



Figure can vary

**Part no.: 50129036**  
**CSL710-T20-950.A-M12**  
**Light curtain transmitter**



## Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable receivers
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## Technical data

| <b>Basic data</b>        |  |
|--------------------------|--|
| Series                   | 710  |
| Operating principle      | Throughbeam principle  |
| Device type              | Transmitter  |
| Contains                 | 2x BT-NC sliding block   |
| Application              | Precise object detection   |
| <b>Optical data</b>      |  |
| Operating range          | Guaranteed operating range   |
| Operating range          | 0.3 ... 7 m  |
| Operating range limit    | Typical operating range  |
| Operating range limit    | 0.2 ... 9 m  |
| Measurement field length | 950 mm   |
| Number of beams          | 48 Piece(s)  |
| Beam spacing             | 20 mm  |
| Light source             | LED, Infrared  |
| LED light wavelength     | 940 nm   |
| <b>Measurement data</b>  |  |
| Minimum object diameter  | 30 mm  |
| <b>Electrical data</b>   |  |
| Protective circuit       | Polarity reversal protection<br>Short circuit protected<br>Transient protection                        |
| <b>Performance data</b>  |  |
| Supply voltage $U_B$     | 18 ... 30 V, DC  |
| Residual ripple          | 0 ... 15 %, From $U_{B<sub>B</sub>}$   |
| Open-circuit current     | 0 ... 215 mA, The specified values refer to the entire package consisting of transmitter and receiver. |
| <b>Timing</b>            |  |
| Readiness delay          | 400 ms   |
| Cycle time               | 1.84 ms  |
| <b>Connection</b>        |  |
| Number of connections    | 1 Piece(s)   |
| Plug outlet              | Axial  |
| <b>Connection 1</b>      |  |
| Type of connection       | Connector  |
| Function                 | Connection to receiver<br>Sync-input<br>Voltage supply   |
| Thread size              | M12  |
| Type                     | Male   |
| Material                 | Metal  |
| No. of pins              | 5 -pin   |
| Encoding                 | A-coded  |

**Mechanical data**

|                       |   |
|-----------------------|---|
| Design                | Cubic   |
| Dimension (W x H x L) | 29 mm x 35.4 mm x 1,033 mm                      |
| Housing material      | Metal, Aluminum                                 |
| Lens cover material   | Plastic / PMMA                                  |
| Net weight            | 1,100 g   |
| Housing color         | Red   |
| Type of fastening     | Groove mounting<br>Via optional mounting device |

**Operation and display**

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 1 Piece(s) |

**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 8.0            | 27270910 |
| eCl@ss 9.0            | 27270910 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |

## Dimensioned drawings

All dimensions in millimeters



- A Beam spacing 20 mm
- B Measurement field length 950 mm
- F M6 thread
- G Fastening groove
- L Profile length 968 mm
- T Transmitter
- R Receiver
- Y



A PWR / SW IN/OUT

## Electrical connection

| Connection 1       |  |
|--------------------|--|
| Type of connection | Connector  |
| Function           | Connection to receiver<br>Sync-input<br>Voltage supply |
| Thread size        | M12  |
| Type               | Male   |
| Material           | Metal  |
| No. of pins        | 5 -pin   |
| Encoding           | A-coded  |

| Pin | Pin assignment |
|-----|----------------|
| 1   | FE/SHIELD      |
| 2   | V+             |
| 3   | GND            |
| 4   | RS 485 Tx+     |
| 5   | RS 485 Tx-     |




## Operation and display

### LEDs

| LED | Display                                      | Meaning  |
|-----|--|--|
| 1   | Green, continuous light                      | Continuous mode  |
|     | Off  | No communication with the receiver / waiting for trigger |
|     | green, flashing in sync with the measurement | Measurement frequency display                            |

## Suitable receivers

|   | Part no. | Designation                | Article                   | Description  |
|---|----------|----------------------------|---------------------------|--|
|  | 50128953 | CSL710-R20-950.A/<br>L-M12 | Light curtain<br>receiver | Application: Precise object detection<br>Operating range: 0.3 ... 7 m<br>Selectable inputs/outputs: 4 Piece(s)<br>Service interface: IO-Link<br>Connection: Connector, M12, 8 -pin |

## Part number code

 Part designation: **CSL710-XYX-ZZZZ.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                     |

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|      |   |
|------|---|
| 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: connector outlet, axial   |
| 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 electronic 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 - Interconnection cables

|   | Part no. | Designation         | Article               | Description   |
|---|----------|---------------------|-----------------------|---|
|  | 50114691 | KB DN/CAN-1000 SBA  | 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: 1,000 mm<br>Sheathing material: PUR  |
|  | 50122338 | KB DN/CAN-10000 SBA | 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: 10,000 mm<br>Sheathing material: PUR |


