

# **Technical data sheet** Light curtain receiver Part no.: 50122895 CML720i-R05-160.R/PB-M12



Leuze electronic GmbH + Co. KG

info@leuze.com • www.leuze.com changes 
 The Sensor People
 In der Braike 1, D-73277 Owen/Germany
 Phone: +49 7021 573-0 • Fax: +49 7021 573-199
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#### **Technical data**

# Leuze

Operating principle         Throughbeam principle           Device type         Receiver           Contains         Accessories for the use of the BT-2R1           Application         Object measurement           Special version         Crossed-beam scanning Diagonal-beam scanning           Special version         Crossed-beam scanning           Operating range         0.1 3.5 m           Operating range         Guaranteed operating range           Operating range limit         10 4.5 m           Operating range limit         Typical operating range           Measurement field length         160 mm           Number of beams         32 Plece(s)           Beam spacing         5 mm           Minimum object diameter         10 mm           Electrical data         Polarity reversal protection           Protective circuit         Polarity reversal protection           Supply voltage Ug         18 30 V, DC           Residual ripple         0 15 %, From Ug           Open-circuit current         0 15 %, From Ug           Open-circuit current         0 15 %, From Ug           Open-circuit selectable         Output current, max.           Inputs/outputs selectable         Piece(s)           Type         Input	Series	720
Device type         Receiver           Contains         Accessories for the use of the BT-2R1           Application         Object measurement           Special version         Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning           Operating range         0.13.5 m           Operating range         0.13.5 m           Operating range         0.1		
Contains       Accessories for the use of the BT-2R1         Application       Object measurement         Special version       Crossed-beam scanning         Diagonal-beam scanning       Diagonal-beam scanning         Operating range       0.1 3.5 m         Operating range       0.1 3.5 m         Operating range       Guaranteed operating range         Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       160 mm         Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Short circuit current       0 15 %, From U <sub>B</sub> Open-circuit current       10 mA         Input solutputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/output selectable         Output current, max.       100 mA <td></td> <td></td>		
Application Object measurement Special version Special version Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Operating range Sumply obtage Operating Operating Operating range Operating		
Special version Special version Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Parallel-beam scanning Operating range Operating range Guaranteed operating range Operating range Operating range Summer field length 160 mm Number of beams 32 Piece(s) Beam spacing 5 mm Measurement data Minimum object diameter 10 mm Electrical data Protective circuit Potective circuit Potective circuit Performance data Supply voltage U <sub>B</sub> 18 30 V, DC Residual ripple 015 %, From U <sub>B</sub> Open-circuit current 015 %, From U <sub>B</sub> Open-circuit current 015 %, From U <sub>B</sub> Open-circuit selectable Output current, max. 100 mA Input resistance 6,000 Ω Number of inputs/outputs selectable Voltage type, outputs DC Switching voltage, inputs DC Swit		
Special version Crossed-beam scanning Diagonal-beam scanning Parallel-beam scanning Parallel-beam scanning Optical data Operating range 0.13.5 m Operating range S mm Measurement field length 160 mm Number of beams 32 Piece(s) Switching voltage, inputs Notage Number of inputs/outputs DC Switching voltage, inputs Nigh: ≥6V Iow: ≤ 4 V Input/output 1 Activation/disable delay 1 ms Time behavior Cycle time 136 ms Response time per beam 30 µs Interface Type PROFIBUS DP	Application	Object measurement
Diagonal-beam scanning Parallel-beam scanning Optical data Operating range Som Measurement field length 160 m Number of beams Operating Open-ofrouties Color Number of inputs/outputs selectable Output current, max. 100 Ma Input resistance Number of inputs/outputs DC Switching voltage, inputs Nigh: ≥6V Iow: ≤4 V Input/output 1 Activation/disable delay 1ms Time behavior Cycle time 1.36 ms Response time per beam 30 µs Interface ProFiBUS DP	Special version	
