

## Technical data sheet

### Light curtain receiver

Part no.: 50128959  
CSL710-R20-1910.A/L-M12

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For illustration purposes only



## Technical data

### Basic data

Series	710
Operating principle	Throughbeam principle
Device type	Receiver
Contains	2x BT-NC sliding block
Application	Precise object detection

### Special version

Special version	Crossed-beam scanning
	Diagonal-beam scanning
	Parallel-beam scanning

### Characteristic parameters

#### Optical data

Measurement field length	1,910 mm
Number of beams	96 Piece(s)
Beam spacing	20 mm

#### Measurement data

Minimum object diameter	30 mm
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#### Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected
	Transient protection

#### Performance data

Supply voltage $U_B$	18 ... 30 V, DC
Residual ripple	0 ... 15 %, From $U_B$
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 $\Omega$
Number of inputs/outputs selectable	4 Piece(s)
Type	Inputs/outputs selectable
Voltage type, outputs	DC
Switching voltage, outputs	Typ. $U_B / 0$ V
Voltage type, inputs	DC
Switching voltage, inputs	high: $\geq 6$ V
	low: $\leq 4$ V

#### Input/output 1

Activation/disable delay	0 ... 1 ms
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### Time behavior

Readiness delay	400 ms
Cycle time	3.28 ms
Response time per beam	30 $\mu$ s

### Interface

Type	IO-Link
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### IO-Link

COM mode	COM2
	COM3
Min. cycle time	COM2 = 2.3 ms
Specification	V1.0.1
	V1.1
Process data IN	2 bytes
Process data OUT	2 bytes

### Service interface

Type	IO-Link
IO-Link	
Function	Configuration via software
	Service

### Connection

Number of connections	2 Piece(s)
Plug outlet	Axial

#### Connection 1

Function	Configuration interface
	Signal IN
	Signal OUT
	Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded

#### Connection 2

Function	Connection to transmitter
Type of connection	Connector
Thread size	M12
Type	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

### Mechanical data

Design	Cubic
Dimension (W x H x L)	29 mm x 54.8 mm x 1,993 mm
Housing material	Metal
Metal housing	Aluminum
Lens cover material	Plastic / PMMA
Net weight	2,000 g
Housing color	Red
Type of fastening	Groove mounting
	Via optional mounting device

### Operation and display

Type of display	LED
	OLED display
Number of LEDs	2 Piece(s)
Type of configuration	Software
	Teach-in
Operational controls	Membrane keyboard

## Technical data

### Environmental data

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

### 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
ECLASS 16.0	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
UNSPSC 26.08	39121528

# Dimensioned drawings

All dimensions in millimeters



- |   |                                  |   |                        |
|---|----------------------------------|---|------------------------|
| A | Beam spacing 20 mm               | L | Profile length 1928 mm |
| B | Measurement field length 1910 mm | T | Transmitter            |
| F | M6 thread                        | R | Receiver               |
| G | Fastening groove                 | Y |                        |



# Electrical connection

## Connection 1

<b>Function</b>	Configuration interface
	Signal IN
	Signal OUT
	Voltage supply
<b>Type of connection</b>	Connector
<b>Thread size</b>	M12
<b>Type</b>	Male
<b>Material</b>	Metal
<b>No. of pins</b>	8 -pin
<b>Encoding</b>	A-coded

### Pin Pin assignment

<b>1</b>	V+
<b>2</b>	IO1
<b>3</b>	GND
<b>4</b>	IO-Link
<b>5</b>	IO2
<b>6</b>	IO3
<b>7</b>	IO4
<b>8</b>	GND



## Connection 2

<b>Function</b>	Connection to transmitter
<b>Type of connection</b>	Connector
<b>Thread size</b>	M12
<b>Type</b>	Female
<b>Material</b>	Metal
<b>No. of pins</b>	5 -pin
<b>Encoding</b>	A-coded

### Pin Pin assignment

<b>1</b>	FE/SHIELD
<b>2</b>	V+
<b>3</b>	GND
<b>4</b>	RS 485 Tx+
<b>5</b>	RS 485 Tx-



# 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	Operating range Operating range limit	Description
	50129042	CSL710-T20-1910.A-M12	0.3 ... 7 m 0.2 ... 9 m	Application: Precise object detection Special version: Parallel-beam scanning, Crossed-beam scanning, Diagonal-beam scanning Operating range: 0.3 ... 7 m Connection: Connector, M12, 5 -pin

## Part number code

Part designation: **CSL710-XYZ-AAAA.A/B-CCC**

<b>CSL710</b>	<b>Operating principle</b> CSL: switching light curtain of the 710 series
<b>X</b>	<b>Function classes</b> T: transmitter R: receiver
<b>YY</b>	<b>Beam spacing</b> 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm
<b>ZZZZ</b>	<b>Measurement field length [mm], dependent on beam spacing</b> Value, see technical data
<b>A</b>	<b>Equipment</b> A: Axial connector outlet
<b>B</b>	<b>Interface</b> L: IO-Link
<b>CCC</b>	<b>Electrical connection</b> M12: M12 connector

Note	
	A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> .

## Notes

⚠ Observe intended use!	
	<ul style="list-style-type: none"> <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:	
	<ul style="list-style-type: none"> <li>For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> <li>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)</li> </ul>

## Accessories

### Connection technology - Connection unit

	Part no.	Designation	Article	Description
	50144900	MD 798i-11-82/L5-2222	IO-Link master	Current consumption, max.: 11,000 mA Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Degree of protection: IP 67, IP 65, IP 69K

### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50135128	KD S-M12-8A-P1-050	Connection cable	Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

### Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50129781	KDS DN-M12-5A-M12-5A-P3-050	Interconnection cable	Application: Oil and lubricant resistant Suitable for interface: DeviceNet, CANopen Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	429393	BT-2HF	Mounting bracket set	Contains: 2x BT-HF swivel mount, 1 cylinder for mounting on the light curtain Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic

#### Note



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