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|   | Part no. | Designation                 | Article               | Description  |
|---|----------|-----------------------------|-----------------------|--|
|    | 50114694 | KB DN/CAN-2000 SBA          | 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: 2,000 mm<br>Sheathing material: PUR           |
|    | 50122339 | KB DN/<br>CAN-20000 SBA     | Interconnection cable | Suitable for interface: CANopen, DeviceNet<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: 20,000 mm<br>Sheathing material: PUR          |
|    | 50114698 | KB DN/CAN-5000 SBA          | 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           |
|    | 50129779 | KDS DN-M12-5A-M12-5A-P3-010 | 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: 1,000 mm<br>Sheathing material: PUR  |
|  | 50129780 | KDS DN-M12-5A-M12-5A-P3-020 | 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: 2,000 mm<br>Sheathing material: PUR  |
|  | 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  |
|  | 50129782 | KDS DN-M12-5A-M12-5A-P3-100 | 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: 10,000 mm<br>Sheathing material: PUR |
|  | 50129783 | KDS DN-M12-5A-M12-5A-P3-200 | 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: 20,000 mm<br>Sheathing material: PUR |


**Mounting technology - Mounting brackets**

|   | Part no. | Designation | Article              | Description  |
|---|----------|-------------|----------------------|--|
|  | 429056   | BT-2L       | Mounting bracket set | Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |




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|   | Part no. | Designation | Article              | Description  |
|---|----------|-------------|----------------------|--|
|  | 429057   | BT-2Z       | Mounting bracket set | Design of mounting device: Angle, Z-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |

**Mounting technology - Swivel mounts**

|   | Part no. | Designation | Article              | Description   |
|---|----------|-------------|----------------------|---|
|  | 429046   | BT-2R1      | Mounting bracket set | Contains: 2x BT-R swivel mount, 1 cylinder for mounting on the light curtain<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic |

**Mounting technology - Other**

|   | Part no. | Designation | Article              | Description  |
|---|----------|-------------|----------------------|--|
|   | 425740   | BT-10NC60   | Sliding block set    | Contains: 10x BT-NC sliding block<br>Bore hole 1: Ø 4.7 mm<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Fastening, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal  |
|  | 425741   | BT-10NC64   | Sliding block set    | Contains: 10x BT-NC-M4-M6 sliding block<br>Bore hole 1: M4<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Fastening, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal  |
|  | 425742   | BT-10NC65   | Sliding block set    | Contains: 10x BT-NC-M5-M6 sliding block<br>Bore hole 1: M5<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Fastening, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal  |
|  | 424417   | BT-2P40     | Mounting bracket set | Contains: BT-P40 clamp bracket, 2x<br>Bore hole 1: M6<br>Bore hole 2: M6<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Groove mounting<br>Mounting bracket, at device: Groove mounting<br>Type of mounting device: Clampable<br>Material: Metal  |
|  | 424422   | BT-2SB10    | Mounting bracket set | Contains: 2x BT-SB10<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable, On the lateral C-groove<br>Type of mounting device: Swiveling<br>Swivel range: -8 ... 8°<br>Material: Metal  |
|  | 424423   | BT-2SB10-S  | Mounting bracket set | Contains: 2x BT-SB10-S<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable, On the lateral C-groove<br>Type of mounting device: Swiveling with vibration damper<br>Swivel range: -8 ... 8°<br>Material: Metal<br>Shock absorber: Yes |

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|   | Part no. | Designation | Article              | Description  |
|---|----------|-------------|----------------------|--|
|  | 429058   | BT-2SSD     | Mounting bracket set | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Groove mounting, Clampable, Screw type<br>Type of mounting device: Swiveling<br>Material: Metal  |
|  | 429049   | BT-2SSD-270 | Mounting bracket set | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type, Clampable, Groove mounting<br>Type of mounting device: Swiveling<br>Material: Metal  |
|  | 425725   | BT-4NC      | Sliding block set    | Contains: 4x BT-NC sliding block<br>Bore hole 1: Ø 4.7 mm<br>Bore hole 2: M6<br>Design of mounting device: Sliding block<br>Fastening, at system: Mounting thread<br>Mounting bracket, at device: Groove mounting<br>Material: Metal |
|  | 429059   | BT-4SSD     | Mounting bracket set | Contains: 4x<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Groove mounting, Clampable, Screw type<br>Type of mounting device: Swiveling<br>Material: Metal  |

|   | Part no. | Designation                     | Article         | Description  |
|---|----------|---------------------------------|-----------------|--|
|  | 50121098 | SET<br>MD12-US2-IL1.1<br>+ Zub. | Diagnostics set | Interface: USB<br>Connections: 2 Piece(s)<br>Degree of protection: IP 20 |