## SMART SENSOR BUSINESS

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Part no.: 50122900 CML720i-R05-1760.A/PB-M12 Light curtain receiver



Figure can vary

# Contents

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

### Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

#### **Technical data**

Basic data Series Operating principle			
	720		
	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	0.1 3.5 m		
Operating range limit	Typical operating range		
Operating range limit	0.1 4.5 m		
Measurement field length	1,760 mm		
Number of beams	352 Piece(s)		
Beam spacing	5 mm		
	5 11111		
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	0 350 mA , The specified values refer to the entire package consisting 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		
	DC		
	Tvp. Up / 0 V		
Switching voltage, inputs	low: ≤4V		
Input/output 1			
Input/output 1 Activation/disable delay	1 ms		
Activation/disable delay	1 ms		
Activation/disable delay Timing			
Activation/disable delay	1 ms 10.96 ms 30 μs		
	6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U <sub>B</sub> / 0 V DC high: ≥6V Iow: ≤4V		

### Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

Type         PROFIBUS DP           Function         Process           Service interface         Function           Type         IO-Link           IO-Link         Configuration via software Service           IO-Link         Configuration via software Service           IO-Link         Configuration via software Service           IO-Link         Configuration via software Service           Connection         2 Piece(a)           Runder of connections         2 Piece(a)           Function         Configuration interface Connection therape           Connection         Connector           Type of connection         Mala           Material         Metal           No. of pins         8-pin           Encoding         A-coded           Connector         Thread Size           Type of connecton         Connector           Thread Size         M12           Type         Fernate           Material	he has the second s	
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Type         IO-Link           Function         Configuration via software Service           Connection         Service           Plug outlet         Axial           Connection I         Configuration interface Connection transmitter Signal IV Violage supply           Type of connection         Connector on Connection transmitter Signal IV Violage supply           Type of connection         Connector on Connection transmitter Signal IV Violage supply           Type of connection         Connector on Connection I           Thread size         M12           Type of connection         B - pin           Encoding         Acoded           Connector O         Connector           Trated size         M12           Type of connecton         Connector           Encoding         Acoded           Connector O         Connector           Type of connecton         Connector	Function	PIOCESS
Type         IO-Link           Function         Configuration via software Service           Connection         Service           Plug outlet         Axial           Connection I         Configuration interface Connection transmitter Signal IV Violage supply           Type of connection         Connector on Connection transmitter Signal IV Violage supply           Type of connection         Connector on Connection transmitter Signal IV Violage supply           Type of connection         Connector on Connection I           Thread size         M12           Type of connection         B - pin           Encoding         Acoded           Connector O         Connector           Trated size         M12           Type of connecton         Connector           Encoding         Acoded           Connector O         Connector           Type of connecton         Connector	<b>A</b>	
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Function       Configuration via software Service         Connection       2 Piece(s)         Plug outlet       Axial         Connection 1       Configuration interface Connection to transmitter Signal IV To Voltage supply         Type of connection       Connector         Thread size       M12         Type of connection       Connector         Thread size       M12         Type of connection       Connector         Thread size       M12         Type of connection       Bus IN         Encoding       A-coded         Connection 2       Encoding         Function       BUS IN         Encoding       Connector         Thread size       M12         Type of connection       Connector         Thread size<		IO-LINK
Service           Connection         2 Picos(s)           Plug outlet         Axial           Connection 1         Connection to transmitter Signal OUT Signal OUT Voltage supply           Type of connection         Connector           Thread size         M12           Type of connection         Connector           Thread size         M12           Type of connection         Signal OUT Voltage supply           No. of pins         8-pin           Encoding         A-coded           Connector 2         Processor           Function         BUS N BUS OUT           Type of connecton         Connector           Thread size         M12           Type of connector         Encoding           Besign         Cubic           Encoding         B-coded           Material         Metal           No. of pins         S-pin           Encoding         B-coded		Configuration via pothypro
Number of connections         2 Piece(s)           Flig oulet         Axial           Connection 1         Configuration interface Connection to transmitter Signal NUT Voltage supply           Type of connection         Connector           Thread size         M12           Type of connection         Connector           Material         Metal           No. of pins         8 -pin           Encoding         A-coded           Connector 2         Type of connection           Function         BUS N           Bus OUT         Type of connection           Type of connection         Connector           Targe of connection         Connector           Type of connection         Connector           Thread size         M12           Type of connection         Connector           Thread size         M2           No. of pins         5 - pin           Encoding	Function	Service
