



Figure can vary

Part no.: 50128972
CSL710-R40-1890.A/L-M12
Light curtain receiver



Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Suitable transmitters
- Part number code
- Notes
- Accessories

Technical data

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

| Optical data | |
|--------------------------|----------------------------|
| 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 | 1,890 mm |
| Number of beams | 48 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_B | 18 ... 30 V, DC |
| Residual ripple | 0 ... 15 %, From U_{B_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 Ω |
| Number of inputs/outputs selectable | 4 Piece(s) |
| Voltage type, outputs | DC |
| Switching voltage, outputs | Typ. U_{B_B} / 0 V |
| Voltage type, inputs | DC |
| Switching voltage, inputs | high: $\geq 6V$ low: $\leq 4V$ |

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

| Timing | |
|------------------------|------------|
| Readiness delay | 400 ms |
| Cycle time | 1.84 ms |
| Response time per beam | 30 μs |

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

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver
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

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

Connection 2

| | |
|--------------------|---------------------------|
| Type of connection | Connector |
| Function | Connection to transmitter |
| 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, 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 |

Environmental data

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

Certifications

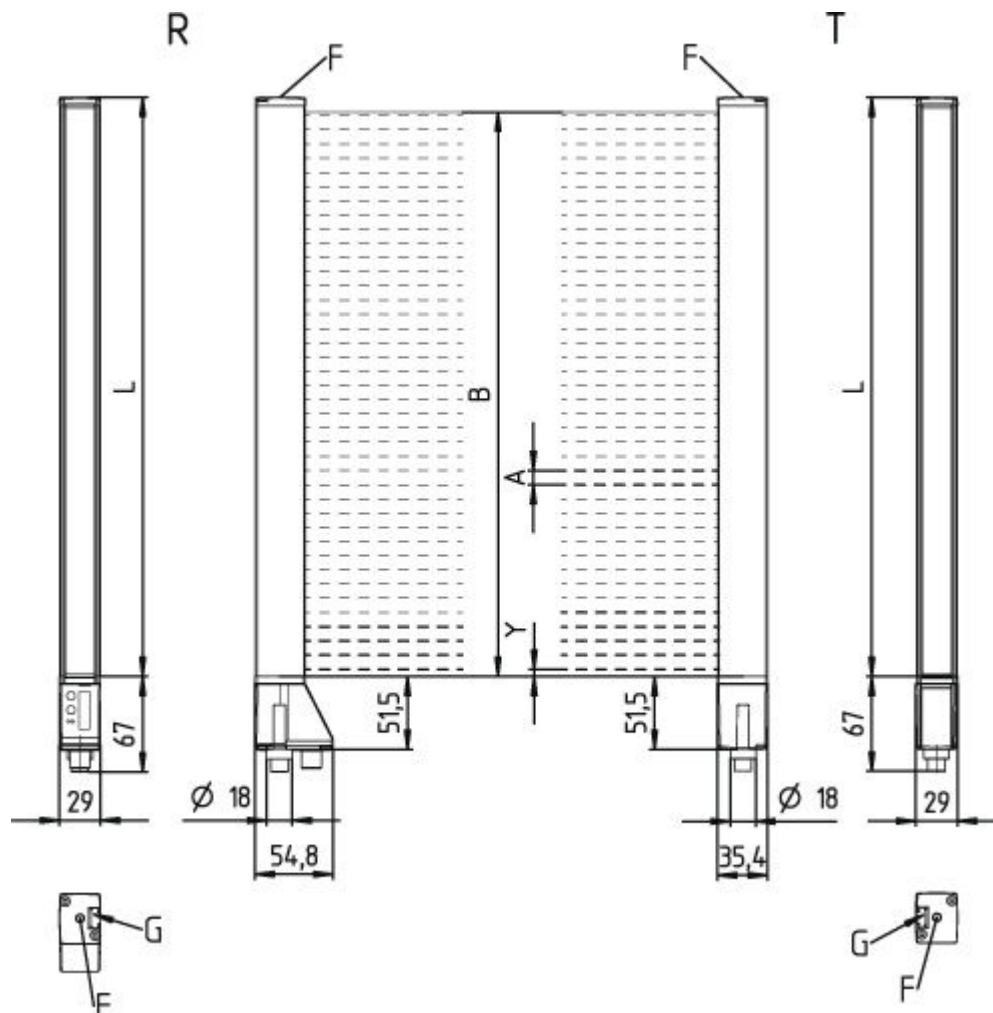
| | |
|----------------------|---------------|
| Degree of protection | IP 65 |
| Protection class | III |
| Certifications | c CSA US |
| Standards applied | IEC 60947-5-2 |

