

Technical data sheet Light curtain receiver Part no.: 50131921 CML720i-R10-160.R/PN-M12



Technical data

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	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
	Guaranteed operating range
	0.2 9 m
	Typical operating range
	160 mm
•	16 Piece(s)
Beam spacing	10 mm
Measurement data	
	20 mm
-	
Electrical data	
Protective circuit	Polarity reversal protection
	Short circuit protected
	Transient protection
Performance data	40 201/ 00
	18 30 V, DC
	0 15 %, From U _B 0 135 mA, The specified values refer
	to the entire package consisting of trans mitter and receiver.
Inputs/outputs selectable Output current, max.	100 mA
CONDUCTORIENT MAX	100 mA
	6 000 0
Input resistance	6,000 Ω
Input resistance Number of inputs/outputs selectable	2 Piece(s)
Input resistance Number of inputs/outputs selectable Type	2 Piece(s) Inputs/outputs selectable
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	2 Piece(s) Inputs/outputs selectable DC
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: \geq 6V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs	2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: \geq 6V
Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V
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	2 Piece(s) Inputs/outputs selectable DC Typ. $U_B / 0 V$ DC high: $\ge 6V$ Iow: $\le 4 V$
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 Time behavior	2 Piece(s) Inputs/outputs selectable DC Typ. $U_B / 0 V$ DC high: $\ge 6V$ Iow: $\le 4 V$
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 Time behavior Readiness delay	2 Piece(s) Inputs/outputs selectable DC Typ. $U_B / 0 \vee$ DC high: $\geq 6 \vee$ Iow: $\leq 4 \vee$ 1 ms
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 Time behavior Readiness delay Cycle time	2 Piece(s) Inputs/outputs selectable DC Typ. $U_B / 0 V$ DC high: $\geq 6V$ Iow: $\leq 4 V$ 1 ms 1,500 ms
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 Time behavior Readiness delay Cycle time	2 Piece(s) Inputs/outputs selectable DC Typ. $U_B / 0 V$ DC high: $\ge 6V$ Iow: $\le 4 V$ 1 ms 1,500 ms 1 ms

	PROFINET	
	Function	Process
	Conformance class	В
	Protocol	PROFINET RT
	Switch functionality	Integrated
	Transmission speed	10 Mbit/s
		100 Mbit/s
S	ervice interface	
Ту	ре	IO-Link
	IO-Link Function	Configuration via coffuero
	Function	Configuration via software Service
		Gervice
C	onnection	
Nı	umber of connections	3 Piece(s)
PI	ug outlet	Rear side
	Connection 1	
	Function	Configuration interface
		Connection to transmitter
		Signal IN
		Signal OUT
	Type of connection	Voltage supply Connector
	Thread size	M12
	Type	Male
	Material	Metal
	No. of pins	8 -pin
	Encoding	A-coded
	Connection 2	
	Function	BUS IN
	Type of connection	Connector
	Thread size	M12
	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
M	echanical data	
De	esign	Cubic
	mension (W x H x L)	29 mm x 35.4 mm x 183 mm
	ousing material	Metal
M	etal housing	Aluminum
Le	ens cover material	Plastic
Ne	et weight	400 g
Ho	ousing color	Silver
Ту	pe of fastening	Groove mounting
		Via optional mounting device

Technical data

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Operation and display

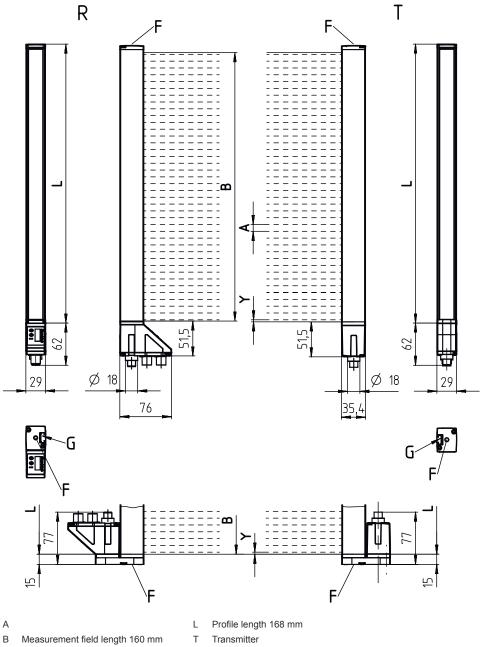
The second second second	
Type of display	LED
	OLED display
Number of LEDs	4 Piece(s)
Type of configuration	Software
	Teach-in
Operational controls	Membrane keyboard
Environmental data	
Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C
Certifications	
Degree of protection	IP 65
Protection class	III
Approvals	c UL US
Standards applied	IEC 60947-5-2
otanaalao applica	

Classification	Cla	ass	ific	cati	ion	
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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



- F M6 thread
- G Fastening groove
- R Receiver
- Υ
- 5 mm

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Dimensioned drawings

В C А BUS IN В R С BUS OUT Ο

- PWR / SW IN / OUT

Electrical connection Connection 1

A

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

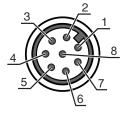
X2A

Connection 2

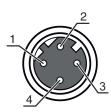
Function	BUS IN
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

Pin Pin assignment

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









Electrical connection

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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
50119486	CML720i-T10-160.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				



Part number code



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			
Να	ote			
6	Solution 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 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
	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
W	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

Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
RR.	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
50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

Accessories

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