SMART SENSOR BUSINESS

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Part no.: 50119678 CML720i-R20-2870.A/CN-M12 Light curtain receiver



Figure can vary

Contents

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- · Dimensioned drawings
- Electrical connection
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- Suitable transmitters
- Part number code
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Part no.: 50119678 – CML720i-R20-2870.A/CN-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 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	2,870 mm
Number of beams	144 Piece(s)
Beam spacing	20 mm
Measurement data	
Ainimum object diameter	30 mm
	Polarity reversal protection
	Polarity reversal protection Short circuit protected Transient protection
	Short circuit protected
Protective circuit Performance data	Short circuit protected
Protective circuit Performance data Supply voltage UB	Short circuit protected Transient protection 18 30 V , DC
Protective circuit Performance data	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 435 mA , The specified values refer to the entire package con
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
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Protective circuit Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max.	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 435 mA , The specified values refer to the entire package con sisting of transmitter and receiver.
Protective circuit Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 435 mA , The specified values refer to the entire package con sisting of transmitter and receiver. 100 mA 6,000 Ω
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 UB 0 435 mA , The specified values refer to the entire package con sisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s)
Protective circuit Performance data Supply voltage UB Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 435 mA , The specified values refer to the entire package con sisting of transmitter and receiver. 100 mA 6,000 Ω
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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 _B 0 435 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 _B / 0 V
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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 ∨ , DC 0 15 % , From UB 0 435 mA , The specified values refer to the entire package consisting of transmitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 ∨ DC high: ≥6V
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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 Input/output 1 Activation/disable delay	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From UB 0 435 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. UB / 0 V DC high: ≥6V low: ≤4V
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 Switching voltage, inputs Switching voltage, inputs	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 435 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 _B / 0 V DC high: ≥6V low: ≤4V
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 Timing	Short circuit protected Transient protection 18 30 V , DC 0 15 % , From U _B 0 435 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 _B / 0 V DC high: ≥6V low: ≤4V 1 ms

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Part no.: 50119678 – CML720i-R20-2870.A/CN-M12 – Light curtain receiver

Interface	
Туре	CANopen
CANopen	
Function	Process
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
	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	BUS IN BUS OUT
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 2,955 mm
Housing material	Metal , Aluminum
Lens cover material	Plastic
Net weight	2,900 g
Housing color	Silver
Type of fastening	Groove mounting Via optional mounting device
Operation and display	
Type of display	LED
21 F - 2	OLED display
Number of LEDs	2 Piece(s)
Type of configuration	Software Teach-in
Operational controls	Membrane keyboard

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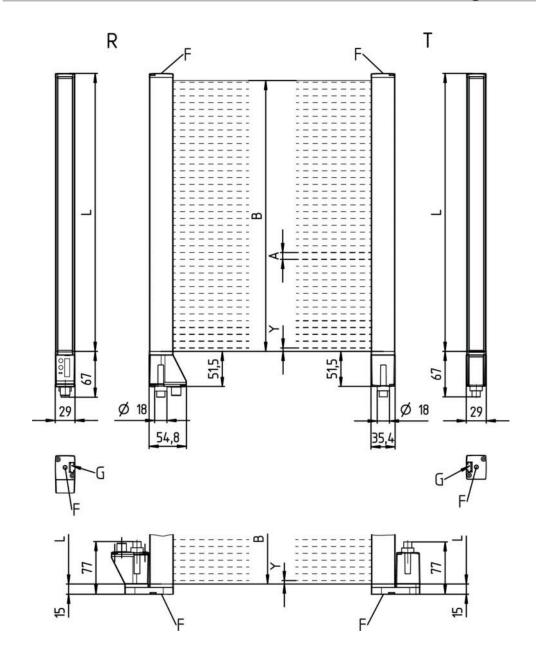
Environmental data		
Ambient temperature, operation	-30 60 °C	
Ambient temperature, storage	-40 70 °C	
Certifications		
Degree of protection	IP 65	
Protection class		
Certifications	c CSA US	
Standards applied	IEC 60947-5-2	

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.: 50119678 – CML720i-R20-2870.A/CN-M12 – Light curtain receiver



A Beam spacing 20 mm B Measurement field length 2870 mm

F M6 thread

- G Fastening groove
- L Profile length 2888 mm

T Transmitter

R Receiver

Y 5 mm

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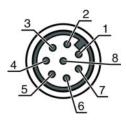


A PWR / SW IN/OUT B BUS IN / OUT

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

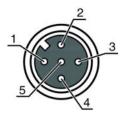
Pin	Pin assignment
1	V+
2	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx-
7	RS 485 Tx+
8	FE/SHIELD



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

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Pin	Pin assignment	
1	FE/SHIELD	
2	n.c.	
3	CAN GND	
4	CAN H	
5	CAN L	



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
50119440	CML720i- T20-2870.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: 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 - 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

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
	50118185	K-YCN M12A- M12A-S-PUR	Interconnection cable	Suitable for interface: CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 3: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length fork 1: 250 mm Cable length fork 2: 350 mm Sheathing material: PUR

Connection technology - Terminating resistors

Part no.	Designation	Article	Description
50040099	TS 01-5-SA	Terminator plug	Suitable for: DeviceNet, CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Function: Bus termination

Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
4 4 4 4	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
ę.	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

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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.