

# Technical data sheet

## Light curtain receiver

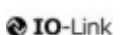
Part no.: 50128922  
CSL710-R05-2800.A/L-M12

### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable transmitters
- Part number code
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For illustration purposes only



Technical data

Basic data

|                     |                          |
|---------------------|--------------------------|
| Series              | 710                      |
| Operating principle | Throughbeam principle    |
| Device type         | Receiver                 |
| Application         | Precise object detection |

Special version

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

Characteristic parameters

Optical data

|                          |                            |
|--------------------------|----------------------------|
| 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 | 2,800 mm                   |
| Number of beams          | 560 Piece(s)               |
| Beam spacing             | 5 mm                       |

Measurement data

|                         |       |
|-------------------------|-------|
| Minimum object diameter | 10 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                                                                                        |
| Residual ripple               | 0 ... 15 %, From U <sub>B</sub>                                                                        |
| Open-circuit current          | 0 ... 435 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 | 4 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<br>low: ≤ 4 V   |

Input/output 1

|                          |            |
|--------------------------|------------|
| Activation/disable delay | 0 ... 1 ms |
|--------------------------|------------|

Time behavior

|                        |         |
|------------------------|---------|
| Readiness delay        | 400 ms  |
| Cycle time             | 17.2 ms |
| Response time per beam | 30 μs   |

Interface

|      |         |
|------|---------|
| Type | IO-Link |
|------|---------|

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<br>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 2,873 mm   |
| Housing material      | Metal                        |
| Metal housing         | Aluminum                     |
| Lens cover material   | Plastic / PMMA               |
| Net weight            | 2,800 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 |

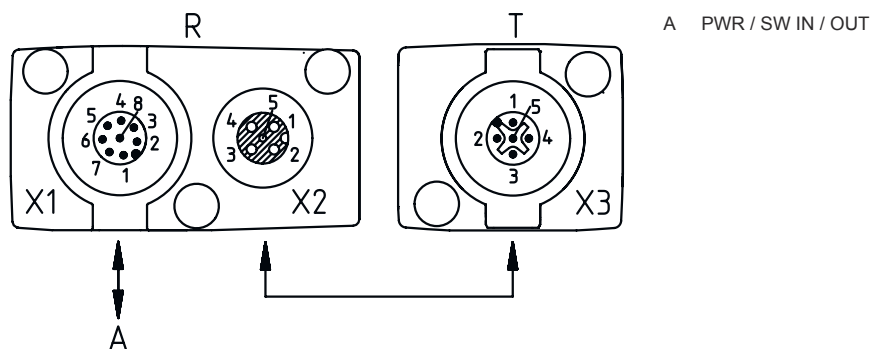
Certifications

|                      |               |
|----------------------|---------------|
| Degree of protection | IP 65         |
| Protection class     | III           |
| Certifications       | 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 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |

All dimensions in millimeters



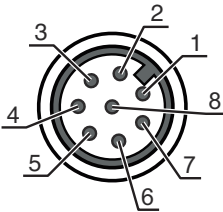
Electrical connection

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                 |

PinPin assignment

|   |         |
|---|---------|
| 1 | V+      |
| 2 | IO1     |
| 3 | GND     |
| 4 | IO-Link |
| 5 | IO2     |
| 6 | IO3     |
| 7 | IO4     |
| 8 | GND     |

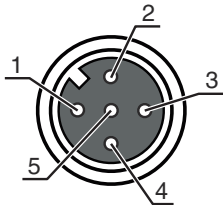


Connection 2

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

PinPin assignment

|   |            |
|---|------------|
| 1 | FE/SHIELD  |
| 2 | V+         |
| 3 | GND        |
| 4 | RS 485 Tx+ |
| 5 | 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           | Article                   | Description                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------|----------|-----------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50129010 | CSL710-T05-2800.A-M12 | Light curtain transmitter | Application: Precise object detection<br>Special version: Parallel-beam scanning, Crossed-beam scanning, Diagonal-beam scanning<br>Operating range: 0.1 ... 3.5 m<br>Connection: Connector, M12, 5 -pin |

Part number code

Part designation: **CSL710-XY-YYY.A/B-CCC**

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

Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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 unit**

|                                                                                  | Part no. | Designation           | Article        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------|----------|-----------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50144900 | MD 798i-11-82/L5-2222 | IO-Link master | Type: IO-Link master<br>Current consumption, max.: 11,000 mA<br>Switching outputs for each sensor connection: 1 Piece(s)<br>Switching output: Transistor, PNP<br>Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET<br>Connections: 12 Piece(s)<br>Sensor connections: 8 Piece(s)<br>Connections for voltage supply: 2 Piece(s)<br>Interface connections: 2 Piece(s)<br>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 | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |

**Connection technology - Interconnection cables**

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

**Note**

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