

## Technical data sheet

### Throughbeam photoelectric sensor transmitter

Part no.: 50148179

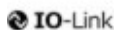
LS55C/8X-5000



For illustration purposes only

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## Technical data

### Basic data

|                     |                       |
|---------------------|-----------------------|
| Series              | 55C                   |
| Operating principle | Throughbeam principle |
| Device type         | Transmitter           |

### Special version

|                 |                  |
|-----------------|------------------|
| Special version | Activation input |
|                 | Wash-Down design |

### Optical data

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| Operating range                      | 0.05 ... 8.5 m (guaranteed operating range) |
| Operating range limit                | 0.05 ... 10 m (typical operating range)     |
| Beam path                            | Divergent                                   |
| Light source                         | LED, Red                                    |
| Wavelength                           | 645 nm                                      |
| Transmitted-signal shape             | Pulsed                                      |
| LED group                            | Exempt group (in acc. with EN 62471)        |
| Light spot size [at sensor distance] | 4 mm [100 mm]                               |
| Type of light spot geometry          | Round                                       |

### Electrical data

|                    |                              |
|--------------------|------------------------------|
| Protective circuit | Polarity reversal protection |
|                    | Short circuit protected      |

#### Performance data

|                      |                                        |
|----------------------|----------------------------------------|
| Supply voltage $U_B$ | 10 ... 30 V, DC, Incl. residual ripple |
| Residual ripple      | 0 ... 15 %, From $U_B$                 |
| Open-circuit current | 0 ... 15 mA                            |

#### Inputs

|                             |            |
|-----------------------------|------------|
| Number of activation inputs | 1 Piece(s) |
|-----------------------------|------------|

#### Activation inputs

|                   |                  |
|-------------------|------------------|
| Type              | Activation input |
| Voltage type      | DC               |
| Switching voltage | high: $\geq 8V$  |
|                   | low: $\leq 2 V$  |

#### Activation input 1

|                        |      |
|------------------------|------|
| Active switching state | High |
|------------------------|------|

### Time behavior

|                 |        |
|-----------------|--------|
| Readiness delay | 300 ms |
|-----------------|--------|

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

#### Connection 1

|                      |                     |
|----------------------|---------------------|
| Function             | Signal IN           |
|                      | Voltage supply      |
| Type of connection   | Cable               |
| Cable length         | 5,000 mm            |
| Sheathing material   | PVC                 |
| Cable color          | Black               |
| Number of conductors | 4 -wire             |
| Wire cross section   | 0.2 mm <sup>2</sup> |

### Mechanical data

|                                 |                                                                          |
|---------------------------------|--------------------------------------------------------------------------|
| Dimension (W x H x L)           | 14 mm x 35.4 mm x 25 mm                                                  |
| Housing material                | Stainless steel                                                          |
| Material of operational control | Plastic (POM Hostaform C9021, copoly-ester Tritan TX1001), non-diffusive |
| Housing roughness               | Ra $\leq 0,8$ , Typical value for the stainless steel housing            |
| Stainless steel housing         | AISI 316L, DIN X2CrNiMo17132, W. No1.4404                                |
| Lens cover material             | Plastic (PMMA+) with scratch-resistant Indium protective coating         |
| Net weight                      | 210 g                                                                    |
| Housing color                   | Silver                                                                   |
| Type of fastening               | Through-hole mounting                                                    |
|                                 | Via optional mounting device                                             |
| Compatibility of materials      | CleanProof+                                                              |
|                                 | ECOLAB                                                                   |
|                                 | Johnson Diversey                                                         |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

### Environmental data

|                                |                                      |
|--------------------------------|--------------------------------------|
| Ambient temperature, operation | -40 ... 60 °C, (70 °C $\leq 15$ min) |
| Ambient temperature, storage   | -40 ... 70 °C                        |

