Leuze

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



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Technical data

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Rasic 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	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	160 mm
Number of beams	16 Piece(s)
Beam spacing	10 mm
Measurement data	
Minimum object diameter	20 mm
-	20 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	0 135 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 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
omening rollage, inputs	low: ≤4V
Input/output 1	
Activation/disable delay	1 ms
Timing	
Readiness delay	1,500 ms
Cycle time	1 ms
Response time per beam	30 µs
Interface	
Туре	PROFINET

	Profinet		
	Function	Process	
	Conformance class	В	
	Protocol	PROFINET RT	
	Switch functionality	Integrated	
	Transmission speed	10 Mbit/s	
		100 Mbit/s	
Se	ervice interface		
Ту	ре	IO-Link	
	IO-Link		
	Function	Configuration via software	
		Service	
Сс	onnection		
NI	Imber of connections	2 Diago(a)	
	ug outlet	3 Piece(s) Rear side	
		iteal side	
	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	
	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	
	achenical data		
1416	echanical data		
	esign	Cubic	
Dimension (W x H x L)		29 mm x 35.4 mm x 183 mm	
Housing material		Metal	
Metal housing		Aluminum	
Lens cover material		Plastic	
Net weight		400 g Silver	
Housing color Type of fastening		Groove mounting	
.,		Via optional mounting device	
		s a second second	

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

Certifications

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

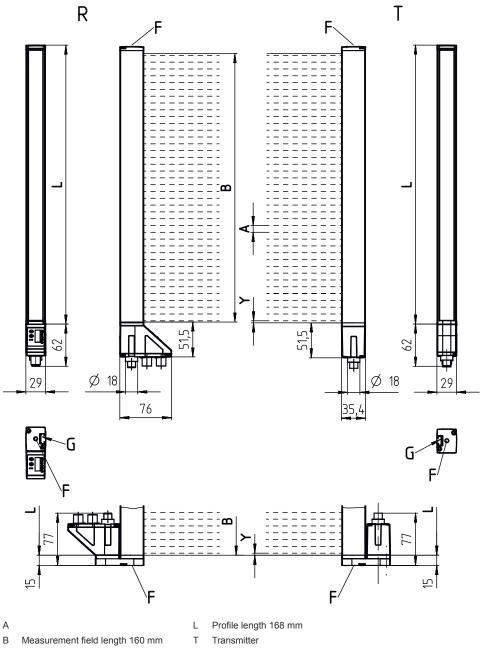
-40 ... 70 °C

Classification

90314990
27270910
27270910
27270910
27270910
27270910
EC002549
EC002549
EC002549

Dimensioned drawings

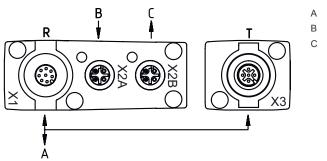
All dimensions in millimeters



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



Dimensioned drawings



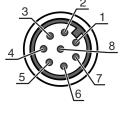
- A PWR / SW IN / OUT B BUS IN
- C BUS OUT

Electrical connection

Connection 1	X1
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

Pin Pin assignment

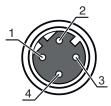
1	V+		
2	I/O 1		
3	GND		
4	IO-Link		
5	I/O 2		
6	RS 485 Tx+		
7	RS 485 Tx+		
8	FE/SHIELD		



Connection 2	X2A
Function	BUS IN
Type of connection	Connector
Thread size	M12
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

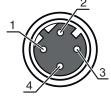
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Connection 3

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
50119486	CML720i-T10-160.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.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: connector outlet, axial 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	A list with all available device types can be found on the Leuze website at www.leuze.com.					

Notes

a safety sensor and is not intended as personnel protection.
only be put into operation by competent persons.
uct in accordance with its intended use.
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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
y	50132079	KD U-M12-5A-V1- 050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
ý 1	50135074	KS ET-M12-4A-P7- 050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin 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.	429046	BT-2R1	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

Accessories

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Services

	Part no.	Designation	Article	Description
ц. 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. 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
6	♣ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.