



the sensor people





Figure can vary

Part no.: 50131842 CML720i-R05-1040.A/PN-M12 Light curtain receiver





# **Contents**

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### **Technical data**

Basic data			
Series Series	720		
Operating principle	Throughbeam principle		
Device type	Receiver		
Contains	2x BT-NC sliding block		
Application	Object measurement		
· · · · · · · · · · · · · · · · · · ·	0.2,00000.00		
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	1,040 mm		
Number of beams	208 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			
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		
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 <sub>B</sub> / 0 V		
Voltage type, inputs	DC		
Switching voltage, inputs	high: ≥6V low: ≤4V		
Input/output 1			
Activation/disable delay	1 ms		
<u> </u>			
Timing			
Readiness delay	1,500 ms		
Cycle time	6.64 ms		
Response time per beam	30 µs		
Interface			
Type PROFINET			



Profinet			
Function	Process		
Conformance class	В		
Protocol	PROFINET RT		
Switch functionality	Integrated		
iransmission speed 10 Mbit/s 100 Mbit/s			
	Too make		
Service interface			
Гуре	IO-Link		
IO-Link			
Function	Configuration via software Service		
Connection			
Jumber of connections	3 Piece(s)		
Plug outlet	Axial		
Connection 1	7 MIMI		
Function	Configuration interface		
Tunction	Connection to transmitter		
	Signal IN Signal OUT		
	Voltage supply		
Type of connection	RJ45		
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			
Function	BUS OUT		
Type of connection	Connector		
Thread size	M12		
Туре	Female		
Material	Metal		
No. of pins	4 -pin		
Encoding	D-coded		
Mechanical data	Cubia		
Design	Cubic 20 mm x 25 4 mm x 4 115 mm		
Dimension (W x H x L)	29 mm x 35.4 mm x 1,115 mm		
Housing material	Metal , Aluminum		
Lens cover material	Plastic		
Net weight	1,250 g		

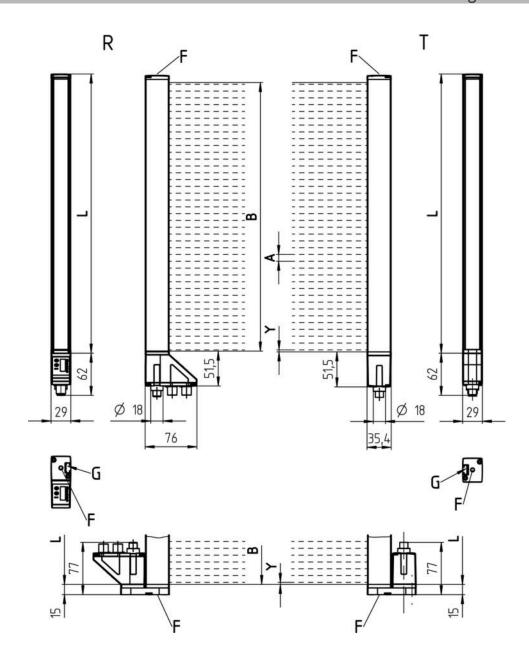


Housing color	Silver		
Type of fastening	Groove mounting Via optional mounting device	mounting ional mounting device	
Operation and display			
Type of display	LED OLED display		
Number of LEDs	4 Piece(s)		
Type of configuration	Software Teach-in		
Operational controls	Membrane keyboard		
Environmental data			
Ambient temperature, operation	-30 60 °C		
Ambient temperature, storage	-40 70 °C	-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		

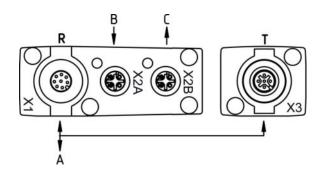
### **Dimensioned drawings**

All dimensions in millimeters





- A Beam spacing 5 mm B Measurement field length 1040 mm
- F M6 thread
- G Fastening groove
- L Profile length 1048 mm
- T Transmitter
- R Receiver
- Y 2.5 mm



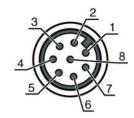


A PWR / SW IN/OUT B BUS IN C BUS OUT

### **Electrical connection**

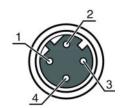
Connection 1	X1	
Function	Configuration interface Connection to transmitter Signal IN Signal OUT Voltage supply	
Type of connection	RJ45	
Thread size	M12	
Туре	Male	
Material	Metal	
No. of pins	8 -pin	
Encoding	A-coded	

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



Connection 2	X2A	
Function	BUS IN	
Type of connection	Connector	
Thread size	M12	
Туре	Female	
Material	Metal	
No. of pins	4 -pin	
Encoding	D-coded	

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

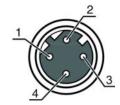


Connection 3	X2B	
Function	BUS OUT	
Type of connection	Connector	
Thread size	M12	
Туре	Female	



Connection 3	X2B	
Material	Metal	
No. of pins	4 -pin	
Encoding	D-coded	

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



### **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
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
50119380	CML720i- T05-1040.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	<b>Series:</b> 720i: 720i series 730i: 730i series
Υ	Device type: T: transmitter R: receiver

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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:

#### Note

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
	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

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Pa	art no. Des	esignation	Article	Description
5013	135074 KS E P7-09			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

## 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	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

## Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
EE.	429046	BT-2R1	Mounting bracket 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
165	50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

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### 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.