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Voltage supply         Type of connection         Thread size       M12         Type       Male         Material       Metal         No. of pins       8-pin         Encoding       A-coded         Connector 2       Function         Function       BUS IN BUS OUT         Type of connection       Connector         Turead size       M12         Type of connection       Connector Commetor         Turead size       M12         Type of connection       Connector Commetor         Turead size       M12         Type       Female         Material       Metal         No. of pins       5 -pin         Encoding       B-coded         Mechanical data         Dimension (W x H x L)         Design       Cubic         Dimension (W x H x L)       29 mm x 35.4 mm x 1.835 mm         Housing material       Metal         Inscreter       Force material         Net weight       1,900 g         Housing color       Silver         Type of fastening       Groove mounting device         Veoretion and display         Number of L		Signal IN
Type of connection       Connector         Thread size       M12         Type       Male         Material       Metal         No: of pins       8-pin         Encoding       A-coded         Connection 2       Function         Function       BUS IN BUS OUT         Type of connection       Connector         Thread size       M12         Type of connection       Connector         Material       Metal         No. of pins       5-pin         Encoding       B-coded         Mechanical data       Design         Dimension (Wx H x L)       29 mm x 35.4 mm x 1.835 mm         Housing material       Metal , Aluminum         Lens cover material       Plastic         Net weight		Signal OUT Voltage supply
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Material         Metal           No. of pins         8 -pin           Encoding         A-coded           Connection 2         Function           Function         BUS IN BUS OUT           Type of connection         Connector           Thread size         M12           Type         Female           Material         Metal           No. of pins         5 -pin           Encoding         B-coded           Mechanical data         Encoded           Design         Cubic           Dimension (W x H x L)         29 mm x 35.4 mm x 1,835 mm           Housing material         Metal, Aluminum           Lens cover material         Plastic           Net weight         1,900 g           Housing color         Silver           Type of fastening         Groove mounting device           Coperation and display         LED OLED display           Number of LEDs         2 Plece(s)           Type of configuration         Software Treach-in		
Encoding       A-coded         Connection 2       Function         Function       BUS IN BUS OUT         Type of connection       Connector         Thread size       M12         Type       Female         Material       Metal         No. of pins       5 -pin         Encoding       B-coded         Mechanical data       Design         Dimension (W x H x L)       29 mm x 35.4 mm x 1,835 mm         Housing material       Metal , Aluminum         Lens cover material       Plastic         Net weight       1,900 g         Housing color       Silver         Type of fastening       Groove mounting Via optional mounting device         Operation and display       LED OLED display         Number of LEDs       2 Piece(s)         Type of configuration       Software Teach-in		
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Type of connection       Connector         Thread size       M12         Type       Female         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 1,835 mm         Housing material       Metal , Aluminum         Lens cover material       Plastic         Net weight       1,900 g         Housing color       Silver         Type of fastening       Groove mounting via optional mounting device         Operation and display         Number of LEDs       2 Piece(s)         Type of configuration       Software Teach-in	Connection 2	
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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 1,835 mm           Housing material         Metal , Aluminum           Lens cover material         Plastic           Net weight         1,900 g           Housing color         Silver           Type of fastening         Groove mounting via optional mounting device           Deration and display           Number of LEDs         2 Piece(s)           Type of configuration         Software Teach-in		
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Mechanical data         Design       Cubic         Dimension (W x H x L)       29 mm x 35.4 mm x 1,835 mm         Housing material       Metal , Aluminum         Lens cover material       Plastic         Net weight       1,900 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		
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Housing materialMetal , AluminumLens cover materialPlasticNet weight1,900 gHousing colorSilverType of fasteningGroove mounting Via optional mounting deviceOperation and displayType of displayLED OLED displayNumber of LEDs2 Piece(s)Type of configurationSoftware Teach-in		
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Type of fastening       Groove mounting Via optional mounting device         Operation and display       LED OLED display         Type of display       LED OLED display         Number of LEDs       2 Piece(s)         Type of configuration       Software Teach-in		
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		Groove mounting
Type of displayLED OLED displayNumber of LEDs2 Piece(s)Type of configurationSoftware Teach-in		Via optional mounting device
Type of displayLED OLED displayNumber of LEDs2 Piece(s)Type of configurationSoftware Teach-in		
OLED display           Number of LEDs         2 Piece(s)           Type of configuration         Software Teach-in		
Type of configuration Software Teach-in	Type of display	
Teach-in	Number of LEDs	2 Piece(s)
Operational controls Membrane keyboard	Type of configuration	
	Operational controls	Membrane keyboard

