



the sensor people





Figure can vary

Part no.: 50119802 CML720i-R05-560.A/CV-M12 Light curtain receiver





Contents

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



Technical data

Series 720 Operating principle Throughbeam principle Device type Receiver Contains 2x BT-NC sliding block Application Object measurement Special design Special design Special design Special design Special design Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Diagonal-beam sca	Basic data	
Operating principle Device type Receiver Contains 2x BT-NC sliding block Application Object measurement Special design Special design Optical data Operating range ilmit Typical operating range Operating range ilmit On 1 4.5 m Measurement field length S60 mm Number of beams 112 Piece(s) Beam spacing Measurement data Minimum object diameter 10 mm Performance data Supply voltage UB Residual ripple Open-circuit current Open-circuit current Open-circuit current Open-circuit current Open-circuit current Open-circuit current On 155 mA, The specified values refer to the entire package consisting output 1 Type Analog output 2 Voltage On 11 V Analog output 2		720
Device type Receiver Contains 2x BT-NC sliding block Application Object measurement Special design Special design Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Optical data Operating range Quaranteed operating range Querating range imit Typical operating range Operating range limit O14.5 m Measurement field length S60 mm Number of beams 112 Piece(s) Beam spacing Smm Measurement data Minimum object diameter 10 mm Flectrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Polarity reversal protection Short circuit protected Transient protection Polarity reversal protection Short circuit protected Transient protection Poper-directive circuit Open-directive circuit Open-directive circuit opinion of the protective of the protective of the entire package consisting of transmitter and receiver. Outputs Number of analog outputs Current O 24 mA Voltage O 11 V Analog output 2		
Contains 2x BT-NC sliding block Application Object measurement Special design Special design Crossed-beam scanning Bagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Operating range Operating range Operating range Operating range imit Typical operating range Operating range imit O14.5 m Measurement field length S60 mm Number of beams 112 Piece(s) Beam spacing Smm Measurement data Minimum object diameter 10 mm Measurement data Supply voltage Us Residual rippie Operating to near the protection Short circuit protected Transfert protection Short circuit current on 15 %, From Us Open-circuit current on 15 %, From Us Open-circuit current on 15 m, The specified values refer to the entire package consisting of transmitter and receiver. Outuse Number of analog outputs Current on 24 mA Voltage on 11 V Analog output 2		
Application Object measurement Special design Special design Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Operating range Operating range Operating range Operating range imit Operating range Operating range Operating range Operating range 112 Pice(s) Beam spacing S mm Measurement data Minimum object diameter 10 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Short circuit protected Transient protection Operacing range imit Operacing range Operacing		
Special design Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Optical data Operating range Quaranteed operating range Operating range Operating range limit Typical operating range Operating range limit Operating range limit O14.5 m Measurement field length 560 mm Number of beams 112 Picce(s) Beam spacing 5 mm Measurement data Minimum object diameter 10 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Performance data Supply voltage UB Residual ripple Oen-circuit current Outputs Number of analog outputs Current O 16 mA, The specified values refer to the entire package consisting of transmitter and receiver. Outputs Number of analog outputs Current O 24 mA Voltage O 11 V Analog output 2		
Special design Crossed-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Optical date Operating range Operating range Operating range Operating range Operating range imit Operating range Measurement field length Seam spacing Smm Measurement date Minimum object diameter I 0 mm Electrical date Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Operating range Op	Application	Object measurement
Optical data Operating range Guaranteed operating range Operating range 0.1 3.5 m Operating range imit Typical operating range Operating range limit 0.1 4.5 m Measurement field length 560 mm Number of beams 112 Piece(s) Beam spacing 5 mm Measurement date Minimum object diameter 10 mm Measurement data Minimum object diameter 10 mm Measurement data Supply voltage UB 18 30 V , DC Residual ripple 0 15 % , From UB Open-circuit current 0 165 mA , The specified values refer to the entire package consisting outputs Outputs Number of analog outputs 2 Piece(s) Analog output 1 Type Voltage Analog output 2	Special design	
Operating range	Special design	Diagonal-beam scanning
Operating range	Ontical data	
Operating range		Guaranteed operating range