### Certifications

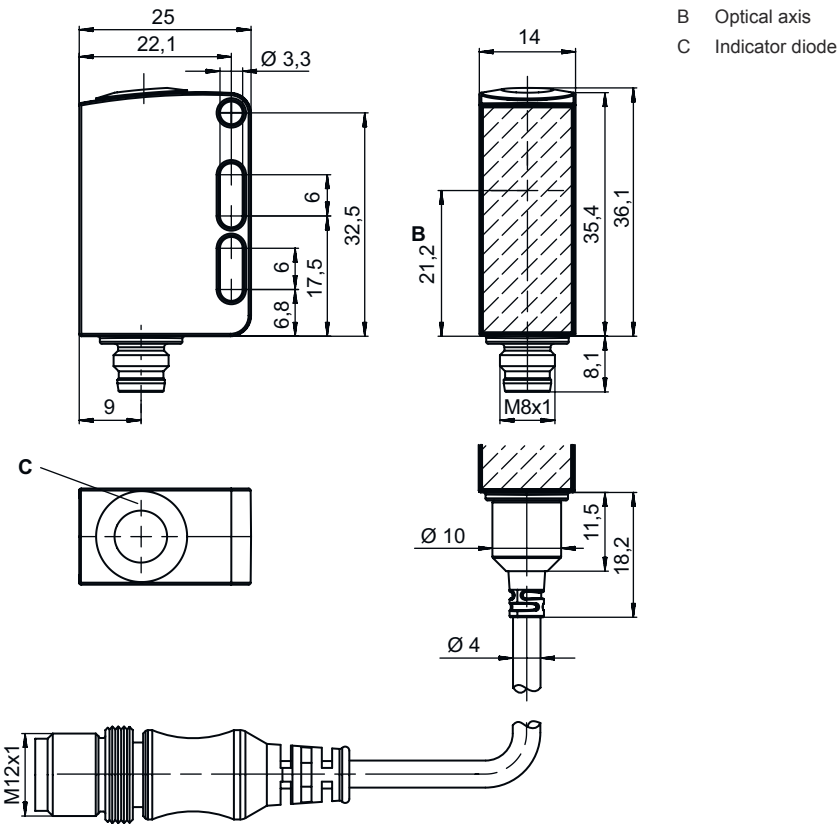
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
|                      | IP 68         |
|                      | IP 69K        |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4          | 27270901 |
| ECLASS 8.0            | 27270901 |
| ECLASS 9.0            | 27270901 |
| ECLASS 10.0           | 27270901 |
| ECLASS 11.0           | 27270901 |
| ECLASS 12.0           | 27270901 |
| ECLASS 13.0           | 27270901 |
| ECLASS 14.0           | 27270901 |
| ECLASS 15.0           | 27270901 |
| ETIM 5.0              | EC002716 |
| ETIM 6.0              | EC002716 |
| ETIM 7.0              | EC002716 |
| ETIM 8.0              | EC002716 |
| ETIM 9.0              | EC002716 |
| ETIM 10.0             | EC002716 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

|                      |                |
|----------------------|----------------|
| Function             | Signal IN      |
|                      | Voltage supply |
| Type of connection   | Cable          |
| Cable length         | 5,000 mm       |
| Sheathing material   | PVC            |
| Cable color          | Black          |
| Number of conductors | 4 -wire        |
| Wire cross section   | 0.2 mm²        |

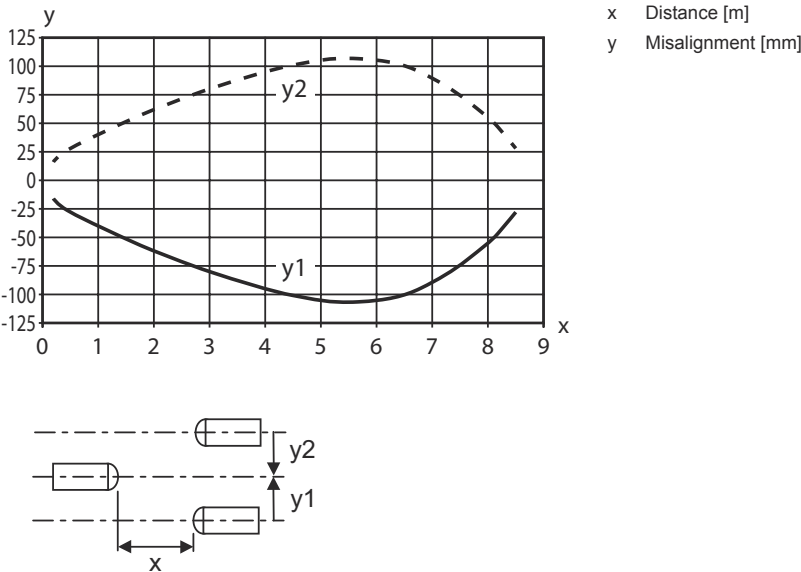
Conductor color

Conductor assignment

|       |      |
|-------|------|
| Brown | V+   |
| White | n.c. |
| Blue  | GND  |
| Black | IN 1 |

Diagrams

Typ. response behavior



Operation and display

| LED | Display                  | Meaning                 |
|-----|--------------------------|-------------------------|
| 1   | Green, continuous light  | Operational readiness   |
| 2   | Yellow, continuous light | Transmitted beam active |

