

# **Technical data sheet** Light curtain receiver

Part no.: 50120065

CML720i-R05-2160.R/L-M12



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# **Technical data**



### Basic data

Series	720
Operating principle	Throughbeam principle
Device type	Receiver
Contains	Accessories for the use of the BT-2R1
Application	Object measurement

### **Special version**

Special version	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	2,160 mm
Number of beams	432 Piece(s)
Beam spacing	5 mm

### Measurement data

Minimum	object o	diameter	10 mm
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### **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	0 435 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.

### Inputs/outputs selectable

Activation/disable delay

Output current, max.	100 mA
Input resistance	6,000 Ω
Number of inputs/outputs selectable	4 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	

0 ... 1 ms

### **Timing**

Readiness delay	400 ms	
Cycle time	13.36 ms	
Response time per beam	30 µs	
Interface		

Туре	IO-Lin
1 y p c	10 L

IO-Link	
COM mode	COM2
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	Rear side

### Connection 1

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 2,183 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic
Net weight	2,300 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

### **Environmental data**

Ambient temperature, operation	-30 60 °C
Ambient temperature, storage	-40 70 °C

# **Technical data**



### Certifications

Degree of protection	IP 65
Protection class	III
Certifications	c CSA US
Standards applied	IEC 60947-5-2

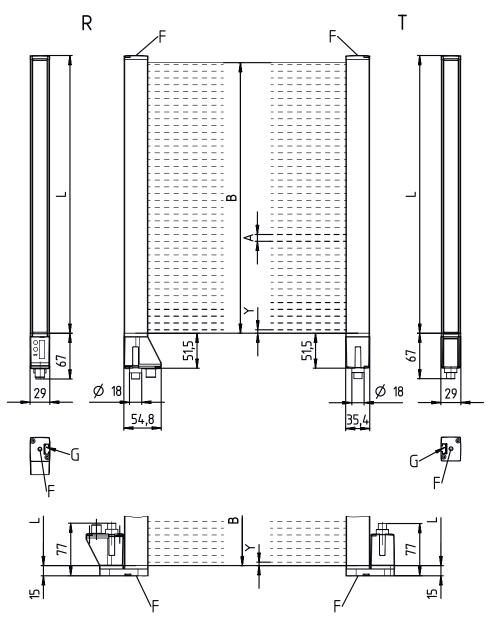
### Classification

Customs tariff number	90314990
eCl@ss 5.1.4	27270910
eCl@ss 8.0	27270910
eCl@ss 9.0	27270910
eCl@ss 10.0	27270910
eCI@ss 11.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549

# **Dimensioned drawings**



All dimensions in millimeters



- A Beam spacing 5 mm
- B Measurement field length 2160 mm
- F M6 thread
- G Fastening groove
- L Profile length 2168 mm
- T Transmitter
- R Receiver
- Y 2.5 mm

# **Dimensioned drawings**



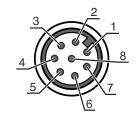


# **Electrical connection**

### **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

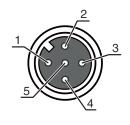
Pin	Pin assignment
1	V+
2	101
3	GND
4	IO-Link
5	102
6	103
7	104
8	GND



### **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-







LED	Display	Meaning
1	Green, continuous light	Operational readiness
	Green, flashing	Teach / error
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
50119475	CML720i-T05- 2160.R-M12	Light curtain transmitter	Operating range: 0.1 3.5 m Connection: Connector, M12, Rear side, 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				
Υ	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				
ссс	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 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
50135128	KD S-M12-8A-P1-050	Connection cable	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
	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

# Mounting technology - Mounting brackets

Part no.	Designation	Article	Description
50142900	BT 700M.5-2SET	Mounting device set	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

### **Accessories**



# Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
ee.	429046	BT-2R1	Mounting bracket set	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

# Configuration devices

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.
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 website in the Download tab of the article detailed page.