

Technical data sheet Light curtain receiver Part no.: 50131709 CML730i-R05-2080.R/PN-M12



The Sensor People In der Braike 1, 73277 Owen

Leuze electronic GmbH + Co. KG info@leuze.com • www.leuze.com

Phone: +49 7021 573-0 • Fax: +49 7021 573-199

Technical data

Leuze

Series	730	
Operating principle	Throughbeam principle	
Device type	Receiver	
Contains	Accessories for the use of the BT-2R1	
Application	Detection of transparent objects	
	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 4.5 m	
Operating range, transparent media	0.1 1.75 m	
Operating range limit	Typical operating range	
Operating range limit	0.1 6 m	
Measurement field length	2,080 mm	
Number of beams	416 Piece(s)	
Beam spacing	5 mm	
Measurement data		
Minimum object diameter	10 mm	
Electrical data		
Protective circuit	Polarity reversal protection	
	Short circuit protected	
	Short circuit protected	
Protective circuit	Short circuit protected	
Protective circuit Performance data	Short circuit protected Transient protection	
Protective circuit Performance data Supply voltage U _B	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refe	
Protective circuit Performance data Supply voltage U _B Residual ripple Open-circuit current	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of trar	
Protective circuit Performance data Supply voltage U _B Residual ripple Open-circuit current Inputs/outputs selectable	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refe to the entire package consisting of tran mitter and receiver.	
Protective circuit Performance data Supply voltage U _B 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 refet to the entire package consisting of transmitter mitter and receiver.	
Protective circuit Performance data Supply voltage U _B 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 U _B 0 435 mA, The specified values refet to the entire package consisting of tran mitter and receiver. 100 mA 6,000 Ω	
Protective circuit Performance data Supply voltage U _B 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 U _B 0 435 mA, The specified values refe to the entire package consisting of tran mitter and receiver. 100 mA 6,000 Ω 2 Piece(s)	
Protective circuit Performance data Supply voltage U _B Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of tran mitter and receiver. 100 mA 6,000 Ω	
Protective circuit Performance data Supply voltage U _B 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 U _B 0 435 mA, The specified values refet to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC	
Protective circuit Performance data Supply voltage U _B Residual ripple Open-circuit current Inputs/outputs selectable Output current, max. Input resistance Number of inputs/outputs selectable Type Voltage type, outputs	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of transitier mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable	
Protective circuit Performance data Supply voltage U _B 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 refet to the entire package consisting of tran mitter and receiver. 100 mA $6,000 \Omega$ 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V	
Protective circuit Performance data Supply voltage U _B 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	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of tran mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC	
Protective circuit Performance data Supply voltage U _B 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	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V	
Protective circuit Performance data Supply voltage U _B 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 Input/output 1	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refetor to the entire package consisting of transmitter 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤4V	
Protective circuit Performance data Supply voltage U _B 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	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V	
Protective circuit Performance data Supply voltage U _B 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 Input/output 1	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refetor to the entire package consisting of transmitter 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤4V	
Protective circuit Performance data Supply voltage U _B 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 Input/output 1 Activation/disable delay	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤4V	
Protective circuit Performance data Supply voltage U _B 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 Timing	Short circuit protected Transient protection 18 30 V, DC 0 15 %, From U _B 0 435 mA, The specified values refet to the entire package consisting of trans- mitter and receiver. 100 mA 6,000 Ω 2 Piece(s) Inputs/outputs selectable DC Typ. U _B / 0 V DC high: ≥6V Iow: ≤4V 1 ms	

Interface

Туре

PROFINET

Profinet Function Process Conformance class В Protocol PROFINET RT Switch functionality Integrated Transmission speed 10 Mbit/s 100 Mbit/s Service interface IO-Link Туре IO-Link Function Configuration via software 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 Male Type Material Metal No. of pins 8 -pin Encoding A-coded **Connection 2** BUS IN Function Type of connection Connector Thread size M12 Туре Female Material Metal No. of pins 4 -pin Encoding D-coded **Connection 3** BUS OUT Function 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 2,103 mm Housing material Metal Metal housing Aluminum Lens cover material Plastic Net weight 2,250 g Housing color Silver Groove mounting Type of fastening Via optional mounting device

Technical data

Leuze

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

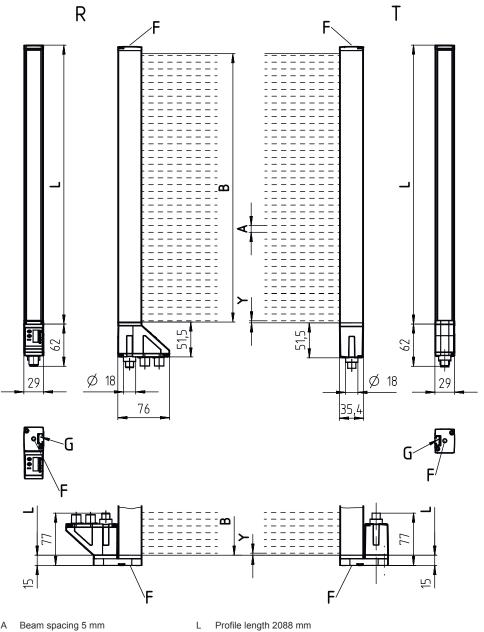
-40 ... 70 °C

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

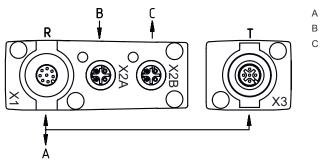


- Beam spacing 5 mm А
- В Measurement field length 2080 mm
- F M6 thread G Fastening groove
- Т R Receiver
 - 2.5 mm Υ

Transmitter

Leuze

Dimensioned drawings



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

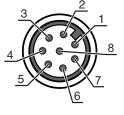
Electrical connection

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

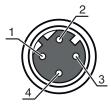
1	V+		
2	I/O 1		
3	GND		
4	IO-Link		
5	I/O 2		
6	RS 485 Tx+		
7	RS 485 Tx+		
8	FE/SHIELD		



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

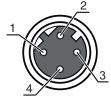
Connection 3

Leuze

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	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
50118937	CML730i-T05- 2080.R-M12	Light curtain transmitter	Operating range: 0.1 4 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!
 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
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
Cies .	50121098	SET MD12-US2-IL1.1 + Zub.	Diagnostics set	Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20

Accessories

Leuze

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. 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.