Suitable receivers

|                                                                                     | Part no. | Designation   | Operating range<br>Operating range<br>limit | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|----------|---------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50148182 | LE55C/LG-5000 | 0.05 ... 8.5 m<br>0.05 ... 10 m             | Special version: Wash-Down design<br>Supply voltage: DC<br>Digital switching outputs: 2 Piece(s)<br>Switching output 1: Transistor, Push-pull, IO-Link / light switching (PNP)/dark switching (NPN)<br>Switching output 2: Transistor, Push-pull, Dark switching (PNP)/light switching (NPN)<br>Switching frequency: 1,000 Hz<br>Interface: IO-Link<br>Connection: Cable, 5,000 mm, 4 -wire |

Part number code

Part designation: AAA55C d EE-f.GGGG H/I J-K

|        |                                                                                                                                                                                                                                                                                                                                                               |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAA55C | <b>Operating principle / construction</b><br>HT55C: Diffuse reflection sensor with background suppression<br>LS55C: Throughbeam photoelectric sensor transmitter<br>LE55C: Throughbeam photoelectric sensor receiver<br>PRK55C: Retro-reflective photoelectric sensor with polarization filter<br>ODT55C: Distance diffuse sensor with background suppression |
| d      | <b>Light type</b><br>n/a: red light<br>I: infrared light                                                                                                                                                                                                                                                                                                      |

**Part number code**

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EE</b>   | <b>Light source</b><br>n/a: LED<br>L1: laser class 1<br>L2: laser class 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>f</b>    | <b>Preset range (optional)</b><br>n/a: operating range acc. to data sheet<br>xxxF: Preset range [mm]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>GGGG</b> | <b>Equipment</b><br>n/a: standard<br>A: Autocollimation principle (single lens) for positioning tasks<br>F: Permanently set range<br>H2O: Detection of aqueous liquids<br>Fill-level monitoring<br>S: small light spot<br>T: autocollimation principle (single lens) for highly transparent bottles without tracking<br>TT: autocollimation principle (single lens) for highly transparent bottles with tracking<br>V: V-optics<br>XL: Extra long light spot                                                                                                                                                                                                      |
| <b>H</b>    | <b>Operating range adjustment</b><br>n/a with HT: range adjustable via 8-turn potentiometer<br>n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable<br>1: 270° potentiometer<br>3: teach-in via button                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>i</b>    | <b>Switching output/function OUT 1/IN: Pin 4 or black conductor</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>6: push-pull switching output, PNP light switching, NPN dark switching<br>G: Push-pull switching output, PNP dark switching, NPN light switching<br>L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching)<br>8: activation input (activation with high signal)<br>X: pin not used<br>1: IO-Link / light switching (NPN) / dark switching (PNP)<br>7: Input for sensitivity adjustment |
| <b>J</b>    | <b>Switching output / function OUT 2/IN: pin 2 or white conductor</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>6: push-pull switching output, PNP light switching, NPN dark switching<br>G: Push-pull switching output, PNP dark switching, NPN light switching<br>T: teach-in via cable<br>X: pin not used<br>8: activation input (activation with high signal)<br>9: deactivation input (deactivation with high signal)<br>7: Input for sensitivity adjustment                                                      |
| <b>K</b>    | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 4-wire<br>5000: cable, standard length 5000 mm, 4-wire<br>M8: M8 connector, 4-pin (plug)<br>M8.3: M8 connector, 3-pin (plug)<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)                                                                                                                                                                                                                                                                                                                                                                                        |

**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)

## Further information

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5kOhm is recommended
- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- Permissible operating temperature range during IO-Link operation: -10 °C to +60 °C
- Ambient temperature, operation: +70 °C permissible only briefly (≤ 15min)
- IP 69K only in combination with connector

## Accessories

### Mounting technology - Mounting brackets

|                                                                                     | Part no. | Designation | Article          | Description                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|----------|-------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50118542 | BT 200M.5   | Mounting bracket | Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type, Suited for M3 screws<br>Type of mounting device: Adjustable<br>Material: Stainless steel |
|  | 50040269 | BT 25       | Mounting device  | Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Rigid<br>Material: Metal                                      |

**Accessories****Mounting technology - Rod mounts**

|                                                                                   | Part no. | Designation    | Article         | Description                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------|----------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117255 | BTU 200M-D12   | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type, Suited for M3 screws<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |
|  | 50120426 | BTU 200M.5-D12 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type, Suited for M3 screws<br>Type of mounting device: Turning, 360°, Adjustable, Clampable<br>Material: Stainless steel             |

**Note**

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