Parallel-beam scanning           Optical data           Operating range         0.1 3.5 m           Operating range limit         0.1 4.5 m           Operating range limit         10 nm           Number of beams         32 Piece(s)           Beam spacing         5 mm           Measurement field length         160 nm           Number of beams         32 Piece(s)           Beam spacing         5 mm           Minimum object diameter         10 mm           Electrical data         Polarity reversal protection           Short circuit protected         Transient protected           Transient protection         Short circuit protected           Supply voltage U <sub>B</sub> 18 30 V, DC           Residual ripple         0 15 %, From U <sub>B</sub> Open-circuit current         0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.           Input resistance         6,000 Ω           Number of inputs/outputs selectable         2 Piece(s)           Type         Input/output           Voltage type, outputs         DC           Switching voltage, outputs         DC           Switching voltage, outputs         DC           Switching voltage, inputs         DC </td <td>Special version</td> <td>Crossed-beam scanning</td>	Special version	Crossed-beam scanning
Optical data         0.13.5 m           Operating range         0.13.5 m           Operating range limit         0.14.5 m           Operating range limit         Typical operating range           Measurement field length         160 mm           Number of beams         32 Piece(s)           Beam spacing         5 mm           Measurement data         10 mm           Minimum object diameter         10 mm           Electrical data         Polarity reversal protection           Short circuit protected         Transient protected           Transient protection         Short circuit protected           Supply voltage U <sub>B</sub> 18 30 V, DC           Residual ripple         0 135 mA. The specified values refer           Open-circuit current         0 135 mA. The specified values refer           Unputs/outputs selectable         Output current, max.           Inputs/outputs selectable         Output current, max.           Number of inputs/outputs selectable         DC           Switching voltage, outputs         DC           Switching voltage, outputs         Typ. U <sub>b</sub> / 0 V           Voltage type, inputs         DC           Switching voltage, inputs         DC           Switching voltage, inputs <t< td=""><td></td><td>Diagonal-beam scanning</td></t<>		Diagonal-beam scanning
Operating range       0.13.5 m         Operating range       Guaranteed operating range         Operating range limit       0.14.5 m         Operating range limit       Typical operating range         Measurement field length       160 mm         Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       Minimum object diameter         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protected         Transient protection       Short circuit protected         Supply voltage UB       18 30 V, DC         Residual ripple       0 15 %, From UB         Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/output selectable         Voltage type, outputs       DC         Switching voltage, outputs       Typ. UB / 0 V         Voltage type, inputs       DC		Parallel-beam scanning
Operating range       Guaranteed operating range         Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       160 mm         Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       Minimum object diameter         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Performance data       Supply voltage Ug         Supply voltage Ug       18 30 V, DC         Residual ripple       0 15 %, From Ug         Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Input/output         Voltage type, outputs       DC         Switching voltage, outputs       Typ. Ug / 0 V         Voltage type, inputs       DC	Optical data	
Operating range limit       0.1 4.5 m         Operating range limit       Typical operating range         Measurement field length       160 mm         Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       Minimum object diameter         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       Supply voltage U <sub>B</sub> Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values refer         to the entire package consisting of transmitter and receiver.       Input resistance         Number of inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/output selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Imput/output 1 <td>Operating range</td> <td>0.1 3.5 m</td>	Operating range	0.1 3.5 m
Operating range limit       Typical operating range         Measurement field length       160 mm         Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.       100 mA         Inputs of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage type inputs       DC         Cycle time       1.36 ms	Operating range	Guaranteed operating range
