

## **Technical data sheet** Light curtain receiver Part no.: 50131961 CML720i-R20-1750.R/PN-M12



We reserve the right to make technical changes eng • 2020-12-25

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### **Technical data**

# Leuze

#### Racio data

Operating principle         Throughbeam principle           Device type         Receiver           Contains         Accessories for the use of the BT-2R1           Application         Object measurement           Special version         Crossed-beam scanning           Depreting range         Oananteed operating range           Operating range         0.3 7 m           Operating range         0.3 7 m           Operating range limit         0.2 9 m           Weasurement field length         1.750 mm           Number of beams         88 Picce(s)           Beam spacing         20 mm           Weasurement data         Winimum object diameter           Supply voltage Ug         18 30 V, DC           Residual ripple         0 15 %, From Ug           Open-circuit current         0.0 mA           Input resistance         6.000 Ω           Number of inputs/outputs selectable         2 Piece(s)           Type         Input/soutputs selectable           Voltage type, outputs         DC           Supply voltage, up up to 1         Condon           Input soutputs selectable         2 Piece(s)           Type         Input/soutputs selectable           Voltage type, outputs         DC<	Basic data	
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 Parallel-beam scanning Parallel-beam scanning Operating range O.3 7 m Operating range Imit 0.2 9 m Measurement field length 1,750 mm Number of beams 88 Piece(s) Beam spacing 20 mm Measurement data Minimum object diameter 30 mm Electrical data Protective circuit Polarity reversal protection Short circuit protected Transient protection Short circuit protected Transient protection Short circuit protected Transient protection Number of beams 88 Piece(s) Beam spacing 0.3 7 m Measurement data Minimum object diameter 30 mm Measurement data Minimum object diameter 0 15 %, From U <sub>8</sub> Open-circuit current 0 350 mA, The specified values refer to the entire package consisting of trans- mitter 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/Output 3 Piece(s) Switching voltage, inputs Input 3 Piece(s) Piece(s) Piece(s)	Series	720
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         Guaranteed operating range           Operating range         0.3 7 m           Operating range         0.3 7 m           Operating range limit         0.2 9 m           Measurement field length         1,750 mm           Number of beams         88 Piece(s)           Beam spacing         20 mm           Measurement data         Winimum object diameter           30 mm         Electrical data           Protective circuit         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         0 350 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)	Operating principle	Throughbeam principle
Application         Object measurement           Special version         Crossed-beam scanning Diagonal-beam scanning           Special version         Crossed-beam scanning           Special data         Disgonal-beam scanning           Operating range         0.3 7 m           Operating range limit         Typical operating range           Operating range limit         0.2 9 m           Measurement field length         1,750 mm           Number of beams         88 Piece(s)           Beam spacing         20 mm           Measurement data         Winimum object diameter           Minimum object diameter         30 mm           Electrical data         Polarity reversal protection           Short circuit protected         Transient protection           Short circuit protected         Transient protection           Supply voltage Ua         18 30 V, DC           Residual ripple         0 15 %, From Ua           Open-circuit current         0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver.           Input solutputs selectable         Dec           Output current, max.         100 mA           Input solutputs selectable         Dec           Switching voltage, outputs         Dc	Device type	Receiver
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Special version       Crossed-beam scanning         Diagonal-beam scanning         Parallel-beam scanning         Operating range       0.37 m         Operating range limit       0.29 m         Measurement field length       1.750 mm         Number of beams       88 Piece(s)         Beam spacing       20 mm         Measurement data       Winimum object diameter         Winimum object diameter       30 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Performance data       Supply voltage U <sub>B</sub> Open-circuit current       0	Application	Object measurement
Diagonal-beam scanning           Parallel-beam scanning           Poperating range         Guaranteed operating range           Operating range limit         Typical operating range           Operating range limit         0.2 9 m           Measurement field length         1,750 mm           Number of beams         88 Piece(s)           Beam spacing         20 mm           Measurement data         30 mm           Minimum object diameter         30 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         0 350 mA. The specified values refer to the entire package consisting of transmitter and receiver.           Inputs/outputs selectable         2 Piece(s)           Type         Inputs/output selectable           Voltage type, outputs         DC           Switching voltage, outputs         DC           Switching voltage, inputs         DC           Switching voltage, inputs         DC           Switching voltage, inputs         DC	Special version	
Parallel-beam scanning           Optical data           Operating range         Guaranteed operating range           Operating range limit         Typical operating range           Operating range limit         0.2 9 m           Measurement field length         1.750 mm           Number of beams         88 Piece(s)           Beam spacing         20 mm           Measurement data         Winimum object diameter         30 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         0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver.           Input solutputs selectable         Output current, max.         100 mA           Input resistance         6,000 Ω           Number of inputs/outputs         Typ. U <sub>b</sub> / 0 V           Voltage type, outputs         DC           Switching voltage, inputs         DC           Switching voltage, inputs         DL           Input/output 1         Activation/disable delay         1 ms           Readiness delay         1,500 ms         Cycle time <td>Special version</td> <td>Crossed-beam scanning</td>	Special version	Crossed-beam scanning
