



the sensor people





Figure can vary

Part no.: 50120069 CML720i-R05-2480.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
Special design	
Special design	Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning
Optical data	
Operating range	Guaranteed operating range
Operating range	0.1 3.5 m
Operating range limit	Typical operating range
Operating range limit	0.1 4.5 m
Measurement field length	2,480 mm
lumber of beams	496 Piece(s)
Beam spacing	5 mm
fleasurement data	
/linimum object diameter	10 mm
Electrical data	
Protective circuit	Polarity reversal protection Short circuit protected Transient protection
Performance data	
Supply voltage U _B	18 30 V , DC
Residual ripple	0 15 % , From U _B
Open-circuit current	0 435 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Inputs/outputs selectable	
Output current, max.	100 mA
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 _B / 0 V
Voltage type, inputs	DC
Switching voltage, inputs	high: ≥6V low: ≤4V
Input/output 1	
Activation/disable delay	0 1 ms
Fiming	400
Readiness delay	400 ms
Cycle time Response time per beam	15.28 ms 30 µs



Type (O-Link O-Link O-Link O-Link O-Link O-Link O-Mile O-Mile O-Mile	Interface	
COMINGE		IQ.Link
COM mode		IO-LIIIK
Specification		COM2
V1.1		
Service interface Type IO-Link Function Configuration via software Service Connection Number of connections 2 Piece(s) Plug outlet Rear side Connection Signal N Signal OUT Voitage supply Type of connection Connector Thread size M12 Type Male Material Metal No. of pins 8 -pin Encoding A-coded Connection Connector Type of connection Connector Thread size M12 Type Male Material Metal No. of pins 8 -pin Encoding A-coded Connection Connector Thread size M12 Type Indicate M12 Type Female Material Metal No. of pins Service M12 Type Occurrence M12 Type Female Material Metal No. of pins Service M12 Type Female Material Metal No. of pins Service M12 Type Female Material Metal No. of pins Service M12 Type Female Material Metal No. of pins Service M2 Design Cubic Dimension (W x H x L) 29 mm x 35.4 mm x 2,503 mm Metal Aluminum Lens cover material Metal Plastic Net weight 2,600 g Housing color Type of fastening Groove mounting Via optional mounting device	Specification	
Type	Min. cycle time	COM2 = 2.3 ms
Type		
Connection Configuration via software	Service interface	
Function Connection Number of connections 2 Piece(s) Plug outlet Rear side Connection Tunction Configuration interface Signal IN Signal OUT Voltage supply Type of connection Thread size M12 Type Mate Material Metal Mo. of pins Encoding A-coded Connection Type of connection Connection Connection Connection Connection Thread size M12 Type Mate Metal Motor pins Benoding A-coded Connection Connection Type of connection Connection Type of connection Connection Type of condection Type of condection Connection Tonnection Tonnection Connection Connection Thread size M12 Type Female 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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2.600 g Housing color Type of fastening Groove mounting device	Туре	IO-Link
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Number of connections 2 Piece(s) Plug outlet Rear side Connection 1 Configuration interface Signal N Signal OUT Voltage supply Type of connection Connector Thread size M12 Type Male Material Metal No. of pins 8 -pin Encoding A-coded Connection 2 Function Function Connector Type of connection Connector Type of connection Connector Type of pins 5 -pin Material Metal No. of pins 5 -pin Encoding A-coded Mechanical data Oesign Cubic Dimension (W x H x L) 2 9 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Groove mounting Via optional mounting device		Service
Number of connections 2 Piece(s) Plug outlet Rear side Connection 1 Configuration interface Signal N Signal OUT Voltage supply Type of connection Connector Thread size M12 Type Male Material Metal No. of pins 8 -pin Encoding A-coded Connection 2 Function Function Connector Type of connection Connector Type of connection Connector Type of pins 5 -pin Material Metal No. of pins 5 -pin Encoding A-coded Mechanical data Oesign Cubic Dimension (W x H x L) 2 9 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Groove mounting Via optional mounting device		
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Function Configuration interface Signal IN Signal OUT Voltage supply Type of connection Thread size M12 Type Male Material No. of pins Encoding A-coded Connector Type of connection Connection Connection Connection Connection Type of connection Connection Type of connection Connection Tope of connection A-coded Metal No. of pins 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 2,503 mm Housing material Metal , Aluminum Housing material Net al, Aluminum Plastic Net weight A coover material Plastic Net weight Circover mounting Via optional mounting device	Plug outlet	Rear side
Signal OUT Voltage supply	Connection 1	
Signal OUT Voltage supply Type of connection Thread size M12 Type Male Material No. of pins Encoding A-coded Connection 2 Function Connection Type of connection Connection Type of connection Type of connection Connection Type of connection Connector Thread size M12 Type 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 2,503 mm Housing material Metal Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Type of fastening Groove mounting device	Function	Configuration interface
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Material Metal No. of pins 8 -pin Encoding A-coded Connection 2 Function Connector Type of connection Thread size M12 Type 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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Type of fastening Via optional mounting device	Thread size	M12
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Function Connection to transmitter Type of connection Connector Thread size M12 Type 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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Type of fastening Groove mounting Via optional mounting device	No. of pins	8 -pin
Function Connection Connector Type of connection M12 Type 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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Encoding	A-coded
Type of connection Thread size M12 Type Female Material Metal No. of pins 5 - pin Encoding A-coded Mechanical data Design Cubic Dimension (W x H x L) Housing material Lens cover material Net weight Plastic Net weight Type of fastening Connector Connector Metal Ala Metal Ala Metal Aluminum Plastic Silver Type of fastening Groove mounting Via optional mounting device	Connection 2	
Thread size Type Female Material Metal No. of pins Fincoding A-coded Mechanical data Design Cubic Dimension (W x H x L) Housing material Lens cover material Net weight Plastic Type of fastening Groove mounting Via optional mounting device	Function	Connection to transmitter
Type 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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Type of connection	Connector
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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Thread size	M12
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 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Туре	Female
Encoding A-coded Mechanical data Design Cubic Dimension (W x H x L) 29 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Material	Metal
Mechanical data Design Cubic Dimension (W x H x L) 29 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	No. of pins	5 -pin
Design Cubic Dimension (W x H x L) 29 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Encoding	A-coded
Design Cubic Dimension (W x H x L) 29 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device		
Dimension (W x H x L) 29 mm x 35.4 mm x 2,503 mm Housing material Metal , Aluminum Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Mechanical data	
Housing material Metal , Aluminum Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Design	Cubic
Lens cover material Plastic Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Dimension (W x H x L)	29 mm x 35.4 mm x 2,503 mm
Net weight 2,600 g Housing color Silver Type of fastening Groove mounting Via optional mounting device	Housing material	Metal , Aluminum
Housing color Type of fastening Groove mounting Via optional mounting device	Lens cover material	Plastic
Type of fastening Groove mounting Via optional mounting device	Net weight	2,600 g
Via optional mounting device	Housing color	Silver
	Type of fastening	Groove mounting
Operation and display		Via optional mounting device
Operation and display		
	Operation and display	
Type of display LED OLED display	Type of display	
Number of LEDs 2 Piece(s)	Number of LEDs	2 Piece(s)

