

Technical data sheet

Throughbeam photoelectric sensor

Part no.: 50137194

LS3CL1/XX-M8



Figure can vary

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Suitable receivers
- Part number code
- Notes
- Further information
- Accessories



Technical data

Basic data

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

Optical data

| | |
|--------------------------------------|----------------------------|
| Operating range | Guaranteed operating range |
| Operating range | 0 ... 5 m |
| Operating range limit | Typical operating range |
| Operating range limit | 0 ... 10 m |
| Beam path | Collimated |
| Light source | Laser, Red |
| Laser light wavelength | 650 nm |
| Laser class | 1, IEC / 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 |

Timing

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

Connection

| | |
|--------------------|----------------|
| Connection 1 | |
| Function | Voltage supply |
| Type of connection | Connector |
| Thread size | M8 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |

Mechanical data

| | |
|----------------------------|---|
| Dimension (W x H x L) | 11.4 mm x 34.2 mm x 18.3 mm |
| Housing material | Plastic, PC-ABS |
| Lens cover material | Plastic / PMMA |
| Net weight | 10 g |
| Housing color | Red |
| Type of fastening | Through-hole mounting Via optional mounting device |
| 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 |

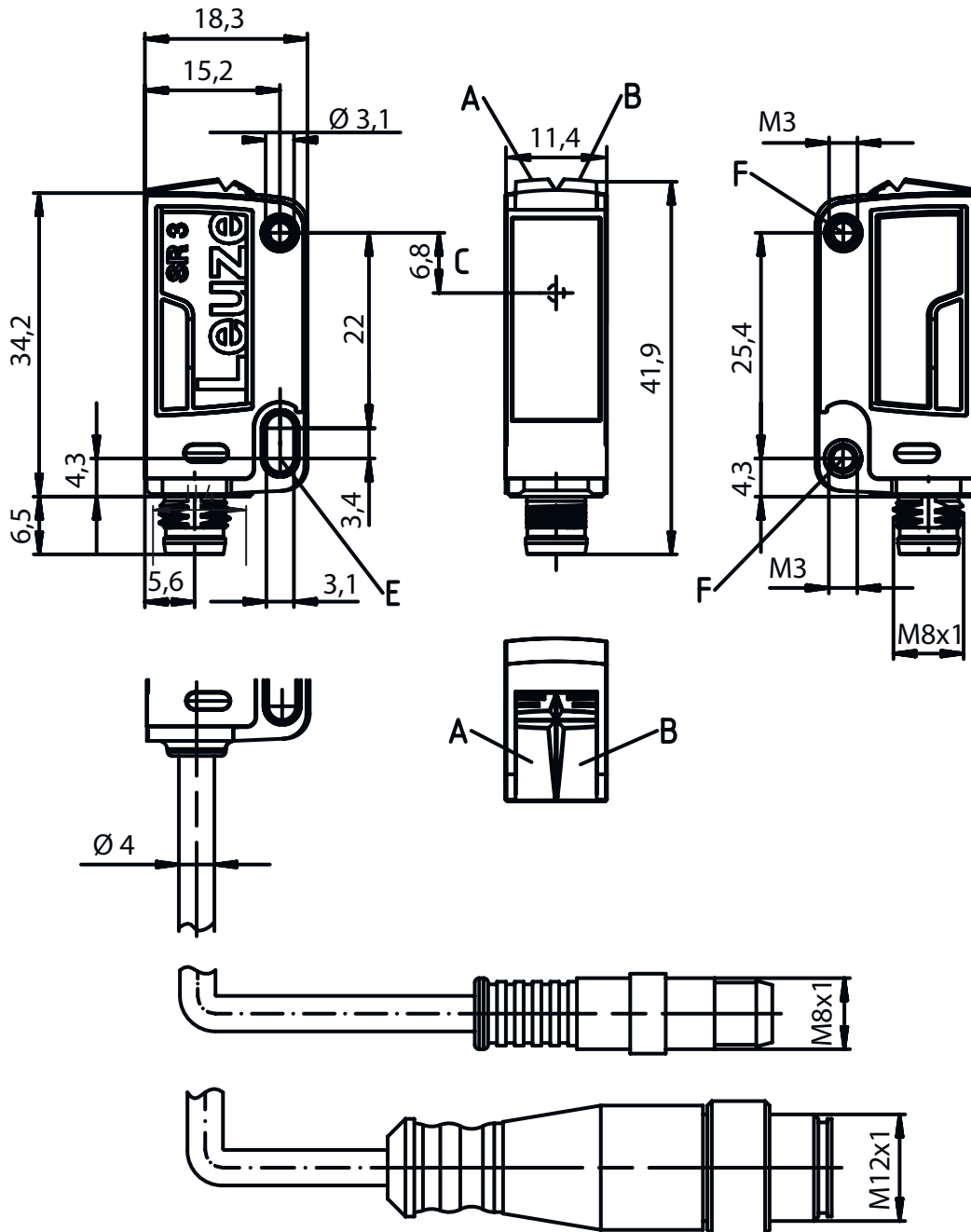
Certifications

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

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0 | 27270901 |
| eCl@ss 9.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |

All dimensions in millimeters



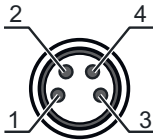
- | | | | |
|---|--------------|---|-------------------------------|
| A | Green LED | E | Mounting sleeve (standard) |
| B | Yellow LED | F | Threaded sleeve (3C.B series) |
| C | Optical axis | | |

Electrical connection

Connection 1

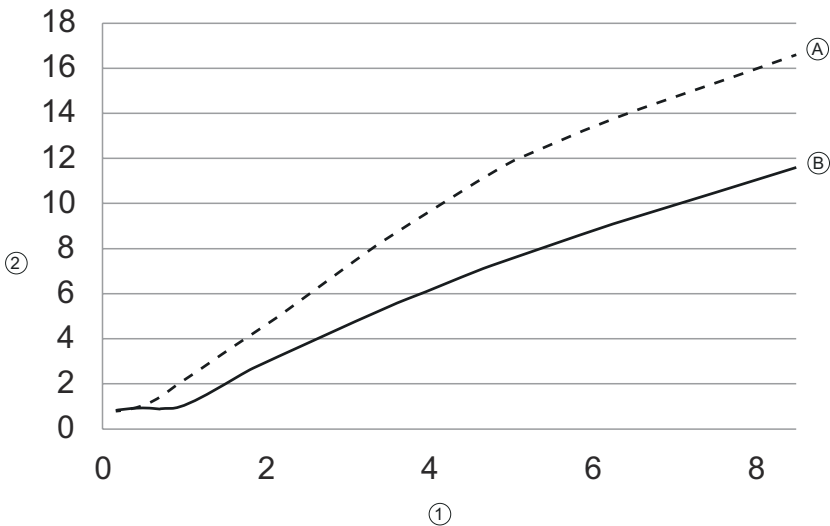
| | |
|--------------------|----------------|
| Function | Voltage supply |
| Type of connection | Connector |
| Thread size | M8 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |

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



Diagrams

Typ. light spot size






- x Distance [m]
- y Diameter [mm]
- 1 Distance [m] A Vertical
- 2 Diameter [mm] 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 | Article | Description |
|---|----------|----------------|---|---|
|  | 50137205 | LE3CL1.1/4W-M8 | Throughbeam photoelectric sensor receiver | Special version: Warning output Operating range limit: 0 ... 10 m Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, PNP, Light switching Switching output 2: Transistor, PNP, UB switching Switching frequency: 3,000 Hz Connection: Connector, M8, Metal, 4 -pin Operational controls: 270° potentiometer |
|  | 50137201 | LE3CL1.1/6G-M8 | Throughbeam photoelectric sensor receiver | Operating range limit: 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: Connector, M8, Metal, 4 -pin Operational controls: 270° potentiometer |
|  | 50137207 | LE3CL1.1/LP-M8 | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 10 m Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, Push-pull, IO-Link / light switching (PNP)/dark switching (NPN) Switching output 2: Transistor, PNP, Dark switching Switching frequency: 1,000 Hz Interface: IO-Link Connection: Connector, M8, 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 |
| d | Light type n/a: red light I: infrared light |
| EE | Light source n/a: LED L1: laser class 1 L2: laser class 2 |
| f | Preset range (optional) n/a: operating range acc. to data sheet xxxF: preset range [mm] |
| 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 |
| 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 |

Part number code

| | |
|----------|--|
| 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 |
| 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: CYJV/ CYJV7 or PVVA/PVVA7)

Notes

WARNING! LASER RADIATION – CLASS 1 LASER PRODUCT



The device satisfies the requirements of IEC 60825-1:2014 (EN 60825-1:2014) safety regulations for a product of **laser class 1** as well as the **U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24, 2007.**

- ☞ 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 |
|--|----------|-------------------|------------------|--|
| | 50130850 | KD U-M8-4A-V1-050 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |
| | 50130871 | KD U-M8-4W-V1-050 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin 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 |

Accessories

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 | 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.