Measurement field length       160 mm         Number of beams       32 Piece(s)         Beam spacing       5 mm         Minimum object diameter       10 mm         Electrical data       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         Open-circuit current       0 135 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)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Cycle time       1.36 ms         Response time per beam       30 µs         Interface       Type <t< td=""><td>Operating range limit</td><td>0.1 4.5 m</td></t<>	Operating range limit	0.1 4.5 m
Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       5 mm         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       Supply voltage U <sub>B</sub> Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values referere to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage inputs       10w ≤ 4 V         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       30 µs         Interface       PROFIBUS DP <td>Operating range limit</td> <td>Typical operating range</td>	Operating range limit	Typical operating range
Number of beams       32 Piece(s)         Beam spacing       5 mm         Measurement data       5 mm         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       Supply voltage U <sub>B</sub> Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values referere to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage inputs       10w ≤ 4 V         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       30 µs         Interface       PROFIBUS DP <td></td> <td></td>		
Beam spacing       5 mm         Measurement data         Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Short circuit protected         Transient protection       Short circuit protected         Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       30 µs         Interface       PROFIBUS DP		32 Piece(s)
Measurement data Minimum object diameter I I I I I I I I I I I I I I I I I I I	Beam spacing	
Minimum object diameter       10 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Supply voltage UB       18 30 V, DC         Residual ripple       0 15 %, From UB         Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       1 ms         Time behavior       1.36 ms         Response time per beam       30 μs         Interface       Type         PROFIBUS DP       PROFIBUS DP		
Flectrical data         Protective circuit       Polarity reversal protection         Short circuit protected       Transient protection         Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values referer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       0 0 mA         Output current, max.       100 mA         Inputs/outputs selectable       0 0 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       Typ. U <sub>B</sub> / 0 V         Voltage type, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6V         low: ≤ 4 V       Input/output 1         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       1.36 ms         Type       PROFIBUS DP		10 mm
Protective circuit       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       Supply voltage UB       18 30 V, DC         Residual ripple       0 15 %, From UB       Open-circuit current       0 135 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)         Type       Inputs/outputs         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       PROFIBUS DP	-	
Short circuit protected Transient protectionPerformance dataSupply voltage $U_B$ 18 30 V, DCResidual ripple0 15 %, From $U_B$ Open-circuit current0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.Inputs/outputs selectableCOutput current, max.100 mAInput resistance6,000 $\Omega$ Number of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsTyp. $U_B / 0 V$ Voltage type, inputsDCSwitching voltage, inputshigh: $\geq 6V$ low: $\leq 4 V$ Input/output 1 Activation/disable delay1 msTime behavior30 µsCycle time1.36 msResponse time per beam30 µsInterfaceTypeTypePROFIBUS DPPROFIBUS DPVoltage DP		
Performance data         Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       Type         PROFIBUS DP       PROFIBUS DP	Protective circuit	
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Supply voltage UB18 30 V, DCResidual ripple0 15 %, From UBOpen-circuit current0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.Inputs/outputs selectable0 0 mAOutput current, max.100 mAInput resistance6,000 ΩNumber of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsbigh: ≥6VInput/output 1Activation/disable delayActivation/disable delay1 msTime behavior30 µsCycle time1.36 msResponse time per beam30 µsInterfacePROFIBUS DPPROFIBUS DPPROFIBUS DP		Transient protection
Residual ripple       015 %, From U <sub>B</sub> Open-circuit current       0135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       Output current, max.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       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         Iow: ≤ 4 V       Iow: ≤ 4 V         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       Type         PROFIBUS DP       PROFIBUS DP	Performance data	