Optical data       Guaranteed operating range         Operating range       0.3 7 m         Operating range limit       Typical operating range         Operating range limit       0.2 9 m         Weasurement field length       1,750 mm         Number of beams       88 Piece(s)         Beam spacing       20 mm         Veasurement data       Winimum object diameter         Winimum object diameter       30 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Supply voltage Ug       18 30 V, DC         Residual ripple       0 15 %, From Ug         Open-circuit current       0 350 mA, The specified values refer to the entire package consisting of transmitter and receiver.         Input solut current, max.       100 mA         Input current, max.       100 mA         Input current, max.       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6V         low: ≤4V       Input         Mativation/disable delay       1 ms         Timing       304 ms         Readiness delay       1,500 ms		Diagonal-beam scanning
Deprating range       Guaranteed operating range         Operating range limit       Typical operating range         Operating range limit       0.2 9 m         Measurement field length       1,750 mm         Number of beams       88 Piece(s)         Beam spacing       20 mm         Measurement data       30 mm         Minimum object diameter       30 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       0		Parallel-beam scanning
Operating range       0.3 7 m         Operating range limit       Typical operating range         Operating range limit       0.2 9 m         Weasurement field length       1,750 mm         Number of beams       88 Piece(s)         Beam spacing       20 mm         Measurement data       Winimum object diameter         30 mm       Store circuit         Polarity reversal protection       Short circuit protected         Transient protection       Short circuit protected         Transient protection       Short circuit protected         Supply voltage UB       18 30 V, DC         Residual ripple       0 15 %, From UB         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.         Output current, max.       100 mA         Input resistance       6,000 Ω         Number of inputs/outputs selectable       DC         Switching voltage, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       Nigh: ≥6V         low: ≤4V       Input/output 1 <th>Optical data</th> <th></th>	Optical data	
Operating range limit       Typical operating range         Operating range limit       0.2 9 m         Measurement field length       1,750 mm         Number of beams       88 Piece(s)         Beam spacing       20 mm         Measurement data       Winimum object diameter       30 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Short circuit protected       Transient protection         Performance data       Supply voltage UB       18 30 V, DC         Residual ripple       0 15 %, From UB       Open-circuit current         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         Voltage type, outputs       DC       Switching voltage, outputs       DC         Switching voltage, inputs       DC       Switching voltage, inputs       DC         Switching voltage, inputs       DC       Switching voltage, inputs       Input/output         Input/output 1       Activation/disable delay       1 ms       Iming         Readiness delay	Operating range	Guaranteed operating range
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Weasurement field length       1,750 mm         Wumber of beams       88 Piece(s)         Beam spacing       20 mm         Weasurement data       30 mm         Veasurement data       30 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient protection         Protective circuit       Polarity reversal protection         Short circuit protected       Transient protected         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         Voltage type, outputs       DC       Switching voltage, upputs         DC       Switching voltage, inputs       DC         Switching voltage, inputs       DC       Switching voltage, inputs         Input/output 1       Activation/disable delay       1 ms         Timing       3.04 ms       Response time per beam         Response time per beam       3.04 ms       Response time per beam	Operating range limit	Typical operating range
Number of beams       88 Piece(s)         Beam spacing       20 mm         Measurement data       30 mm         Electrical data       30 mm         Protective circuit       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       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 35 0mA, 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         Timing       3.04 ms         Response time per beam       30 µs	Operating range limit	0.2 9 m
Beam spacing       20 mm         Measurement data         Winimum object diameter       30 mm         Electrical data       Polarity reversal protection         Short circuit protected       Transient 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       0 350 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         Inputs/outputs selectable       2 Piece(s)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       Joo ms         Cycle time       3.04 ms         Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 µs	Measurement field length	1,750 mm
Measurement data         Winimum object diameter       30 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       0 350 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)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       Jom s         Cycle time       3.04 ms         Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 µs	Number of beams	88 Piece(s)