Operating range limit Onto a second solution of beams Operating range limit Operating range limit Onto a second solution of beams Operating range limit Operating range limit Operating range limit Operating range Operating ra		
Operating range limit O.1 4.5 m Measurement field length Number of beams 112 Piece(s) Beam spacing 5 mm Measurement data Minimum object diameter 10 mm Electrical data Protective circuit Performance data Supply voltage UB Residual ripple Open-circuit current Outputs Number of analog outputs 2 Piece(s) Analog output 1 Type Voltage Analog output 2 112 Piece(s) 5 mm 10 mm Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Performance data Supply voltage UB 18 30 V , DC Residual ripple 0 15 % , From UB 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. Outputs Voltage Voltage Voltage Voltage Voltage		
Measurement field length Number of beams 112 Piece(s) Beam spacing 5 mm Measurement data Minimum object diameter 10 mm Flectrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Short circuit protected Transient protection Performance data Supply voltage UB Residual ripple 0 15 % , From UB Open-circuit current 0 165 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 Type Voltage Analog output 2		
Number of beams 112 Piece(s) Beam spacing 5 mm Measurement data Minimum object diameter 10 mm Flectrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Performance data Supply voltage UB Residual ripple 0 15 % , From UB Open-circuit current 0 165 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 Type Voltage Analog output 2		
Beam spacing 5 mm Measurement data Minimum object diameter 10 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Performance data Supply voltage UB 18 30 V , DC Residual ripple 0 15 % , From UB Open-circuit current 0 165 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 Type Voltage Analog output 2		
Measurement data Minimum object diameter 10 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Performance data Supply voltage UB 18 30 V , DC Residual ripple 0 15 % , From UB Open-circuit current 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. Putputs Number of analog outputs 2 Piece(s) Analog outputs Current 0 24 mA Voltage 0 11 V Analog output 1 Type Voltage Voltage Analog output 2		
Minimum object diameter 10 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Performance data Supply voltage UB 18 30 V , DC Residual ripple 0 15 % , From UB Open-circuit current 0 165 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 Type Voltage Analog output 2	Dealit spacing	311111
Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Performance data Supply voltage UB Residual ripple Open-circuit current Outputs Number of analog outputs Current Outlouds Analog output 1 Type Voltage Analog output 2 Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. 0 24 mA Voltage Voltage	Measurement data	
Protective circuit Polarity reversal protection Short circuit protected Transient protection Performance data Supply voltage UB Residual ripple Open-circuit current Outputs Number of analog outputs Current Voltage Analog output 1 Type Voltage Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog outputs Current 0 24 mA Voltage Voltage Voltage Analog output 2	Minimum object diameter	10 mm
Protective circuit Polarity reversal protection Short circuit protected Transient protection Performance data Supply voltage UB Residual ripple Open-circuit current Outputs Number of analog outputs Current Voltage Analog output 1 Type Voltage Polarity reversal protection Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver. 2 Piece(s) Analog outputs Current 0 24 mA Voltage Voltage Voltage Analog output 2	Classical data	
Short circuit protected Transient protection Performance data Supply voltage UB		Polarity reversal protection
Supply voltage UB Residual ripple Open-circuit current Outputs Number of analog outputs Current Outputs Voltage Voltage Voltage	Protective circuit	Short circuit protected
Residual ripple 0 15 % , From UB Open-circuit current 0 165 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 Type Voltage Analog output 2	Performance data	
Open-circuit current 0 165 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 Type Voltage Voltage Analog output 2	Supply voltage U _B	18 30 V , DC
Sisting 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 Type Voltage Analog output 2	Residual ripple	0 15 % , From U _B
Number of analog outputs Analog outputs Current O 24 mA Voltage O 11 V Analog output 1 Type Voltage Voltage Analog output 2	Open-circuit current	0 165 mA , The specified values refer to the entire package consisting of transmitter and receiver.
Analog outputs Current 0 24 mA Voltage 0 11 V Analog output 1 Type Analog output 2 Voltage	Outputs	
Current 0 24 mA Voltage 0 11 V Analog output 1 Type Analog output 2 Voltage	Number of analog outputs	2 Piece(s)
Voltage 0 11 V Analog output 1 Type Voltage Analog output 2	Analog outputs	
Analog output 1 Type Voltage Analog output 2	Current	0 24 mA
Type Voltage Analog output 2	Voltage	0 11 V
Type Voltage Analog output 2	Analog output 1	
Analog output 2		Voltage
	Туре	Current