Open-circuit current       0 135 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Inputs/outputs selectable       0 unput current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       PROFIBUS DP	Supply voltage U <sub>B</sub>	18 30 V, DC
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) Type Inputs/outputs selectable 2 Piece(s) Type DC Switching voltage, outputs DC Switching voltage, outputs DC Switching voltage, inputs DC Switching voltage, inputs DC Switching voltage, inputs DC Switching voltage, inputs 1 Activation/disable delay 1 ms Time behavior Cycle time 1.36 ms Response time per beam 30 μs Interface Type PROFIBUS DP	Residual ripple	0 15 %, From U <sub>B</sub>
Output current, max.100 mAInput resistance6,000 ΩNumber of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsNigh: ≥6VInput/output 1Activation/disable delayActivation/disable delay1 msTime behavior30 μsInterfacePROFIBUS DP	Open-circuit current	to the entire package consisting of trans
Output current, max.100 mAInput resistance6,000 ΩNumber of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsNigh: ≥6VInput/output 1Activation/disable delayActivation/disable delay1 msTime behavior30 μsInterfacePROFIBUS DP	Inputs/outputs soloctable	
Input resistance       6,000 Ω         Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6∨         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 µs         Interface       PROFIBUS DP		100 mA
Number of inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6V         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Time behavior       30 μs         Interface       PROFIBUS DP	•	
Type     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       Input/output 1     Activation/disable delay       Activation/disable delay     1 ms       Time behavior     30 μs       Interface     PROFIBUS DP		-,
Voltage type, outputs     DC       Switching voltage, outputs     Typ. U <sub>B</sub> / 0 V       Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6V       Input/output 1     Input/output 1       Activation/disable delay     1 ms       Time behavior     30 μs       Interface     PROFIBUS DP		
Switching voltage, outputs       Typ. U <sub>B</sub> / 0 ∨         Voltage type, inputs       DC         Switching voltage, inputs       high: ≥6∨         low: ≤ 4 ∨       low: ≤ 4 ∨         Input/output 1       Activation/disable delay       1 ms         Time behavior       1.36 ms         Cycle time       1.36 ms         Response time per beam       30 μs         Interface       PROFIBUS DP		
Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6∨       low: ≤ 4 ∨       Input/output 1       Activation/disable delay     1 ms       Time behavior       Cycle time     1.36 ms       Response time per beam     30 μs       Interface       Type     PROFIBUS DP		
Switching voltage, inputs     high: ≥6∨       Input/output 1     Input/output 1       Activation/disable delay     1 ms       Time behavior     1.36 ms       Cycle time     1.36 ms       Response time per beam     30 μs       Interface     PROFIBUS DP		
low: ≤ 4 V Input/output 1 Activation/disable delay 1 ms Time behavior Cycle time 1.36 ms Response time per beam 30 μs Interface Type PROFIBUS DP		
Input/output 1       Activation/disable delay     1 ms       Time behavior     1.36 ms       Cycle time     1.36 ms       Response time per beam     30 μs       Interface     PROFIBUS DP	Switching voltage, inputs	
Activation/disable delay       1 ms         Time behavior       1.36 ms         Cycle time       1.36 ms         Response time per beam       30 μs         Interface       Type         PROFIBUS DP       PROFIBUS DP		IOW. ≤ 4 V
Activation/disable delay       1 ms         Time behavior       1.36 ms         Cycle time       1.36 ms         Response time per beam       30 μs         Interface       Type         PROFIBUS DP       PROFIBUS DP	Input/output 4	
Time behavior Cycle time 1.36 ms Response time per beam 30 μs Interface Type PROFIBUS DP PROFIBUS DP	Indut/outdut 1	1 ms
Cycle time     1.36 ms       Response time per beam     30 μs       Interface       Type     PROFIBUS DP	· ·	1.1112
Response time per beam     30 µs       Interface       Type     PROFIBUS DP	· ·	
Interface Type PROFIBUS DP PROFIBUS DP	Activation/disable delay	
Type PROFIBUS DP PROFIBUS DP	Activation/disable delay Time behavior	
PROFIBUS DP	Activation/disable delay Time behavior Cycle time	1.36 ms
	Activation/disable delay Time behavior Cycle time Response time per beam	1.36 ms
	Activation/disable delay Time behavior Cycle time	1.36 ms 30 μs
Process	Activation/disable delay Time behavior Cycle time Response time per beam Interface Type	1.36 ms 30 μs
	Activation/disable delay Time behavior Cycle time Response time per beam Interface Type PROFIBUS DP	1.36 ms 30 μs PROFIBUS DP

