# SMART SENSOR BUSINESS

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Part no.: 50119723 CML720i-R05-720.A/L-M12 Light curtain receiver



Figure can vary

# Contents

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### Part no.: 50119723 – CML720i-R05-720.A/L-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
Spacial decign	
Special design	Crossed-beam scanning
Special design	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	720 mm
Number of beams	144 Piece(s)
Beam spacing	5 mm
Measurement data	
Vinimum object diameter	10 mm
,	
,	
Electrical data	
	Polarity reversal protection Short circuit protected Transient protection
Electrical data	Short circuit protected
Electrical data Protective circuit	Short circuit protected
Electrical data Protective circuit Performance data Supply voltage UB	Short circuit protected Transient protection 18 30 V , DC
Electrical data Protective circuit Performance data	Short circuit protected         Transient protection         18 30 V , DC         0 15 % , From UB
Electrical data Protective circuit Performance data Supply voltage U <sub>B</sub> Residual ripple	Short circuit protected Transient protection         18 30 V , DC         0 15 % , From UB         0 215 mA , The specified values refer to the entire package con-
Electrical data Protective circuit Performance data Supply voltage UB Residual ripple Open-circuit current	Short circuit protected Transient protection         18 30 V , DC         0 15 % , From UB         0 215 mA , The specified values refer to the entire package con-
Electrical data         Protective circuit         Performance data         Supply voltage UB         Residual ripple         Open-circuit current         Inputs/outputs selectable	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U <sub>B</sub> 0 215 mA , The specified values refer to the entire package con- sisting of transmitter and receiver.
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Electrical data         Protective circuit         Performance data         Supply voltage UB         Residual ripple         Open-circuit current         Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable	Short circuit protected Transient protection         18 30 V , DC         0 15 % , From U <sub>B</sub> 0 215 mA , The specified values refer to the entire package consisting of transmitter and receiver.         100 mA         6,000 Ω         4 Piece(s)
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Electrical data         Protective circuit         Performance data         Supply voltage UB         Residual ripple         Open-circuit current         Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable         Type         Voltage type, outputs	Short circuit protected Transient protection         18 30 V , DC         0 15 % , From UB         0 215 mA , The specified values refer to the entire package consisting of transmitter and receiver.         100 mA         6,000 Ω         4 Piece(s)         Inputs/outputs selectable         DC
Electrical data Protective circuit  Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs Switching voltage, outputs	Short circuit protected Transient protection  18 30 V , DC  0 15 % , From U <sub>B</sub> 0 215 mA , The specified values refer to the entire package con- sisting of transmitter and receiver.  100 mA  6,000 Ω  4 Piece(s)  Inputs/outputs selectable  DC  Typ. U <sub>B</sub> / 0 V  DC  high: ≥6V
Electrical data         Protective circuit         Performance data         Supply voltage UB         Residual ripple         Open-circuit current         Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable         Type         Voltage type, outputs         Switching voltage, outputs         Voltage type, inputs         Switching voltage, inputs	Short circuit protected Transient protection         18 30 V , DC         0 15 % , From UB         0 215 mA , The specified values refer to the entire package consisting of transmitter and receiver.         100 mA         6,000 Ω         4 Piece(s)         Inputs/outputs selectable         DC         Typ. UB / 0 V         DC
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Electrical data         Protective circuit         Performance data         Supply voltage UB         Residual ripple         Open-circuit current         Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable         Type         Voltage type, outputs         Switching voltage, outputs         Voltage type, inputs         Switching voltage, inputs	Short circuit protected Transient protection  18 30 V , DC  0 15 % , From U <sub>B</sub> 0 215 mA , The specified values refer to the entire package con- sisting of transmitter and receiver.  100 mA  6,000 Ω  4 Piece(s)  Inputs/outputs selectable  DC  Typ. U <sub>B</sub> / 0 V  DC  high: ≥6V
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Electrical data         Protective circuit         Performance data         Supply voltage UB         Residual ripple         Open-circuit current         Inputs/outputs selectable         Output current, max.         Input resistance         Number of inputs/outputs selectable         Type         Voltage type, outputs         Switching voltage, outputs         Switching voltage, inputs         Switching voltage, inputs         Switching voltage, inputs         Tinput/output 1         Activation/disable delay	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U <sub>B</sub> 0 215 mA , The specified values refer to the entire package con- sisting of transmitter and receiver. 100 mA 6,000 Ω 4 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V 0 1 ms

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## Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver

Interface					
Туре	IO-Link				
IO-Link					
COM mode	COM2				
Specification	V1.0.1				
Specification	V1.0.1 V1.1				
Min. cycle time	COM2 = 2.3 ms				
Service interface					
Туре	IO-Link				
IO-Link					
Function	Configuration via software				
	Service				
Connection					
Number of connections	2 Piece(s)				
Plug 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				
Mechanical data					
Design	Cubic				
Dimension (W x H x L)	29 mm x 35.4 mm x 795 mm				
Housing material	Metal , Aluminum				
Lens cover material	Plastic				
Net weight	950 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)				

## Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver

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			

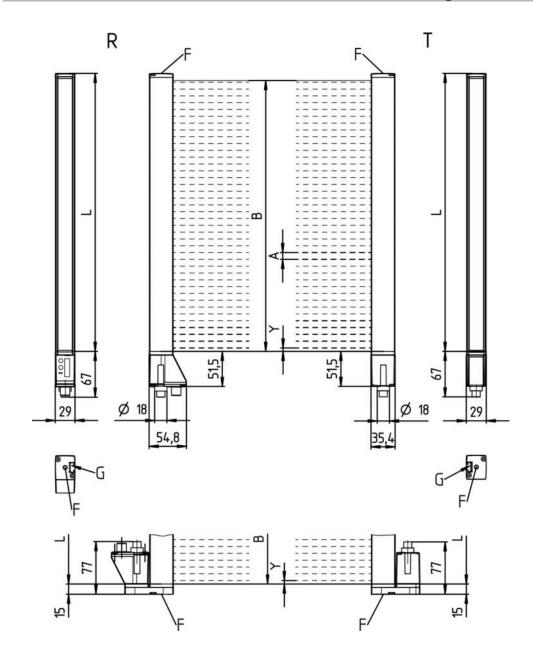
EC002549

#### **Dimensioned drawings**

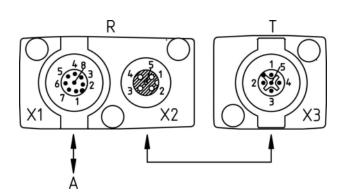
All dimensions in millimeters

ETIM 6.0

Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver



- A Beam spacing 5 mm B Measurement field length 720 mm
- F M6 thread
- G Fastening groove
- L Profile length 728 mm
- T Transmitter
- R Receiver
- Y 2.5 mm



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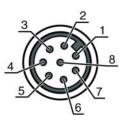
## Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver

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	101
3	GND
4	IO-Link
5	102
6	103
7	IO4
8	GND



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-			



## Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver

#### 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
50119376	CML720i- T05-720.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
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
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.

### Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver

#### 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
50		KD S-M12-8A- P1-050		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
	KDS DN-M12-5A- M12-5A-P3-050	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

## Part no.: 50119723 – CML720i-R05-720.A/L-M12 – Light curtain receiver

# Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
ęł.	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
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.