

Technical data sheet Light curtain receiver Part no.: 50120188 CML720i-R20-1750.R/CV-M12



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 eng • 2025-04-04

1/8

Technical data

Basic 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 version				
Special version	Crossed-beam scanning			
	Diagonal-beam scanning			
	Parallel-beam scanning			
Optical data				
Operating range	0.3 7 m			
Operating range	Guaranteed operating range			
Operating range limit	0.2 9 m			
Operating range limit	Typical operating range			
Measurement field length	1,750 mm			
Number of beams	88 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 _B	18 30 V, DC			
Residual ripple	0 15 %, From U _B			
Open-circuit current	0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.			
Outputs				
Number of analog outputs	2 Piece(s)			
Analog outputs				
Туре	Analog output			
Current	0 24 mA			
Voltage	0 11 V			
-				
Analog output 1				
Туре	Voltage			
Analog output 2				
Туре	Current			
Inputs/outputs selectable	100 mA			
Output current, max.	100 mA			
Input resistance	6,000 Ω			
Number of inputs/outputs selectab				
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: $\leq 4 \text{ V}$			

	Input/output 1	
	Activation/disable delay	1 ms
Tii	me behavior	
Re	adiness delay	450 ms
Су	cle time	3.04 ms
Re	sponse time per beam	30 µs
Se	ervice interface	
Ту	pe	IO-Link
	IO-Link	
	Function	Configuration via software
		Service
Co	onnection	
Nu	mber of connections	2 Piece(s)
Plu	ug outlet	Rear side
	Connection 1 Function	Configuration interface
		Signal IN
		Signal OUT
		Voltage supply
1	Type of connection	Connector
	Thread size	M12
	Type	Male
	Material	Metal
	No. of pins	8 -pin
	Encoding	A-coded
	Encoung	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
Me	echanical data	
De	sign	Cubic
Di	mension (W x H x L)	29 mm x 35.4 mm x 1,783 mm
Но	ousing material	Metal
Me	etal housing	Aluminum
Le	ns cover material	Plastic
Ne	t weight	1,950 g
Ho	ousing color	Silver
Ту	pe of fastening	Groove mounting
		Via optional mounting device
Op	peration and display	
Ту	pe of display	LED
		OLED display
Nu	mber of LEDs	2 Piece(s)
	pe of configuration	Software
Ту		
Ту		Teach-in

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Technical data

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Environmental data

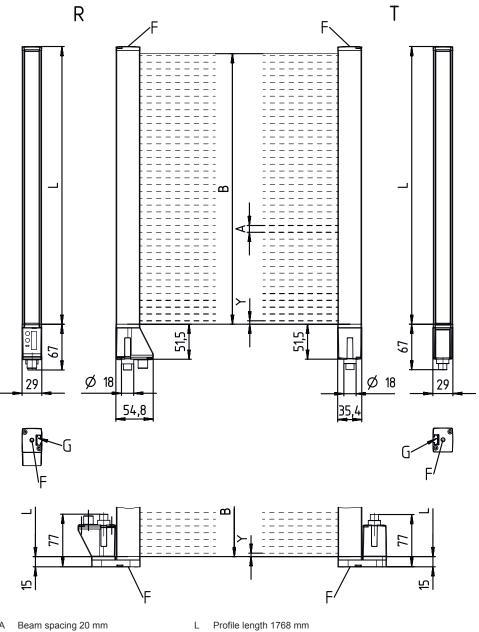
Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C
Certifications	
Certifications	

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

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

Fastening groove

- В Measurement field length 1750 mm
- F M6 thread

G

R Receiver

Т

5 mm Υ

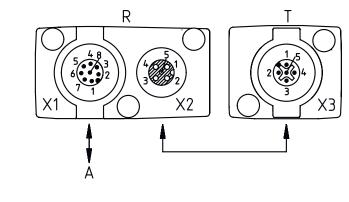
Transmitter

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Dimensioned drawings





A PWR / SW IN / OUT

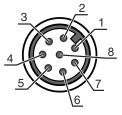
Electrical connection

Connection 1

Function	Configuration interface
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
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	OUT V		
7	OUT mA		
8	AGND		



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

LED

2

ation and display		
	Display	Meaning
	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
	Yellow, continuous light	Light path free, with function reserve
	Yellow, flashing	No function reserve

Object detected

Suitable transmitters

Off

 Part no.	Designation	Article	Description
50119515	CML720i-T20- 1750.R-M12	Light curtain transmitter	Operating range: 0.3 7 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		
Y	Device type T: transmitter R: receiver		
22	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		
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 wi	th 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.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$ The product may only be put into operation by competent persons.

 $\ensuremath{^{\ensuremath{\Downarrow}}}$ Only use the product in accordance with its intended use.

	For UL applications:
A	 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 Connector, LED: No 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: 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
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	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

7/8

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Accessories

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Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
ęę.	429029	BT-2RG	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

Configuration devices

	Part no.	Designation	Article	Description
Cies .	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.
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.

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