



the sensor people





Figure can vary

Part no.: 50120133 CML720i-R05-960.R/CV-M12 Light curtain receiver





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### **Technical data**

Basic data	
Series	720
Operating principle	Throughbeam principle
	Receiver
Device type  Contains	
	Accessories for the use of the BT-2R1
Application	Object measurement
Special design	
Special design	Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning
Optical data	
Operating range	Guaranteed operating range
Operating range	0.1 3.5 m
Operating range limit	Typical operating range
Operating range limit	0.1 4.5 m
Measurement field length	960 mm
Number of beams	192 Piece(s)
Beam spacing	5 mm
Beam spacing	311111
Measurement data	
Minimum object diameter	10 mm
Electrical data	
Protective circuit	Polarity reversal protection
Protective circuit	Polarity reversal protection Short circuit protected Transient protection
Performance data	
Supply voltage U <sub>B</sub>	18 30 V , DC
Residual ripple	0 15 % , From U <sub>B</sub>
Open-circuit current	0 270 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Outputs	
Number of analog outputs	2 Piece(s)
Analog outputs	
Current	0 24 mA
Voltage	0 11 V
Analog output 1	
Туре	Voltage
Analog output 2	
Туре	Current
71.	



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 <sub>B</sub> / 0 V	
Voltage type, inputs	DC	
Switching voltage, inputs	high: ≥6V low: ≤4V	
Input/output 1		
Activation/disable delay	1 ms	
ming		
eadiness delay	450 ms	
rcle time	6.16 ms	
esponse time per beam	30 µs	
ervice interface		
ре	IO-Link	
IO-Link		
Function	Configuration via software Service	
onnection		
	2 Piece(s)	
umber of connections	2 Piece(s) Rear side	
umber of connections ug outlet	2 Piece(s)  Rear side	
umber of connections		
umber of connections  ug outlet  Connection 1	Rear side  Configuration interface Signal IN Signal OUT	
umber of connections  ug outlet  Connection 1  Function	Rear side  Configuration interface Signal IN Signal OUT Voltage supply	
umber of connections  ug outlet  Connection 1  Function  Type of connection	Configuration interface Signal IN Signal OUT Voltage supply Connector	
umber of connections  ug outlet  Connection 1  Function  Type of connection  Thread size	Configuration interface Signal IN Signal OUT Voltage supply Connector M12	
Imber of connections  Ing outlet  Connection 1  Function  Type of connection  Thread size  Type	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male	
Type of connection  Type Material	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal	
Imber of connections Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal 8 -pin	
Imber of connections  Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins  Encoding	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal 8 -pin	
Imber of connections Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins  Encoding  Connection 2	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal 8 -pin A-coded	
Imber of connections Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins  Encoding  Connection 2  Function	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal 8 -pin A-coded  Connection to transmitter	
Type of connection  Type Material No. of pins Encoding  Connection 2  Function	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal 8 -pin A-coded  Connection to transmitter Connector	
Imber of connections Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins  Encoding  Connection 2  Function  Type of connection  Type of connection	Configuration interface Signal IN Signal OUT Voltage supply Connector M12 Male Metal 8 -pin A-coded  Connection to transmitter Connector M12	
Imber of connections Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins  Encoding  Connection 2  Function  Type of connection  Type of connection  Type of connection  Type of connection  Thread size  Type	Rear side  Configuration interface Signal IN Signal OUT Voltage supply  Connector M12 Male Metal 8 -pin A-coded  Connection to transmitter Connector M12 Female	
Imber of connections  Ing outlet  Connection 1  Function  Type of connection  Thread size  Type  Material  No. of pins  Encoding  Connection 2  Function  Type of connection  Type of connection  Type of connection  Type of connection  Type Material	Rear side  Configuration interface Signal IN Signal OUT Voltage supply  Connector M12 Male Metal 8 -pin A-coded  Connection to transmitter  Connector M12 Female Metal  Metal	



Lens cover material	Plastic	
Net weight	1,200 g	
Housing color	Silver	
Type of fastening	Groove mounting Via optional mounting device	

Operation and display		
Type of display	LED OLED display	
Number of LEDs	2 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

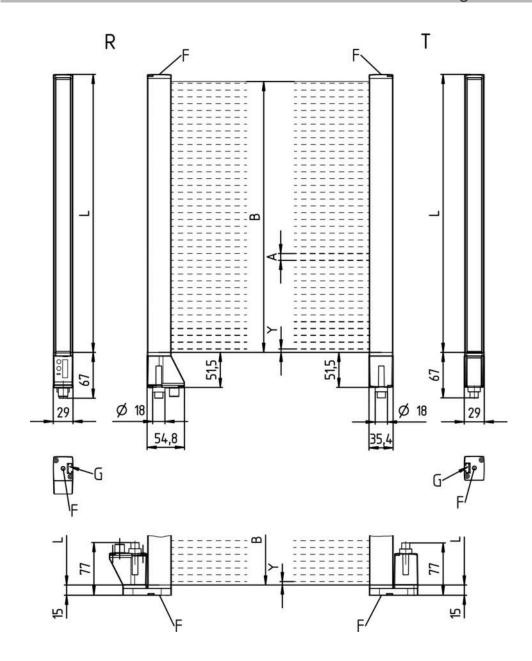
Certifications		
Degree of protection	IP 65	
Protection class	III	
Certifications	c CSA US	
Standards applied	IEC 60947-5-2	

Classification		
Customs tariff number	90314990	
eCl@ss 8.0	27270910	
eCl@ss 9.0	27270910	
ETIM 5.0	EC002549	
ETIM 6.0	EC002549	

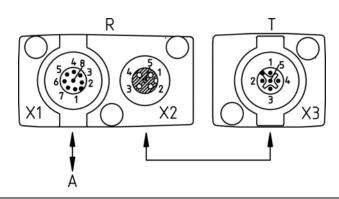
## **Dimensioned drawings**

All dimensions in millimeters





- A Beam spacing 5 mm B Measurement field length 960 mm
- F M6 thread
- G Fastening groove L Profile length 968 mm
- T Transmitter
- R Receiver
- Y 2.5 mm



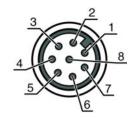


APWR / SW IN/OUT

### **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**

### **LEDs**

LED	Display	Meaning
1	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
		Measurement frequency display
2	Yellow, continuous light	Light path free, with function reserve
	Yellow, flashing	No function reserve
	Off	Object detected

### Suitable transmitters

Part no.	Designation	Article	Description
50119460	CML720i- T05-960.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					
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					
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:					

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A list with all available device types can be found on the Leuze electronic 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
50135128	KD S-M12-8A- P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

## Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
5			cable	Suitable for interface: IO-Link, 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
 50142900	BT 700M.5-2SET	Mounting device set	Contains: 2x mounting brackets, 1 teach template, 4 M6 x 10 screws 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

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## Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
EE.	429046	BT-2R1	set	Contains: 2x BT-R swivel mount, 1 cylinder for mounting on the light curtain Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

Part no.	Designation	Article	Description
50121098	SET MD12-US2-IL1.1 + Zub.		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. 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 electronic website in the Download tab of the article detailed page.