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



Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

- A Beam spacing 40 mm
- B Measurement field length 1890 mm
- F M6 thread
- G Fastening groove
- L Profile length 1928 mm
- T Transmitter
- R Receiver
- Y

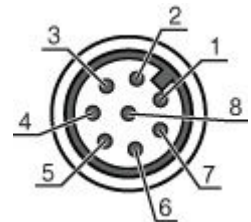


A PWR / SW IN/OUT

Electrical connection

| Connection 1 | |
|--------------------|--|
| Type of connection | Connector |
| Function | Configuration interface Signal IN Signal OUT Voltage supply |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 8 -pin |
| Encoding | A-coded |

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



| Connection 2 | |
|--------------------|---------------------------|
| Type of connection | Connector |
| Function | Connection to transmitter |
| Thread size | M12 |
| Type | Female |

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

| Connection 2 | |
|--------------|---------|
| 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 | 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 |
|---|----------|-----------------------|---------------------------|---|
|  | 50129054 | CSL710-T40-1890.A-M12 | Light curtain transmitter | Application: Precise object detection Operating range: 0.3 ... 7 m Connection: Connector, M12, 5 -pin |

Part number code

Part designation: CSL710-XYX-ZZZZ.A/B-CCC

| | |
|--------|---|
| CSL710 | Operating principle: CSL: switching light curtain of the 710 series |
| X | Function classes: T: transmitter R: receiver |
| YY | Beam spacing: 05: 5 mm 10: 10 mm 20: 20 mm 40: 40 mm |
| ZZZZ | Measurement field length [mm], dependent on beam spacing: Value, see technical data |

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

| | |
|-----|---|
| A | Equipment: A: connector outlet, axial |
| B | Interface: /L: IO-Link |
| CCC | Electrical connection: M12: M12 connector |

| |
|---|
| Note |
| A list with all available device types can be found on the Leuze electronic website at www.leuze.com . |


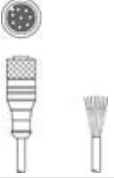
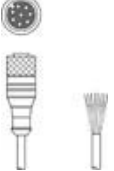
Notes

| |
|---|
| Observe intended use! |
| <ul style="list-style-type: none"> 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: |
| <ul style="list-style-type: none"> 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 |
|---|----------|--------------------|------------------|---|
|  | 50135127 | KD S-M12-8A-P1-020 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR |
|  | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |
|  | 50135129 | KD S-M12-8A-P1-100 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 10,000 mm Sheathing material: PUR |

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|---|----------|---------------------------------|--------------------------|---|
|  | 50120999 | K-DS M12A-8P-4P-2m- L-PUR | Interconnection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 4 -pin Shielded: Yes Cable length: 2,000 mm Sheathing material: PUR |
|  | 50121000 | K-DS M12A-8P-4P-5m- L-PUR | Interconnection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 4 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |
|  | 50114691 | KB DN/CAN-1000 SBA | Interconnection cable | 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: 1,000 mm Sheathing material: PUR |
|  | 50122338 | KB DN/ CAN-10000 SBA | Interconnection cable | 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: 10,000 mm Sheathing material: PUR |
|  | 50114694 | KB DN/CAN-2000 SBA | Interconnection cable | 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: 2,000 mm Sheathing material: PUR |
|  | 50122339 | KB DN/ CAN-20000 SBA | Interconnection cable | Suitable for interface: CANopen, DeviceNet Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin Shielded: Yes Cable length: 20,000 mm Sheathing material: PUR |
|  | 50114698 | KB DN/CAN-5000 SBA | Interconnection cable | 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 |
|  | 50129779 | KDS DN-M12-5A- M12-5A-P3-010 | Interconnection cable | Suitable for interface: IO-Link, 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: 1,000 mm Sheathing material: PUR |
|  | 50129780 | KDS DN-M12-5A- M12-5A-P3-020 | Interconnection cable | Suitable for interface: IO-Link, 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: 2,000 mm Sheathing material: PUR |

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

| | Part no. | Designation | Article | Description |
|---|----------|-----------------------------|-----------------------|--|
|  | 50129781 | KDS DN-M12-5A-M12-5A-P3-050 | Interconnection cable | Suitable for interface: IO-Link, 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 |
|  | 50129782 | KDS DN-M12-5A-M12-5A-P3-100 | Interconnection cable | Suitable for interface: IO-Link, 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: 10,000 mm Sheathing material: PUR |
|  | 50129783 | KDS DN-M12-5A-M12-5A-P3-200 | Interconnection cable | Suitable for interface: IO-Link, 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: 20,000 mm 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 Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Material: Metal |
|  | 429057 | BT-2Z | Mounting bracket set | Design of mounting device: Angle, Z-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type 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 Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Turning, 360° Material: Metal, Plastic |

