

# **Technical data sheet Light curtain receiver** Part no.: 50131962 CML720i-R20-1910.A/PN-M12



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 changes

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We reserve the right to make technical changes eng • 2025-04-05

## **Technical data**

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Series	720	
Operating principle	Throughbeam principle	
Device type	Receiver	
Contains	2x BT-NC sliding block	
Application	Object measurement	
Special version		
Special version	Crossed-beam scanning	
	Diagonal-beam scanning	
	Parallel-beam scanning	
Optical data		
Dperating range	0.3 7 m	
Dperating range	Guaranteed operating range	
Operating range limit	0.2 9 m	
Operating range limit	Typical operating range	
Measurement field length	1,910 mm	
Number of beams	96 Piece(s)	
Beam spacing	20 mm	
Measurement data	~~	
Minimum object diameter	30 mm	
Electrical data		
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	0 350 mA, The specified values refer to the entire package consisting of trans mitter and receiver.	
Inputs/outputs selectable		
Output current, max.	100 mA	
Input resistance	6,000 Ω	
Number of inputs/outputs selectable		
Туре	Inputs/outputs selectable	
Voltage type, outputs	DC	
Switching voltage, outputs	Typ. U <sub>B</sub> / 0 V	
Switching voltage, outputs Voltage type, inputs	DC	
Switching voltage, outputs	DC high: ≥6V	
Switching voltage, outputs Voltage type, inputs	DC	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	DC high: ≥6V	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	DC high: ≥6V low: ≤ 4 V	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	DC high: ≥6V	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay	DC high: ≥6V low: ≤ 4 V	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior	DC high: ≥6V low: ≤ 4 V	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	DC high: ≥6V low: ≤ 4 V 1 ms	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay	DC high: ≥6V low: ≤ 4 V 1 ms 1,500 ms	
Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1 Activation/disable delay Time behavior Readiness delay Cycle time	DC high: ≥6V low: ≤ 4 V 1 ms 1,500 ms 3.28 ms	

PROFINET	
Function	Process
Conformance class	B
Protocol	PROFINET RT
Switch functionality	Integrated
Transmission speed	10 Mbit/s 100 Mbit/s
	100 100/00/0
Service interface	
Гуре	IO-Link
IO-Link	
Function	Configuration via software
	Service
Connection	
Number of connections	3 Piece(s)
Plug outlet	Axial
Connection 1	Configuration interfere
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
Commonting 0	
Connection 2 Function	BUS IN
Type of connection	Connector
	M12
Thread size	
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Connection 3	
Function	BUS OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Mechanical data	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 1,995 mm
lousing material	Metal
Metal housing	Aluminum
ens cover material	Plastic
Net weight	2,050 g
lousing color	Silver
	Croove mounting
Type of fastening	Groove mounting

## **Technical data**

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### **Operation and display**

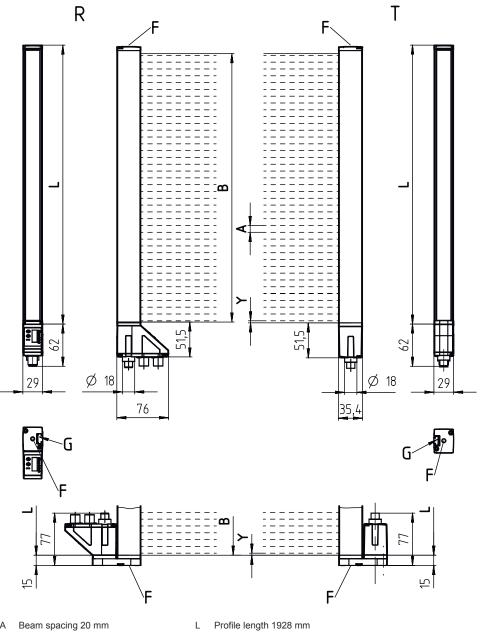
Type of display	LED				
	OLED display				
Number of LEDs	4 Piece(s)				
Type of configuration	Software				
	Teach-in				
Operational controls	Membrane keyboard				
Environmental data					
Ambient temperature, operation	-30 60 °C				
Ambient temperature, operation Ambient temperature, storage	-30 60 °C -40 70 °C				
Ambient temperature, storage					
Ambient temperature, storage					
Ambient temperature, storage	-40 70 °C				
Ambient temperature, storage Certifications Degree of protection	-40 70 °C IP 65				
Ambient temperature, storage Certifications Degree of protection Protection class	-40 70 °C IP 65 III				

### 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



- Beam spacing 20 mm А
- В Measurement field length 1910 mm
- F M6 thread G
  - Fastening groove
- Т
  - Transmitter
- R Receiver
- 5 mm Υ

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### **Dimensioned drawings**

ВС		А	PWR/SW
R 🛉 🛉	т	В	BUS IN
		С	BUS OUT
× O O	<b>X</b> 3		
4	4		
ŧ			
A			

### W 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

**X1** 

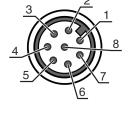
### Pin Pin assignment

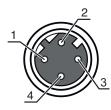
1	V+
2	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx+
7	RS 485 Tx+
8	FE/SHIELD

### **Connection 2** X2A Function BUS IN Type of connection Connector Thread size M12 Female Туре Material Metal No. of pins 4 -pin Encoding D-coded

### Pin Pin assignment

1	TD0+
2	RD0+
3	TD0-
4	RD0-







## **Electrical connection**

### Connection 3

Function	BUS OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

X2B

Pin	Pin assignment
1	TD0+
2	RD0+
3	TD0-
4	RD0-

# Operation and display

LED	Display	Meaning
1	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
2 Yellow, continuous light		Light path free, with function reserve
	Yellow, flashing	No function reserve
	Off	Object detected
3	Green, continuous light (at the X2A / X2B connector)	Link
4	Yellow, continuous light (at the X2A / X2B connector)	Activity

### Suitable transmitters

 Part no.	Designation	Article	Description
50119434	CML720i-T20- 1910.A-M12	Light curtain transmitter	Operating range: 0.3 7 m Connection: Connector, M12, Axial, 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			
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: Axial connector outlet R: Rear connector outlet			



### Part number code



ccc	Interface L: IO-Link //N: 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					
0	A list with 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.         *> The product may only be put into operation by competent persons.         *> Only use the product in accordance with its intended use.				

For UL application
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s:

🗞 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
W D	50132079	KD U-M12-5A-V1- 050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC
Ŵ	50135074	KS ET-M12-4A-P7- 050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

### Accessories

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## Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50135081	KSS ET-M12-4A- RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

# 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

## Mounting technology - Mounting brackets

 Part no.	Designation	Article	Description
 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

### Configuration devices

	Part no.	Designation	Article	Description
165	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
с. С	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.

### Accessories





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