

## 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
- Notes
- Accessories



Figure can vary



## 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 |

### Optical data

|                          |                            |
|--------------------------|----------------------------|
| Operating range          | Guaranteed operating range |
| Operating range          | 0.1 ... 3.5 m              |
| Operating range limit    | Typical operating range    |
| Operating range limit    | 0.1 ... 4.5 m              |
| 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 $U_B$ | 18 ... 30 V, DC  |
| Residual ripple      | 0 ... 15 %, From $U_B$   |
| 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 $\Omega$                      |
| Number of inputs/outputs selectable | 4 Piece(s)                          |
| Voltage type, outputs               | DC                                  |
| Switching voltage, outputs          | Typ. $U_B / 0$ V                    |
| Voltage type, inputs                | DC                                  |
| Switching voltage, inputs           | high: $\geq 6$ V<br>low: $\leq 4$ V |

### Input/output 1

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

### Timing

|                        |            |
|------------------------|------------|
| Readiness delay        | 400 ms     |
| Cycle time             | 17.2 ms    |
| Response time per beam | 30 $\mu$ s |

### Interface

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

### IO-Link

|                 |               |
|-----------------|---------------|
| COM mode        | COM2          |
|                 | COM3          |
| Specification   | V1.0.1        |
|                 | V1.1          |
| Min. cycle time | COM2 = 2.3 ms |

### 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 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 CSA US      |
| Standards applied    | IEC 60947-5-2 |

### 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



- |   |                                  |   |                        |
|---|----------------------------------|---|------------------------|
| A | Beam spacing 5 mm                | L | Profile length 2808 mm |
| B | Measurement field length 2800 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           | 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-XYZ-ZZZZ.A/B-CCC**

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

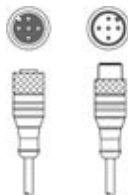
|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>⌘ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> <li>⌘ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)</li> </ul> |
|--|---|

## Accessories


### Connection technology - Connection 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>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: IO-Link, 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 |

### Mounting technology - Swivel mounts

|  | Part no. | Designation | Article              | Description   |
|--|----------|-------------|----------------------|---|
|  | 429046   | BT-2R1      | Mounting bracket set | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>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.