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Fretective 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       0 350 mA, The specified values refer         to multiple       0 350 mA, The specified values refer         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         Input/output 1       Activation/disable delay       1 ms         Activation/disable delay       1 ms         Timing       3.0 μs         Response time per beam       30 μs		30 mm
Protective circuit       Polarity reversal protection         Short circuit protected       Transient protection         Performance data       Transient protection         Supply voltage U <sub>B</sub> 18 30 V, DC         Residual ripple       0 15 %, From U <sub>B</sub> Open-circuit current       0 350 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)         Type       Inputs/outputs selectable         Voltage type, outputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Switching voltage, inputs       high: ≥6V         low: ≤4V       low: ≤4V         Input/output 1       Activation/disable delay         Activation/disable delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 µs	-	30 mm
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       0utput 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       DC         Switching voltage, inputs       DC         Switching voltage, inputs       DC         Input/output 1       Input/output 1         Activation/disable delay       1 ms         Timing       3.04 ms         Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 µs	Electrical data	
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       0 mA         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       DC         Switching voltage, inputs       DC         Input/output 1       Activation/disable delay         Activation/disable delay       1 ms         Timing       3.04 ms         Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 μs	Protective circuit	Polarity reversal protection
Performance dataSupply voltage Ug18 30 V, DCResidual ripple0 15 %, From UgOpen-circuit current0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.Inputs/outputs selectableOutput current, max.Output current, max.100 mAInput resistance6,000 $\Omega$ Number of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsTyp. Ug / 0 VVoltage type, inputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCInput/output 1 Activation/disable delay1 msTiming1,500 msReadiness delay1,500 msCycle time3.04 msResponse time per beam30 µs		Short circuit protected
Supply voltage UB18 30 V, DCResidual ripple0 15 %, From UBOpen-circuit current0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.Inputs/outputs selectable100 mAOutput current, max.100 mAInput resistance6,000 $\Omega$ Number of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCInput/output 1 Activation/disable delay1 msTiming1,500 msReadiness delay1,500 msCycle time3.04 msResponse time per beam30 µs		Transient protection
Supply voltage UB18 30 V, DCResidual ripple0 15 %, From UBOpen-circuit current0 350 mA, The specified values refer to the entire package consisting of trans- mitter and receiver.Inputs/outputs selectable100 mAOutput current, max.100 mAInput resistance6,000 $\Omega$ Number of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsDCInput/output 1 Activation/disable delay1 msTiming1,500 msReadiness delay1,500 msCycle time3.04 msResponse time per beam30 µs	Performance data	
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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)         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         Timing       3.04 ms         Response time per beam       30 μs		0 15 %, From U <sub>P</sub>
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Output current, max.100 mAInput resistance6,000 ΩNumber of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsDCSwitching voltage, inputsDCSwitching voltage, inputsInput/outputInput/output 1Activation/disable delayActivation/disable delay1 msTiming3.04 msReadiness delay3.0 μmsCycle time3.0 μms		
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Number of inputs/outputs selectable2 Piece(s)TypeInputs/outputs selectableVoltage type, outputsDCSwitching voltage, outputsTyp. $U_B / 0 V$ Voltage type, inputsDCSwitching voltage, inputshigh: $\geq 6V$ Input/output 1Activation/disable delayActivation/disable delay1 msTiming3.04 msReadiness delay1.500 msCycle time3.04 msInterface		
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Switching voltage, outputs       Typ. $U_B / 0 V$ Voltage type, inputs       DC         Switching voltage, inputs       high: $\geq 6V$ Input/output 1       Input/output 1         Activation/disable delay       1 ms         Timing       3.04 ms         Readiness time per beam       30 $\mu$ s         Interface       100 ms		
Voltage type, inputs     DC       Switching voltage, inputs     high: ≥6∨       low: ≤4∨       Input/output 1       Activation/disable delay     1 ms       Timing       Readiness delay     1,500 ms       Cycle time     3.04 ms       Response time per beam     30 μs		
Switching voltage, inputs       high: ≥6∨         lnput/output 1       Input/output 1         Activation/disable delay       1 ms         Timing       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 μs		
Input/output 1       Activation/disable delay       1 ms         Timing       Readiness delay     1,500 ms       Cycle time     3.04 ms       Response time per beam     30 μs		
Input/output 1         Activation/disable delay       1 ms         Timing       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 μs         Interface       100 ms	Switching voltage, inputs	0
Activation/disable delay       1 ms         Timing       1,500 ms         Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 μs         Interface       200 ms		IOW: 54V
Activation/disable delay       1 ms         Timing       1,500 ms         Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 μs         Interface       200 ms	Input/output 1	
Timing Readiness delay 1,500 ms Cycle time 3.04 ms Response time per beam 30 µs		1 ms
Readiness delay       1,500 ms         Cycle time       3.04 ms         Response time per beam       30 μs         Interface       2500 ms	-	
Cycle time     3.04 ms       Response time per beam     30 μs	-	
Response time per beam 30 µs	Readiness delay	
Interface		
	Response time per beam	30 µs
Type PROFINET	Interface	
	Туре	PROFINET

