

Technical data sheet

Throughbeam photoelectric sensor transmitter

Part no.: 50137200

LS3CL1/8X-200-M12



For illustration purposes only

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Technical data

Basic data

| | |
|---------------------|-----------------------|
| Series | 3C |
| Operating principle | Throughbeam principle |
| Device type | Transmitter |

Special version

| | |
|-----------------|------------------|
| Special version | Activation input |
|-----------------|------------------|

Optical data

| | |
|--------------------------------------|--|
| Operating range | 0 ... 5 m (guaranteed operating range) |
| Operating range limit | 0 ... 10 m (typical operating range) |
| Beam path | Collimated |
| Light source | Laser, Red |
| Wavelength | 650 nm |
| Laser class | 1, in accordance with IEC 60825-1:2014 (EN 60825-1:2014) |
| Transmitted-signal shape | Pulsed |
| Light spot size [at sensor distance] | 2.5 mm x 2 mm [1,000 mm] |
| Type of light spot geometry | elliptic |

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 ... 20 mA |

Inputs

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

Activation inputs

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

Activation input 1

| | |
|------------------------|---------------------|
| Assignment | Connection 1, pin 4 |
| 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 with connector |
| Cable length | 200 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Wire cross section | 0.2 mm ² |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|--|---|
| Dimension (W x H x L) | 11.4 mm x 34.2 mm x 18.3 mm |
| Housing material | Plastic |
| Plastic housing | PC-ABS |
| Lens cover material | Plastic / PMMA |
| Net weight | 20 g |
| Housing color | Red |
| Type of fastening | Through-hole mounting Via optional mounting device |
| Recommended tightening torque for M3 fastening | 0.9 N·m |
| Compatibility of materials | ECOLAB |

Operation and display

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

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 55 °C |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

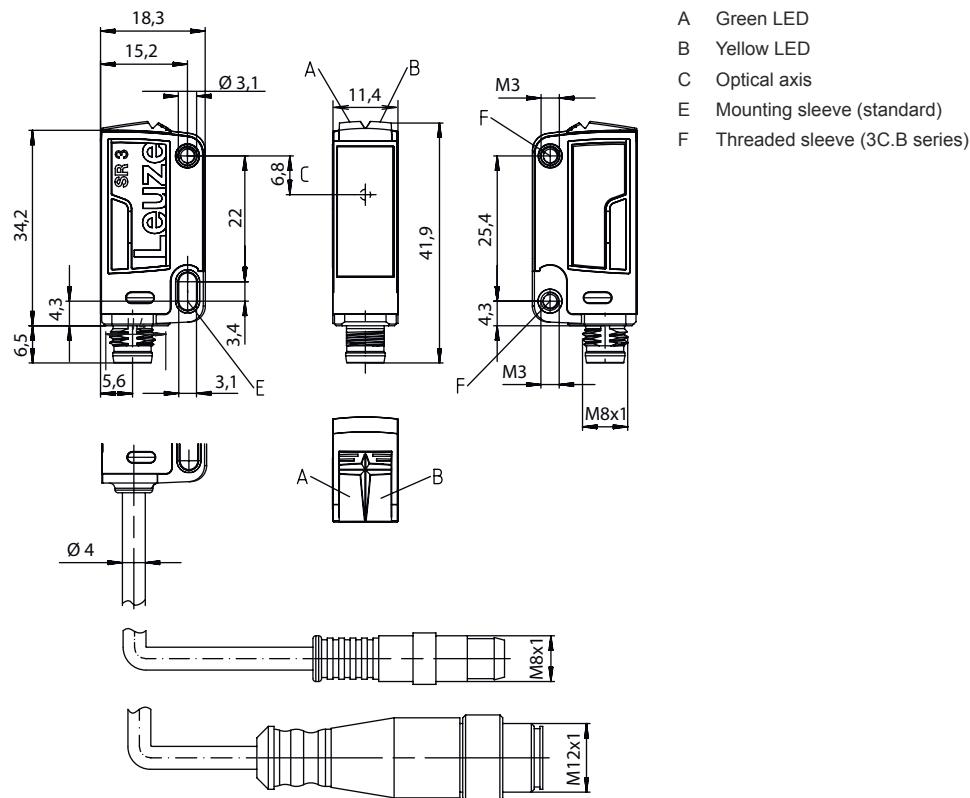
| | |
|----------------------|-----------------|
| Degree of protection | IP 67 IP 69K |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

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 |
| ECLASS 16.0 | 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



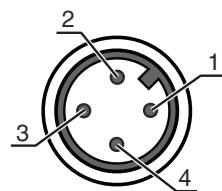
Electrical connection

Connection 1

| | |
|---------------------------|---------------------|
| Function | Signal IN |
| Type of connection | Voltage supply |
| Cable length | 200 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Wire cross section | 0.2 mm ² |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | A-coded |