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
iming	
eadiness delay	450 ms
ycle time	3.76 ms
esponse time per beam	30 μs
ervice interface	
ype	IO-Link
IO-Link	
Function	Configuration via software Service
Connection	
umber of connections	2 Piece(s)
lug outlet	Axial
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
lechanical data	

Cubic

29 mm x 35.4 mm x 635 mm

Metal , Aluminum

Design

Dimension (W x H x L)

Housing material



Lens cover material	Plastic	
Net weight	800 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

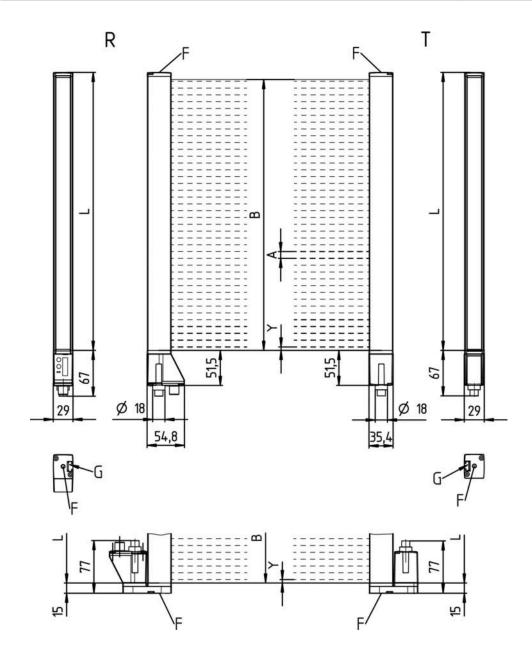
Certifications		
Degree of protection	IP 65	
Protection class	III	
Certifications	c CSA US	
Standards applied	IEC 60947-5-2	

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

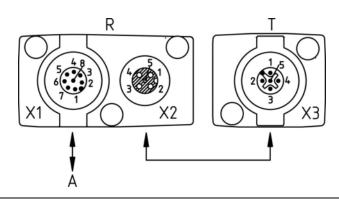
Dimensioned drawings

All dimensions in millimeters





- A Beam spacing 5 mm B Measurement field length 560 mm
- F M6 thread
- G Fastening groove L Profile length 568 mm
- T Transmitter
- R Receiver
- Y 2.5 mm



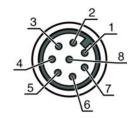


APWR / SW IN/OUT

Electrical connection

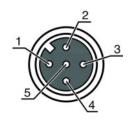
Connection 1		
Function	Configuration interface Signal IN Signal OUT Voltage supply	
Type of connection	Connector	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	8 -pin	
Encoding	A-coded	

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
50119374	CML720i- T05-560.A-M12	Light curtain transmitter	Operating range: 0.1 3.5 m Connection: Connector, M12, Axial, 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:

N	\sim	•	c

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
50129781	KDS DN-M12-5A- M12-5A-P3-050	Interconnection 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

Leuze electronic GmbH + Co. KG, In der Braike 1, 73277 Owen Phone: +49 7021 573-0, Fax: +49 7021 573-199



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
166	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.