Profinet Function	Process
Conformance class	B
Protocol	PROFINET RT
Switch functionality	
Transmission speed	Integrated 10 Mbit/s
Industriussion speed	100 Mbit/s
Service interface	
	IO-Link
IO-Link Function	Configuration via software
Function	Service
Connection	
Number of connections	3 Piece(s)
Plug 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
Connection 2	
Function	BUS IN
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Connection 3	
Function	BUS OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Mechanical data	
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 1,783 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic
Net weight	1,950 g
Housing color	Silver
Type of fastening	Groove mounting

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### **Technical data**

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#### **Operation and display**

Type of display	LED
	OLED display
Number of LEDs	4 Piece(s)
Type of configuration	Software
	Teach-in
Operational controls	Membrane keyboard
Environmental data	
Ambient temperature, operation	-30 60 °C

Ambient temperature, operation Ambient temperature, storage

#### Certifications

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

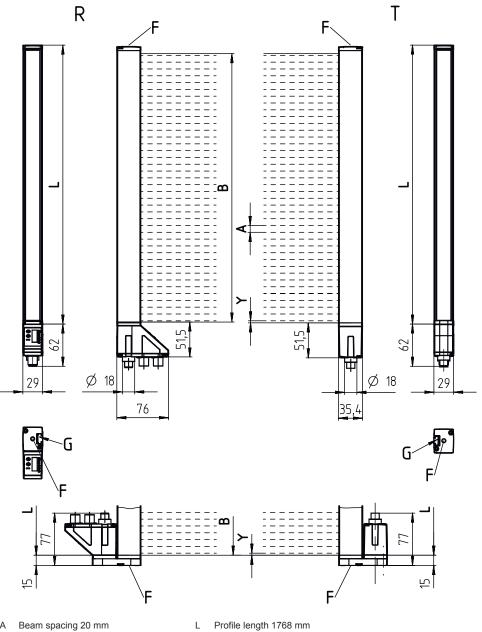
-40 ... 70 °C

#### 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
eCl@ss 11.0	27270910
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549

#### **Dimensioned drawings**

All dimensions in millimeters

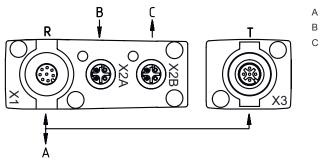


- Beam spacing 20 mm А
- В Measurement field length 1750 mm
- F M6 thread G
  - Fastening groove
- Т
  - Transmitter
- R Receiver
- 5 mm Υ



#### **Dimensioned drawings**

## Leuze



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

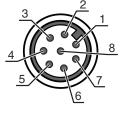
## Electrical connection

Connection 1	X1
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

V4

#### Pin Pin assignment

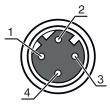
1	V+	
2	I/O 1	
3	GND	
4	IO-Link	
5	I/O 2	
6	RS 485 Tx+	
7	RS 485 Tx+	
8	FE/SHIELD	



Connection 2	X2A	
Function	BUS IN	
Type of connection	Connector	
Thread size	M12	
Туре	Female	
Material	Metal	
No. of pins	4 -pin	
Encoding	D-coded	

#### Pin Pin assignment

1	TD0+
2	RD0+
3	TD0-
4	RD0-



### **Electrical connection**

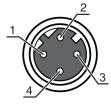
## Leuze

#### Connection 3

Function	BUS OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

X2B

Pin	Pin assignment
1	TD0+
2	RD0+
3	TD0-
4	RD0-



## 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
3	Green, continuous light (at the X2A / X2B connector)	Link
4	Yellow, continuous light (at the X2A / X2B connector)	Activity

#### Suitable transmitters

 Part no.	Designation	Article	Description
50119515	CML720i-T20- 1750.R-M12	Light curtain transmitter	Operating range: 0.3 6 m Connection: Connector, M12, Rear side, 5 -pin

#### Part number code

Part designation: CML7XXi-YZZ-AAAA.BCCCDDD-EEEFFF

Operating principle Measuring light curtain					
Series           720i: 720i series           730i: 730i series					
Device type T: transmitter R: receiver					
Beam spacing 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm					
Measurement field length [mm], dependent on beam spacing					
Equipment A: connector outlet, axial R: rear connector outlet					

#### Part number code



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				
Να	ote				
6	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:
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✤ 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
W	50135074	KS ET-M12-4A-P7- 050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

#### Accessories

## Leuze

### Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50135081	KSS ET-M12-4A- RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 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

### 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
RR.	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

#### Accessories

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#### Services

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