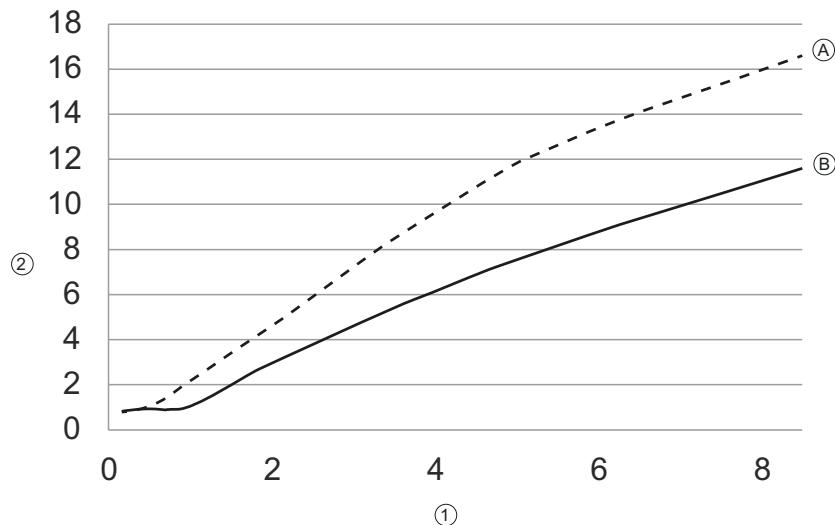
Pin assignment

| | |
|---|------|
| 1 | V+ |
| 2 | n.c. |
| 3 | GND |
| 4 | IN 1 |



Diagrams

Typ. light spot size



x Distance [m]
y Diameter [mm]

1 Distance [m]
2 Diameter [mm]

A Vertical
B Horizontal

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 Operating range limit | Description |
|---|------------------------------|---|--|
|  | 50137203 LE3CL1.1/6G-200-M12 | 0 ... 5 m 0 ... 10 m | Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, Push-pull, Light switching (PNP)/dark switching (NPN) Switching output 2: Transistor, Push-pull, Dark switching (PNP)/light switching (NPN) Switching frequency: 3,000 Hz Connection: Cable with connector, 200 mm, M12, Metal, 4 -pin Operational controls: 270° potentiometer |

Part number code

Part designation: AAA 3C d EE-f.GG H/i J-K

| | |
|--------------|--|
| AAA3C | Operating principle / construction HT3C: Diffuse reflection sensor with background suppression LS3C: Throughbeam photoelectric sensor transmitter LE3C: Throughbeam photoelectric sensor receiver PRK3C: Retro-reflective photoelectric sensor with polarization filter ODT3C: Distance diffuse sensor with background suppression |
| d | Light type n/a: red light I: infrared light |
| EE | Light source n/a: LED L1: laser class 1 L2: laser class 2 PP: Power PinPoint® LED |
| f | Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] 2M: operating range of 2 meters |
| GG | Equipment n/a: standard A: Autocollimation principle (single lens) for positioning tasks B: Housing model with two M3 threaded sleeves, brass F: Permanently set range L: Long light spot S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: Extra long light spot X: extended model HF: Suppression of HF illumination (LED) |
| H | Operating range adjustment n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button 6: auto-teach |
| i | Switching output/function OUT 1/IN: Pin 4 or black conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 8: activation input (activation with high signal) X: pin not used 1: IO-Link / light switching (NPN) / dark switching (PNP) |
| J | Switching output / function OUT 2/IN: pin 2 or white conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching W: warning output X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) T: teach-in via cable |

Part number code

K

Electrical connection

n/a: cable, standard length 2000 mm, 4-wire
 5000: cable, standard length 5000 mm, 4-wire
 M8: M8 connector, 4-pin (plug)
 M8.3: M8 connector, 3-pin (plug)
 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)
 200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug)
 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.

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: CYJV7 or PVVA/PVVA7)

WARNING! LASER RADIATION – CLASS 1 LASER PRODUCT



The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of **laser class 1** and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.
 ↳ Observe the applicable statutory and local laser protection regulations.
 ↳ The device must not be tampered with and must not be changed in any way.
 There are no user-serviceable parts inside the device.
 Repairs must only be performed by Leuze electronic GmbH + Co. KG.

Further information

- Light source: Average life expectancy 50,000 h at an ambient temperature of 25 °C

Accessories

Connection technology - Connection cables

| Part no. | Designation | Article | Description |
|---|-------------|--------------------|---|
|  | 50130652 | KD U-M12-4A-V1-050 | Connection cable Application: Chemical resistant Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |
|  | 50130690 | KD U-M12-4W-V1-050 | Connection cable Application: Chemical resistant Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

Mounting technology - Mounting brackets

| Part no. | Designation | Article | Description |
|--|-------------|---------|---|
|  | 50060511 | BT 3 | Mounting device Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal |

Mounting technology - Rod mounts

| Part no. | Designation | Article | Description |
|---|-------------|--------------|--|
|  | 50117829 | BTP 200M-D12 | Mounting system Design of mounting device: Protection hood Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |
|  | 50117255 | BTU 200M-D12 | Mounting system Contains: 2x M3 x 16 screw, 2 M3 x 20 screws, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |

Note

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