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**Part no.: 50120096**  
**CML720i-R20-470.R/L-M12**  
**Light curtain receiver**



 IO-Link

## Contents

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## Technical data

<b>Basic data</b>	
Series	720
Operating principle	Throughbeam principle
Device type	Receiver
Contains	Accessories for the use of the BT-2R1
Application	Object measurement
<b>Special design</b>	
Special design	Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning
<b>Optical data</b>	
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	470 mm
Number of beams	24 Piece(s)
Beam spacing	20 mm
<b>Measurement data</b>	
Minimum object diameter	30 mm
<b>Electrical data</b>	
Protective circuit	Polarity reversal protection Short circuit protected Transient protection
<b>Performance data</b>	
Supply voltage $U_B$	18 ... 30 V , DC
Residual ripple	0 ... 15 % , From $U_B$
Open-circuit current	0 ... 165 mA , The specified values refer to the entire package consisting of transmitter and receiver.
<b>Inputs/outputs selectable</b>	
Output current, max.	100 mA
Input resistance	6,000 $\Omega$
Number of inputs/outputs selectable	4 Piece(s)
Type	Inputs/outputs selectable
Voltage type, outputs	DC
Switching voltage, outputs	Typ. $U_B$ / 0 V
Voltage type, inputs	DC
Switching voltage, inputs	high: $\geq 6V$ low: $\leq 4V$
<b>Input/output 1</b>	
Activation/disable delay	0 ... 1 ms
<b>Timing</b>	
Readiness delay	400 ms
Cycle time	1.12 ms
Response time per beam	30 $\mu s$

<b>Interface</b>	
Type	IO-Link
<b>IO-Link</b>	
COM mode	COM2
Specification	V1.0.1 V1.1
Min. cycle time	COM2 = 2.3 ms
<b>Service interface</b>	
Type	IO-Link
<b>IO-Link</b>	
Function	Configuration via software Service
<b>Connection</b>	
Number of connections	2 Piece(s)
Plug outlet	Rear side
<b>Connection 1</b>	
Function	Configuration interface Signal IN Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
<b>Connection 2</b>	
Function	Connection to transmitter
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded
<b>Mechanical data</b>	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 503 mm
Housing material	Metal , Aluminum
Lens cover material	Plastic
Net weight	750 g
Housing color	Silver
Type of fastening	Groove mounting Via optional mounting device
<b>Operation and display</b>	
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

**Certifications**

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

**Classification**

Customs tariff number	90314990
eCl@ss 8.0	27270910
eCl@ss 9.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549

## Dimensioned drawings

All dimensions in millimeters



- A Beam spacing 20 mm
- B Measurement field length 470 mm
- F M6 thread
- G Fastening groove
- L Profile length 488 mm
- T Transmitter
- R Receiver
- Y 5 mm



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
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

Pin	Pin assignment
1	V+
2	IO1
3	GND
4	IO-Link
5	IO2
6	IO3
7	IO4
8	GND



Connection 2	
Function	Connection to transmitter
Type of connection	Connector
Thread size	M12
Type	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
	50119507	CML720i-T20-470.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.BCCDDDD-EEEEFF

CML	<b>Operating principle:</b> Measuring light curtain
7XXi	<b>Series:</b> 720i: 720i series 730i: 730i series
Y	<b>Device type:</b> T: transmitter R: receiver
ZZ	<b>Beam spacing:</b> 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm
AAAA	Measurement field length [mm], dependent on beam spacing
B	<b>Equipment:</b> A: connector outlet, axial R: rear connector outlet
CCC	<b>Interface:</b> L: IO-Link /CN: CANopen /PB: PROFIBUS /PN: PROFINET /CV: Analog current and voltage output /D3: RS 485 Modbus
DDD	<b>Special equipment:</b> -PS: Power Setting
EEE	<b>Electrical connection:</b> M12: M12 connector
FFF	<b>-EX: Explosion protection:</b>

### Note

 A list with all available device types can be found on the Leuze electronic website at [www.leuze.com](http://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
	50129781	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
	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.
	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.