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### Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

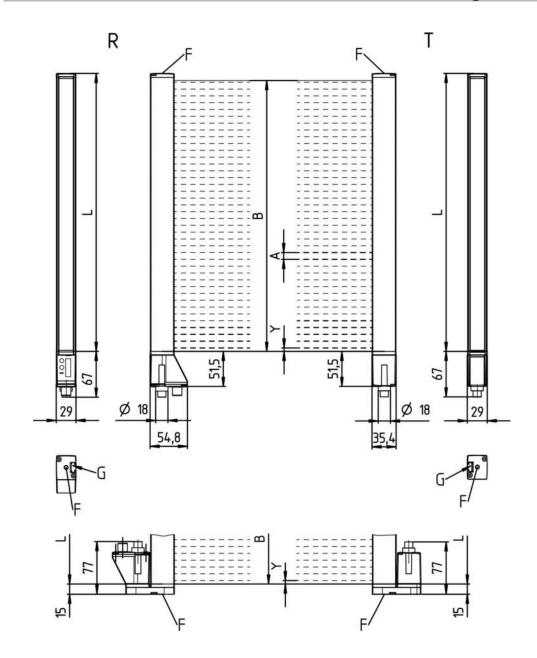
Environmental data		
Ambient temperature, operation	-30 60 °C	
Ambient temperature, storage	-40 70 °C	
Certifications		
Degree of protection	IP 65	
Protection class	III	
Certifications	c CSA US	
Standards applied IEC 60947-5-2		

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

Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver



A Beam spacing 5 mm B Measurement field length 1760 mm

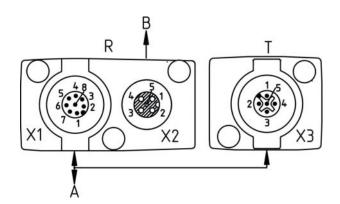
F M6 thread

- G Fastening groove
- L Profile length 1768 mm

T Transmitter

- R Receiver
- Y 2.5 mm

Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

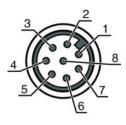


A PWR / SW IN/OUT B BUS IN / OUT

#### **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

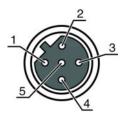
Pin	Pin assignment
1	V+
2	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx+
7	RS 485 Tx+
8	FE/SHIELD



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	

## Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

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
50119389	CML720i- T05-1760.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

### Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

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

#### Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

### 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
ęł.	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.	Diagnostics set	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.

### Part no.: 50122900 – CML720i-R05-1760.A/PB-M12 – Light curtain receiver

Part no.	Designation	Article	Description
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
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A list with all available accessories can be found on the Leuze electronic website in the Download tab of the article detailed page.