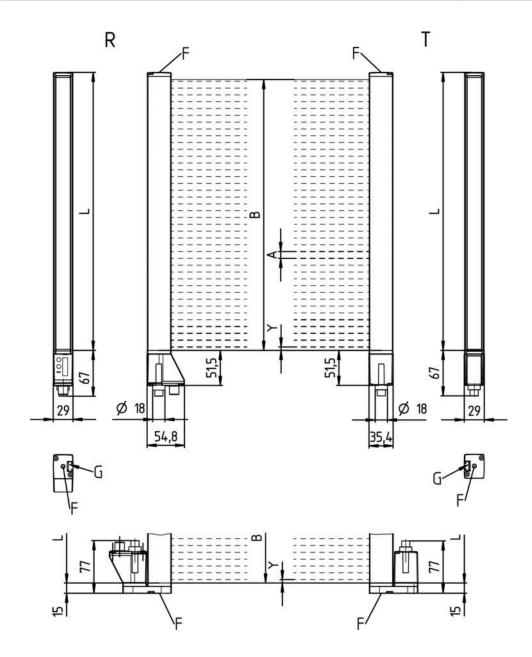


Type of configuration	Software Teach-in			
Operational controls	Membrane keyboard			
Environmental data				
Ambient temperature, operation	-30 60 °C			
Ambient temperature, storage	-40 70 °C			
Certifications				
Degree of protection	IP 65	IP 65		
Protection class	III	III		
Certifications	c CSA US	c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

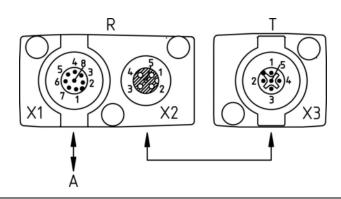
Dimensioned drawings

All dimensions in millimeters





- A Beam spacing 5 mm B Measurement field length 2480 mm
- F M6 thread
- G Fastening groove L Profile length 2488 mm
- T Transmitter
- R Receiver
- Y 2.5 mm



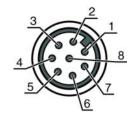


APWR / SW IN/OUT

Electrical connection

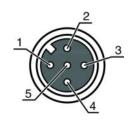
Connection 1		
Function	Configuration interface Signal IN Signal OUT Voltage supply	
Type of connection	Connector	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	8 -pin	
Encoding	A-coded	

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		Light path free, with function reserve
	Yellow, flashing	No function reserve
	Off	Object detected

Suitable transmitters

	Part no.	Designation	Article	Description
	50119479	CML720i- T05-2480.R-M12	Light curtain transmitter	Operating range: 0.1 3.5 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:		

N	_	4	c
14	v	·	C

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.