Mounting technology - Other

| | Part no. | Designation | Article | Description |
|---|----------|-------------|-------------------|---|
|  | 425740 | BT-10NC60 | Sliding block set | Contains: 10x BT-NC sliding block Bore hole 1: Ø 4.7 mm Bore hole 2: M6 Design of mounting device: Sliding block Fastening, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal |

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

| | Part no. | Designation | Article | Description |
|---|----------|-------------|----------------------|---|
|  | 425741 | BT-10NC64 | Sliding block set | Contains: 10x BT-NC-M4-M6 sliding block Bore hole 1: M4 Bore hole 2: M6 Design of mounting device: Sliding block Fastening, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal |
|  | 425742 | BT-10NC65 | Sliding block set | Contains: 10x BT-NC-M5-M6 sliding block Bore hole 1: M5 Bore hole 2: M6 Design of mounting device: Sliding block Fastening, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal |
|  | 424417 | BT-2P40 | Mounting bracket set | Contains: BT-P40 clamp bracket, 2x Bore hole 1: M6 Bore hole 2: M6 Design of mounting device: Mounting clamp Fastening, at system: Groove mounting Mounting bracket, at device: Groove mounting Type of mounting device: Clampable Material: Metal |
|  | 424422 | BT-2SB10 | Mounting bracket set | Contains: 2x BT-SB10 Design of mounting device: Mounting clamp Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable, On the lateral C-groove Type of mounting device: Swiveling Swivel range: -8 ... 8 ° Material: Metal |
|  | 424423 | BT-2SB10-S | Mounting bracket set | Contains: 2x BT-SB10-S Design of mounting device: Mounting clamp Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable, On the lateral C-groove Type of mounting device: Swiveling with vibration damper Swivel range: -8 ... 8 ° Material: Metal Shock absorber: Yes |
|  | 429058 | BT-2SSD | Mounting bracket set | Fastening, at system: Through-hole mounting Mounting bracket, at device: Groove mounting, Clampable, Screw type Type of mounting device: Swiveling Material: Metal |
|  | 429049 | BT-2SSD-270 | Mounting bracket set | Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Clampable, Groove mounting Type of mounting device: Swiveling Material: Metal |
|  | 425725 | BT-4NC | Sliding block set | Contains: 4x BT-NC sliding block Bore hole 1: Ø 4.7 mm Bore hole 2: M6 Design of mounting device: Sliding block Fastening, at system: Mounting thread Mounting bracket, at device: Groove mounting Material: Metal |
|  | 429059 | BT-4SSD | Mounting bracket set | Contains: 4x Fastening, at system: Through-hole mounting Mounting bracket, at device: Groove mounting, Clampable, Screw type Type of mounting device: Swiveling Material: Metal |

Part no.: 50128972 – CSL710-R40-1890.A/L-M12 – Light curtain receiver

| | Part no. | Designation | Article | Description |
|---|----------|---------------------------------|------------------|--|
|  | 50131483 | MD 248i-12-8K/ L4-2R2K | Distribution box | Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: PROFINET, IO-Link Connections: 14 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 4 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67 |
|  | 50131485 | MD 258i-12-8K/ L4-2R2K | Distribution box | Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: EtherNet IP, IO-Link, Modbus TCP Connections: 14 Piece(s) Sensor connections: 8 Piece(s) Connections for voltage supply: 4 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67 |
|  | 50131482 | MD 748i-11-42/ L5-2222 | Distribution box | Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: PROFINET, IO-Link Connections: 8 Piece(s) Sensor connections: 4 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67 |
|  | 50131484 | MD 758i-11-42/ L5-2222 | Distribution box | Type: IO-Link master Supply voltage: 18 ... 30 V Switching outputs for each sensor connection: 1 Piece(s) Switching output: Transistor, PNP / NPN reversible Interface: EtherNet IP, IO-Link, Modbus TCP Connections: 8 Piece(s) Sensor connections: 4 Piece(s) Connections for voltage supply: 2 Piece(s) Interface connections: 2 Piece(s) Degree of protection: IP 67 |
|  | 50121098 | SET MD12-US2-IL1.1 + Zub. | Diagnostics set | Interface: USB Connections: 2 Piece(s) Degree of protection: IP 20 |