

Technical data sheet Light curtain receiver

Part no.: 50131977

CML720i-R20-310.R/PN-M12



Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable transmitters
- Part number code
- Notes
- Accessories





1/9

Technical 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	310 mm
Number of beams	16 Piece(s)
Beam spacing	20 mm

Measurement data

Minimum	object	diameter	30 mr
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Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected
	Transient protection

Performance data

i errormance 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 transmitter and receiver.

Inputs/outputs selectable

Output current, max.	100 mA
Input resistance	6,000 Ω
Number of inputs/outputs selectable	2 Piece(s)
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: ≤4V

Input/output 1

Activation/disable	delay	1 ms
Activation/disable	aeiay	1 ms

Timing

Readiness delay	1,500 ms
Cycle time	1 ms
Response time per beam	30 µs

Interface

Туре	PROFINE [*]
i y p c	TROTINE

Profinet	
Function	Process
Conformance class	В
Protocol	PROFINET RT
Switch functionality	Integrated
Transmission speed	10 Mbit/s
	100 Mbit/s

Service interface

Туре	IO-Link
IO-Link	
Function	Configuration via software
	Service

Connection

Number of connections	3 Piece(s)
Plug outlet	Rear side

Connection 1

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

Connection 3		
Function	BUS OUT	
Type of connection	Connector	
Thread size	M12	
Type	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 343 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic
Net weight	600 g
Housing color	Silver
Type of fastening	Groove mounting
	Via optional mounting device

Technical data



Operation and display

Certifications

Standards applied

operation and anopia,	
Type of display	LED
	OLED display
Number of LEDs	4 Piece(s)
Type of configuration	Software
	Teach-in
Operational controls	Membrane keyboard
Operational controls	momentum no podera
Environmental data	montano no socia
	-30 60 °C
Environmental data	,
Environmental data Ambient temperature, operation	-30 60 °C
Environmental data Ambient temperature, operation Ambient temperature, storage	-30 60 °C

c CSA US

IEC 60947-5-2

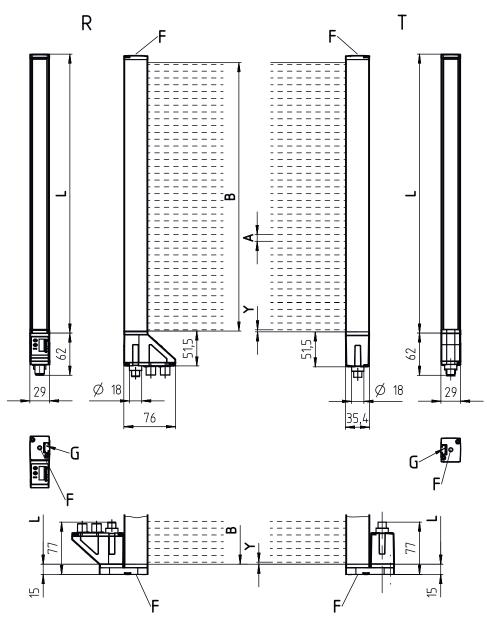
Classification

Customs tariff number	90314990
eCl@ss 5.1.4	27270910
eCl@ss 8.0	27270910
eCl@ss 9.0	27270910
eCl@ss 10.0	27270910
eCl@ss 11.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549

Dimensioned drawings



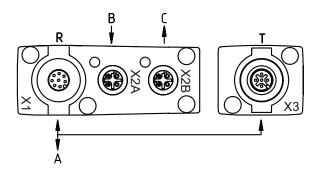
All dimensions in millimeters



- A Beam spacing 20 mm
- B Measurement field length 310 mm
- F M6 thread
- G Fastening groove
- L Profile length 328 mm
- T Transmitter
- R Receiver
- Y 5 mm

Dimensioned drawings



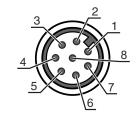


- A PWR/SWIN/OUT
- B BUS IN
- C BUS OUT

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

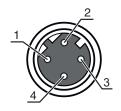
Pin	Pin assignment
1	V+
2	1/0 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx+
7	RS 485 Tx+
8	FE/SHIELD



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

VOA

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



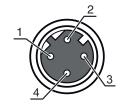
Composion 2

Electrical connection



Connection 3	X2B	
Function	BUS OUT	
Type of connection	Connector	
Thread size	M12	
Туре	Female	
Material	Metal	
No. of pins	4 -pin	
Encoding	D-coded D-coded	

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
50119506	CML720i-T20-310.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
Υ	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: 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

Note



 $\$ 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.
- b 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 Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
W D	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



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
gg.	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
50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

Accessories



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. 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



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