### SMART SENSOR BUSINESS

## Leuze electronic

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Part no.: 50123549 CML720i-R20-150.A/D3-M12 Light curtain receiver





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### Part no.: 50123549 – CML720i-R20-150.A/D3-M12 – Light curtain receiver

#### **Technical data**

Basic data			
Series	720		
Operating principle	Throughbeam principle		
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		
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	150 mm		
Number of beams	8 Piece(s)		
Beam spacing	20 mm		
Maaaurumankalaka			
Measurement data Minimum object diameter	30 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			
Open-circuit current 0 135 mA , The specified values refer to the entire pac			
Open-circuit current	0 15 % , From U <sub>B</sub> 0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver.		
Open-circuit current Inputs/outputs selectable	0 135 mA , The specified values refer to the entire package con-		
	0 135 mA , The specified values refer to the entire package con-		
Inputs/outputs selectable	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver.		
<i>Inputs/outputs selectable</i> Output current, max.	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA		
Inputs/outputs selectable Output current, max. Input resistance	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω		
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s)		
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable		
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC		
Inputs/outputs selectableOutput current, max.Input resistanceNumber of inputs/outputs selectableTypeVoltage type, outputsSwitching voltage, outputs	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: ≥6V		
Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs Switching voltage, inputs	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: ≥6V		
Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable         Type         Voltage type, outputs         Switching voltage, outputs         Switching voltage, inputs         Input/output 1         Activation/disable delay	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: ≥6V Iow: ≤4V		
Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable         Type         Voltage type, outputs         Switching voltage, outputs         Switching voltage, inputs         Input/output 1	0 135 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V high: ≥6V Iow: ≤4V		

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lufasta a	
Interface	DC 495
Туре	RS 485
RS 485 Function	Process
Function	FIUCESS
<b>•</b> • • • • •	
Service interface	
Type IO-Link	IO-Link
Function	Configuration via coffware
Function	Configuration via software Service
Connection	
Number of connections	2 Piece(s)
Plug outlet	Axial
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	BUSIN
Turne of connection	BUS OUT
Type of connection Thread size	Connector M12
	Female
Type Material	Metal
No. of pins	5 -pin
Encoding	B-coded
Mechanical data	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 235 mm
Housing material	Metal , Aluminum
Lens cover material	Plastic
Net weight	350 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

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### Part no.: 50123549 – CML720i-R20-150.A/D3-M12 – Light curtain receiver

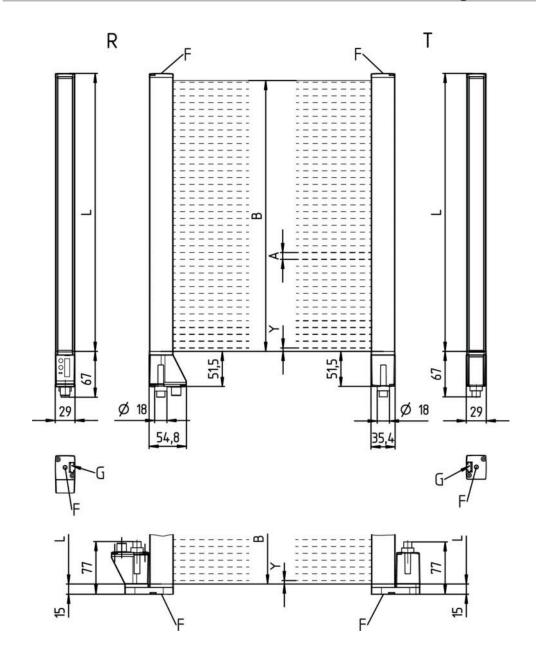
Environmental data			
Ambient temperature, operation	-30 60 °C		
Ambient temperature, storage	-40 70 °C		
Certifications			
Degree of protection	IP 65		
Protection class III			
Certifications c CSA US			
Standards applied	IEC 60947-5-2	IEC 60947-5-2	

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

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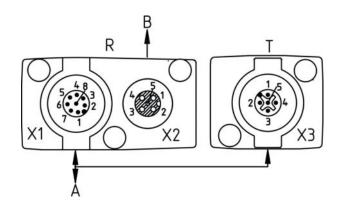


A Beam spacing 20 mm B Measurement field length 150 mm

F M6 thread

- G Fastening groove
- L Profile length 168 mm
- T Transmitter
- R Receiver
- Y 5 mm

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

#### **Electrical connection**

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

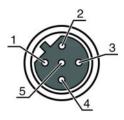
Pin	Pin assignment
1	V+
2	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx+
7	RS 485 Tx+
8	FE/SHIELD



Connection 2		
Function	BUS IN BUS OUT	
Type of connection	Connector	
Thread size	M12	
Туре	Female	
Material	Metal	
No. of pins	5 -pin	
Encoding	B-coded	

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Pin	Pin assignment
1	V+
2	Tx-
3	PB GND
4	Tx+
5	FE/SHIELD



#### **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
50119423	CML720i- T20-150.A-M12	Light curtain transmitter	Operating range: 0.3 6 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
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: connector outlet, axial R: rear connector outlet

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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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#### Connection technology - Y distribution cables

	Part no.	Designation	Article	Description
		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
	50123265	K-YPB M12A-5m- M12A-S-PUR	Interconnection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Male, B-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, B-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, B-coded, 5 -pin Shielded: Yes Cable length fork 1: 5,000 mm Cable length fork 2: 250 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
RR.	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

### 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