

## **Technical data sheet Light curtain receiver** Part no.: 50131831 CML730i-R40-2210.R/PN-M12



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## **Technical data**

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#### **Basic data** 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 0.3 ... 9.5 m **Operating range** Guaranteed operating range Operating range, transparent media 0.3 ... 3.5 m **Operating range limit** 0.2 ... 12 m Operating range limit Typical operating range Measurement field length 2,210 mm Number of beams 55 Piece(s) Beam spacing 40 mm **Measurement data** Minimum object diameter 50 mm **Electrical data** Protective circuit Polarity reversal protection Short circuit protected Transient protection Performance data Supply voltage U<sub>B</sub> 18 ... 30 V, DC 0 ... 15 %, From U<sub>B</sub> **Residual ripple** 0 ... 435 mA, The specified values refer **Open-circuit current** to the entire package consisting of transmitter and receiver. Inputs/outputs selectable 100 mA Output current, max. Input resistance 6,000 Ω Number of inputs/outputs selectable 2 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: $\leq 4 \text{ V}$ Input/output 1 Activation/disable delay 1 ms Time behavior Readiness delay 1,500 ms Cycle time 1 ms Response time per beam 10 µs

#### Interface

Туре

PROFINET

Function	
1 unction	Process
Conformance class	В
Protocol	PROFINET RT
Switch functionality	Integrated
Transmission speed	10 Mbit/s
	100 Mbit/s
Service interface	
Туре	IO-Link
IO-Link	
Function	Configuration via software
	Service
Connection	
Number of connections	3 Piece(s)
Plug outlet	Rear side
<b>-</b>	
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
Type Material	Female Metal
No. of pins	4 -pin
Encoding	D-coded
Mechanical data	D-codeu
	Cubic
Design	Cubic
Dimension (W x H x L)	29 mm x 35.4 mm x 2,263 mm Metal
Housing material	Aluminum
Metal housing Lens cover material	Plastic
Net weight	2,350 g
Housing color	2,350 g Silver
Type of fastening	Groove mounting
	S. Soto mounting
Type of factoring	Via optional mounting device

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#### **Operation and display**

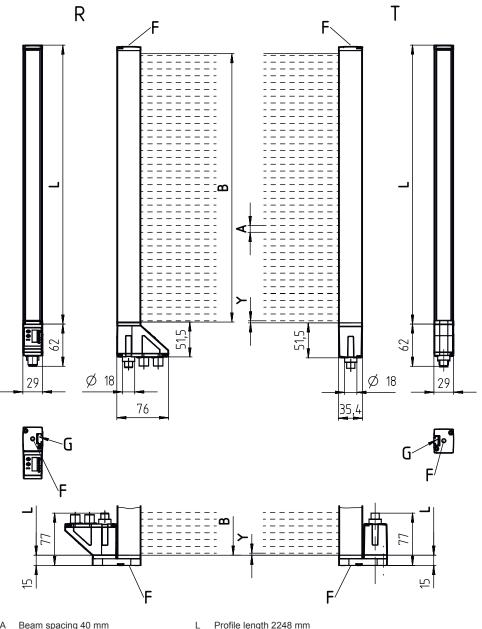
operation and mephaj			
Type of display	LED		
	OLED display		
Number of LEDs	4 Piece(s)		
Type of configuration	Software		
	Teach-in		
Operational controls	Membrane keyboard		
Environmental data			
Ambient temperature, operation	-30 60 °C		
Ambient temperature, operation Ambient temperature, storage	-30 60 °C -40 70 °C		
Ambient temperature, storage			
Ambient temperature, storage			
Ambient temperature, storage Certifications	-40 70 °C		
Ambient temperature, storage Certifications Degree of protection	-40 70 °C IP 65		
Ambient temperature, storage Certifications Degree of protection Protection class	-40 70 °C IP 65 III		

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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
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
ETIM 9.0	EC002549

#### **Dimensioned drawings**

All dimensions in millimeters



- Beam spacing 40 mm А
- В Measurement field length 2210 mm
- F M6 thread G
  - Fastening groove
- Profile length 2248 mm
- Transmitter
- R Receiver

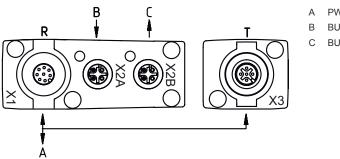
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5 mm Υ

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#### **Dimensioned drawings**

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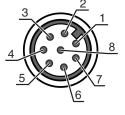
- A PWR / SW IN / OUT B BUS IN
- C BUS OUT

## **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

#### Pin Pin assignment

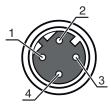
1	V+
2	I/O 1
3	GND
4	IO-Link
5	I/O 2
6	RS 485 Tx+
7	RS 485 Tx+
8	FE/SHIELD



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

#### Pin Pin assignment

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



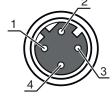
### **Electrical connection**

X2B

#### Connection 3

BUS OUT
Connector
M12
Female
Metal
4 -pin
D-coded

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



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## **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

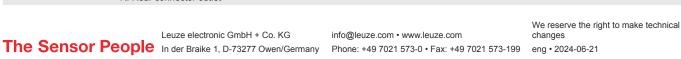
#### Suitable transmitters

 Part no.	Designation	Article	Description
50118990	CML730i-T40- 2210.R-M12	Light curtain transmitter	Operating range: 0.3 9.5 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	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: Axial connector outlet R: Rear connector outlet



#### Part number code



CCC	Interface L: IO-Link //N: 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
1	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 Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC
50135074	KS ET-M12-4A-P7- 050	Connection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR

#### Accessories

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### 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.	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

#### Accessories

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#### Services

 Part no.	Designation	Article	Description
S981001	CS10-S-110	Start-up support	Details: Performed at location of customer's choosing, duration: max. 10 hours. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses.
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.