens cover material	Plastic	
Net weight	2,500 g	
Housing color	Silver	
Type of fastening	Groove mounting	
	Via optional mounting device	
Operation and display	150	
Type of display	LED OLED display	
Number of LEDs	2 Piece(s)	

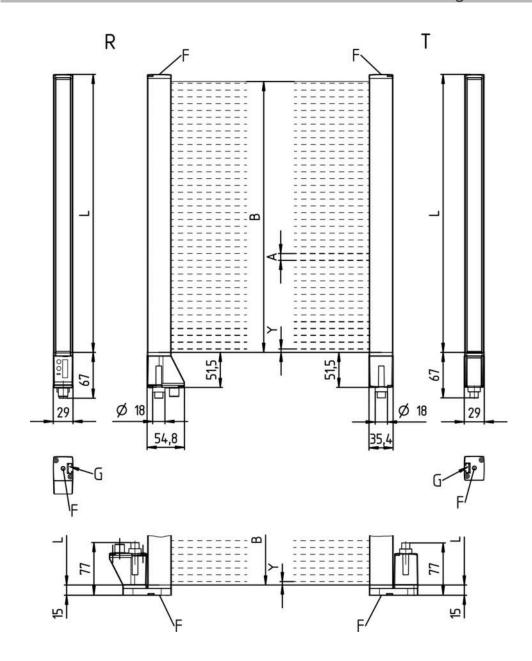


Type of configuration	Software Teach-in			
Operational controls	Membrane keyboard	Membrane keyboard		
Environmental data				
Ambient temperature, operation	-30 60 °C			
Ambient temperature, storage	-40 70 °C			
Certifications				
Degree of protection	IP 65			
Protection class	III	III		
Certifications	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			
ETIM 6.0	EC002549	EC002549		

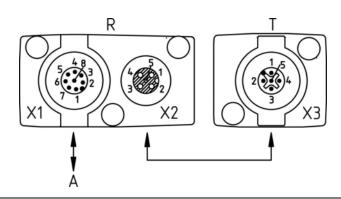
### **Dimensioned drawings**

All dimensions in millimeters





- A Beam spacing 20 mm B Measurement field length 2390 mm
- F M6 thread
- G Fastening groove L Profile length 2408 mm
- T Transmitter
- R Receiver
- Y 5 mm



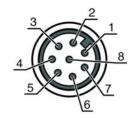


APWR / SW IN/OUT

### **Electrical connection**

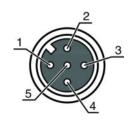
Connection 1		
Function	Configuration interface Signal IN Signal OUT Voltage supply	
Type of connection	Connector	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	8 -pin	
Encoding	A-coded	

Pin	Pin assignment
1	V+
2	101
3	GND
4	IO-Link
5	102
6	103
7	IO4
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**

### **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
50119519	CML720i- T20-2390.R-M12	Light curtain transmitter	Operating range: 0.3 6 m Connection: Connector, M12, Rear side, 5 -pin

### Part number code

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

CML	Operating principle: Measuring light curtain		
7XXi	Series: 720i: 720i series 730i: 730i series		
Υ	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:		

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
50135128	KD S-M12-8A- P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

### Connection technology - Interconnection cables

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

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## Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
EE.	429046	BT-2R1	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
166	50121098	SET MD12-US2-IL1.1 + Zub.		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.
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. 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.