Service interface				
Ту	/pe	IO-Link		
	IO-Link			
	Function	Configuration via software		
	Function	Service		
		Service		
С	onnection			
N	umber of connections	2 Piece(s)		
P	lug outlet	Rear side		
	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		
	Litooding	// 00000		
	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		
M	lechanical data			
D	esign	Cubic		
	imension (W x H x L)	29 mm x 35.4 mm x 183 mm		
	ousing material	Metal		
M	etal housing	Aluminum		
	ens cover material	Plastic		
	et weight	400 g		
	ousing color	Silver		
Ту	/pe of fastening	Groove mounting		
		Via optional mounting device		
0	peration and display			
T١	/pe of display	LED		
- 1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	OLED display		
Ν	umber of LEDs	2 Piece(s)		
	/pe of configuration	Software		
	- <b>-</b>	Teach-in		
E	nvironmental data			
Α	mbient temperature, operation	-30 60 °C		
	mbient temperature, storage	-40 70 °C		

## **Technical data**

#### Certifications

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

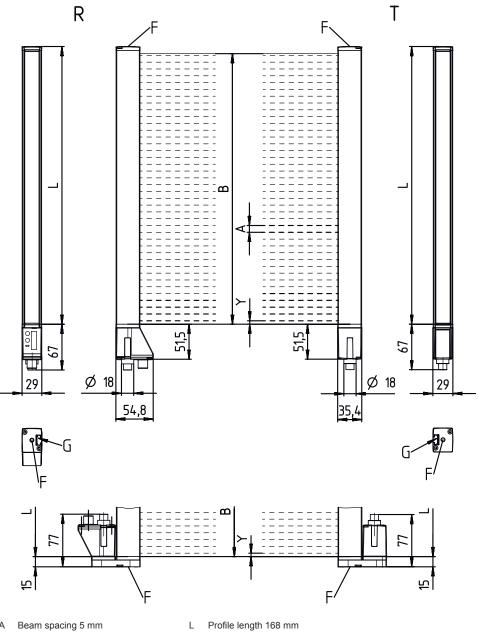
#### Classification

Customs tariff number	90314990
ECLASS 5.1.4	27270910
ECLASS 8.0	27270910
ECLASS 9.0	27270910
ECLASS 10.0	27270910
ECLASS 11.0	27270910
ECLASS 12.0	27270910
ECLASS 13.0	27270910
ECLASS 14.0	27270910
ECLASS 15.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	EC002549
ETIM 10.0	EC002549



#### **Dimensioned drawings**

All dimensions in millimeters



Beam spacing 5 mm А В

Fastening groove

- Measurement field length 160 mm
- F M6 thread

G

- R
  - Υ 2.5 mm

Т

Transmitter

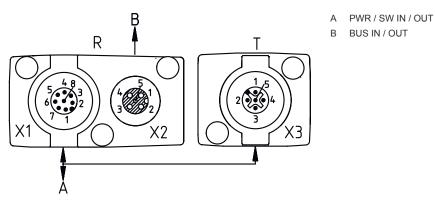
Receiver

We reserve the right to make technical Leuze electronic GmbH + Co. KG info@leuze.com • www.leuze.com changes 
 The Sensor People
 In der Braike 1, D-73277 Owen/Germany
 Phone: +49 7021 573-0 • Fax: +49 7021 573-199
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# Leuze

#### **Dimensioned drawings**





## **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

## **Electrical connection**

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

## **Operation and display**

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
50119450	CML720i-T05-160.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
Y	Device type T: transmitter R: receiver
22	<b>Beam spacing</b> 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm
AAAA	Measurement field length [mm], dependent on beam spacing
В	Equipment A: Axial connector outlet 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



#### Part number code



DDD	Special equipment -PS: Power Setting
EEE	Electrical connection M12: M12 connector
FFF	-EX: Explosion protection
	Note
A	S A list with all available device types can be found on the Leuze website at www.leuze.com.

#### Notes

Observe intended use!
<ul> <li>This product is not a safety sensor and is not intended as personnel protection.</li> <li>The product may only be put into operation by competent persons.</li> <li>Only use the product in accordance with its intended use.</li> </ul>



#### 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 Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC

#### 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

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#### Accessories

## 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

#### Mounting technology - Swivel mounts

	Part no.	Designation	Article	Description
ęę.	429029	BT-2RG	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
с. С	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.
	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.

	Note
6	☆ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.