

Technical data sheet Light curtain receiver Part no.: 50120139 CML720i-R05-1440.R/CV-M12



 Leuze electronic GmbH + Co. KG
 info@leuze.com • www.leuze.com
 changes

 The Sensor People
 In der Braike 1, D-73277 Owen/Germany
 Phone: +49 7021 573-0 • Fax: +49 7021 573-199
 eng • 2024-06-21

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	0.1 3.5 m		
Operating range	Guaranteed operating range		
Operating range limit	0.1 4.5 m		
Operating range limit	Typical operating range		
Measurement field length	1,440 mm		
Number of beams	288 Piece(s)		
Beam spacing	5 mm		
Measurement data			
Minimum object diameter	10 mm		
Electrical data			
Protective circuit	Polarity reversal protection		
	Short circuit protected		
	Transient protection		
Performance data			
Performance data Supply voltage U _B	18 30 V, DC		
	18 30 V, DC 0 15 %, From U _B		
Supply voltage U _B	0 15 %, From U _B 0 350 mA, The specified values refer		
Supply voltage U _B Residual ripple	0 15 %, From $\rm U_B$ 0 350 mA, The specified values refer to the entire package consisting of trans-		
Supply voltage U _B Residual ripple Open-circuit current Outputs	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.		
Supply voltage U _B Residual ripple Open-circuit current	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans-		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 0 24 mA 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 0 24 mA 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 0 24 mA 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Current		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max.	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 24 mA 0 11 V Voltage Current 100 mA		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Current 100 mA 6,000 Ω		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Current 100 mA 6,000 Ω 2 Piece(s)		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Current 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	0 15 %, From U _B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Current 100 mA 6,000 Ω 2 Piece(s)		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Current 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	 0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) Analog output 0 24 mA 0 11 V Voltage Voltage Current 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC 		
Supply voltage U _B Residual ripple Open-circuit current Outputs Number of analog outputs Analog outputs Type Current Voltage Analog output 1 Type Analog output 2 Type Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	0 15 %, From U_B 0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver. 2 Piece(s) 4 Analog output 0 24 mA 0 11 V Voltage Voltage Voltage 1 00 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U_B / 0 V		

Activation/disable delay	1 ms		
Time behavior			
Readiness delay	450 ms		
Cycle time	9.04 ms		
Response time per beam	30 µs		
Service interface			
Гуре	IO-Link		
IO-Link			
Function	Configuration via software		
Tunction	Service		
Connection			
Number of connections	2 Piece(s)		
Plug outlet	Rear side		
Ū			
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		
Туре	Female		
Material	Metal		
No. of pins	5 -pin		
Encoding	A-coded		
Mechanical data			
	Cubic		
Design Dimension (W x H x L)	29 mm x 35.4 mm x 1,463 mm		
Housing material	Metal		
Metal housing	Aluminum		
Lens cover material	Plastic		
Net weight	1,650 g		
Housing color	Silver		
Type of fastening	Groove mounting		
19po of fusioning	Via optional mounting device		
Operation and display			
Type of display	LED		
is po or aropias	OLED display		
Number of LEDs	2 Piece(s)		
Type of configuration	Software		
13po or configuration	Teach-in		

Leuze

Leuze electronic GmbH + Co. KG
 The Sensor People
 In der Braike 1, D-73277 Owen/Germany
 Phone: +49 7021 573-0 • Fax: +49 7021 573-199
 eng • 2024-06-21

Technical data

Leuze

Environmental data

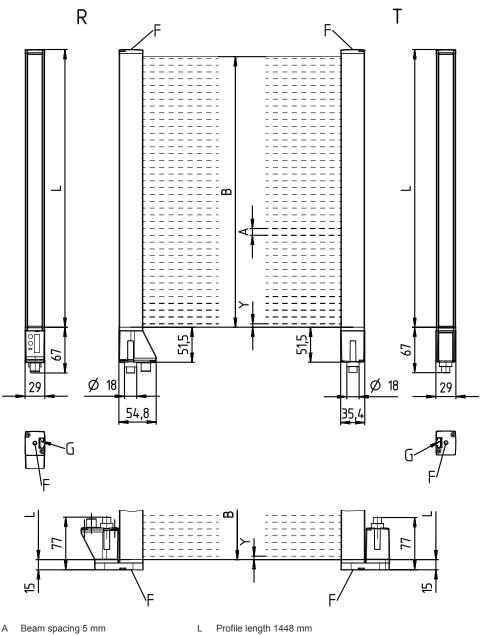
Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C
Certifications	

Degree of protection	IP 65
Protection class	III
Certifications	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
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	EC002549

Dimensioned drawings

All dimensions in millimeters



Beam spacing 5 mm А

Fastening groove

- В Measurement field length 1440 mm
- F M6 thread

G

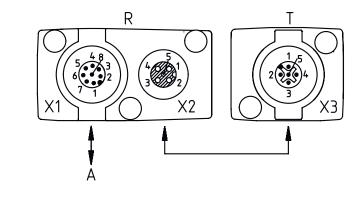
- Т R Receiver
 - 2.5 mm Υ

Transmitter

Leuze

Dimensioned drawings





A PWR / SW IN / OUT

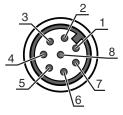
Electrical connection

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		

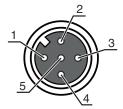


Connection 2

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 1

2

	eiver • Part no.: 50120139 • CML720i-R05-1440.R/CV-M12		uze
eration and display		LC	020
	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	
	Off	Object detected	

Suitable transmitters

Part no.	Designation	Article	Description
50119466	CML720i-T05- 1440.R-M12	Light curtain transmitter	Operating range: 0.1 3.5 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
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: 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	
6 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
Ŭ	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

Leuze

Accessories

Leuze

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

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	ଓ A li

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