Leuze

Technical data sheet Light curtain receiver Part no.: 50120087 CML720i-R10-1920.R/L-M12



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Technical data

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Operating principle	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	1,920 mm							
Number of beams	192 Piece(s)							
Beam spacing	10 mm							
Measurement data								
Minimum object diameter	20 mm							
Electrical data								
Protective circuit	Polarity reversal protection							
	Short circuit protected							
	Transient protection							
Performance data	18 30 V, DC							
Supply voltage U _B Residual ripple	0 15 %, From U _B							
Open-circuit current	0 435 mA, The specified values refer							
open-circuit current	to the entire package consisting of trans mitter and receiver.							
Inputs/outputs selectable								
Output current, max.	100 mA							
Output current, max. Input resistance	6,000 Ω							
Output current, max. Input resistance Number of inputs/outputs selectable	6,000 Ω 4 Piece(s)							
Output current, max. Input resistance Number of inputs/outputs selectable Type	6,000 Ω 4 Piece(s) Inputs/outputs selectable							
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC							
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V							
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. $U_{\rm B}$ / 0 V DC							
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	$6,000 \Omega$ 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V							
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Output current, max. 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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤ 4 V							
Output current, max. 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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤ 4 V 0 1 ms							
Output current, max. 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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤ 4 V 0 1 ms 400 ms							
Output current, max. 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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤ 4 V 0 1 ms 400 ms 6.16 ms							
Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input/output 1	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤ 4 V 0 1 ms 400 ms							
Output current, max. 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	6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤ 4 V 0 1 ms 400 ms 6.16 ms							

	IO-Link	
	COM mode	COM2
	Min. cycle time	COM2 = 2.3 ms
	Specification	V1.0.1
		V1.1
(ervice interface	
/	ре	IO-Link
	IO-Link	
	Function	Configuration via software
		Service
	onnection	
ι	umber of connections	2 Piece(s)
I	ug outlet	Rear side
	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
	Connection 2	
	Function	Connection to transmitter
	Type of connection	Connector
	Thread size	M12
	Type	Female
	Material	Metal 5 -pin
	No. of pins Encoding	A-coded
	-	A-coucu
	echanical data	
	esign	Cubic
	mension (W x H x L)	29 mm x 35.4 mm x 1,943 mm
	ousing material	Metal
	etal housing	Aluminum
	ens cover material	Plastic
	et weight	2,100 g
	ousing color	Silver
/	pe of fastening	Groove mounting Via optional mounting device
	peration and display	
	pe of display	LED
y	he of aishiah	OLED display
þ	umber of LEDs	2 Piece(s)
	pe of configuration	2 Piece(s) Software
y	Po or configuration	Teach-in
)	perational controls	Membrane keyboard
	nvironmental data	
	nbient temperature, operation	-30 60 °C

Technical data

Certifications

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

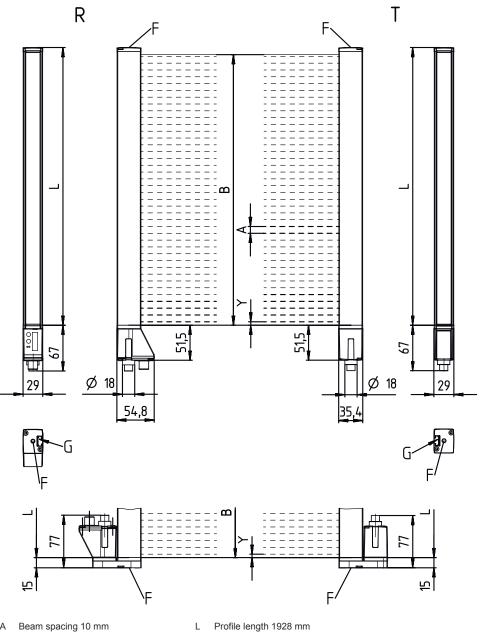
Classification

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 10 mm А
- В Measurement field length 1920 mm
- F M6 thread G Fastening groove
- Т R Receiver
 - 5 mm Υ

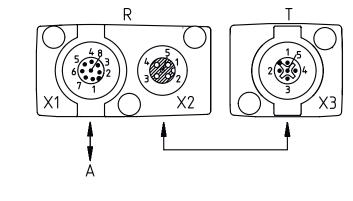
Transmitter



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Dimensioned drawings





A PWR / SW IN / OUT

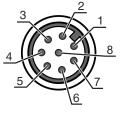
Electrical connection

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	IO1		
3	GND		
4	IO-Link		
5	102		
6	IO3		
7	IO4		
8	GND		

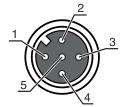


Connection 2

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

LED

1

2

ceiver • Part no.: 50120087 • CML720i-R10-1920.R/L-M12	Leuze
Display	Meaning
Green, continuous light	Operational readiness
Green, flashing	Teach / error
Yellow, continuous light	Light path free, with function reserve

No function reserve

Object detected

Suitable transmitters

Off

Yellow, flashing

Part no	. Designation	Article	Description
50119498	8 CML720i-T10-	Light curtain	Operating range: 0.3 7 m
	1920.R-M12	transmitter	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.

b The product may only be put into operation by competent persons.

 $\ensuremath{\mathfrak{b}}$ Only use the product in accordance with its intended use.



ł,	For UL app	olication	s, use	is only p	ermitted in	Class	2 ciro	cuits	in accord	ance v	vith th	e N	EC (Nati	onal	Elec	ctric	Code	e).		

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 unit

	Part no.	Designation	Article	Description
C. LEWIS	50144900	MD 798i-11-82/L5- 2222	IO-Link master	Type: IO-Link master Current consumption, max.: 11,000 mA Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67, IP 65, IP 69K

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

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Accessories

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