

## Technical data sheet

### Throughbeam photoelectric sensor receiver

Part no.: 50137187

LE3C/6G-200-M12



For illustration purposes only

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## Technical data

### Basic data

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

### Optical data

|                       |                            |
|-----------------------|----------------------------|
| Operating range       | 0.05 ... 8.5 m             |
| Operating range       | Guaranteed operating range |
| Operating range limit | 0.05 ... 10 m              |
| Operating range limit | Typical operating range    |

### 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                            |

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 2 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                         |                        |
|-------------------------|------------------------|
| Voltage type            | DC                     |
| Switching current, max. | 100 mA                 |
| Switching voltage       | high: $\geq(U_B - 2V)$ |
|                         | low: $\leq 2 V$        |

### Switching output 1

|                     |  |
|---------------------|--|
| Assignment          | Connection 1, pin 4                        |
| Switching element   | Transistor, Push-pull                      |
| Switching principle | Light switching (PNP)/dark switching (NPN) |

### Switching output 2

|                     |  |
|---------------------|--|
| Assignment          | Connection 1, pin 2                        |
| Switching element   | Transistor, Push-pull                      |
| Switching principle | Dark switching (PNP)/light switching (NPN) |

### Time behavior

|                     |          |
|---------------------|----------|
| Switching frequency | 1,000 Hz |
| Response time       | 0.5 ms   |
| Readiness delay     | 300 ms   |

### Connection

#### Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Signal OUT           |
|                    | Voltage supply       |
| Type of connection | Cable with connector |
| Cable length       | 200 mm               |
| Sheathing material | PUR                  |
| Cable color        | Black                |
| Wire cross section | 0.2 mm <sup>2</sup>  |
| 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 |
| Compatibility of materials | ECOLAB                       |

### Operation and display

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

### Environmental data

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

### Certifications

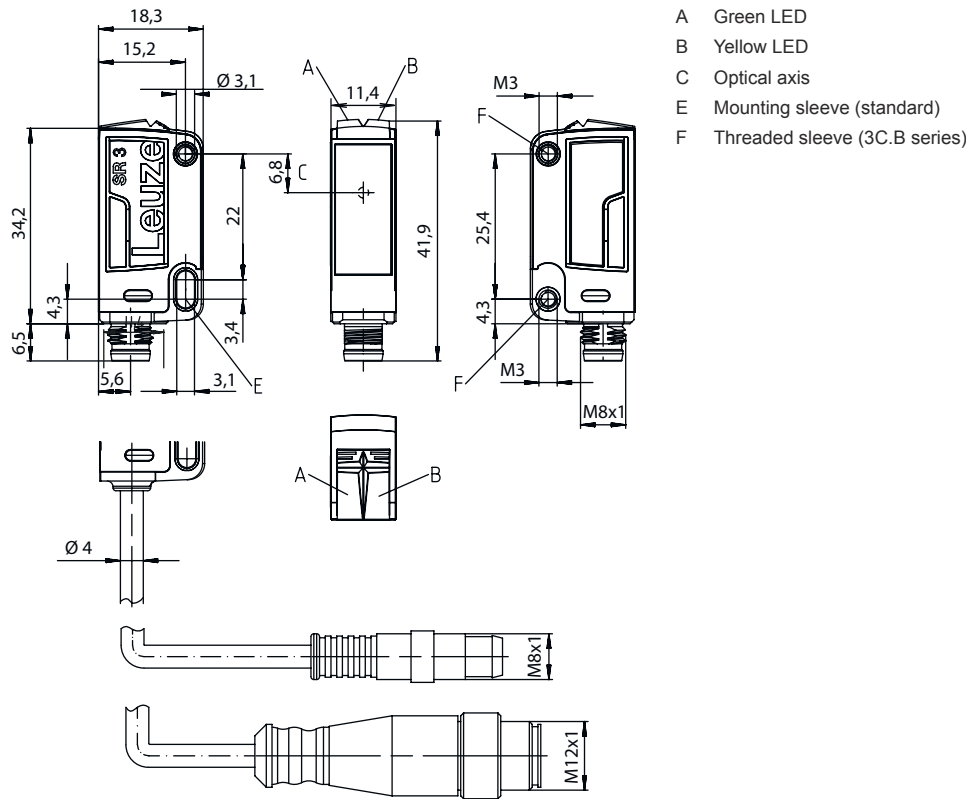
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
|                      | IP 69K        |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### 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 |
| 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



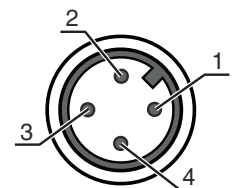
## Electrical connection

### Connection 1

|                           |                              |
|---------------------------|------------------------------|
| <b>Function</b>           | Signal OUT<br>Voltage supply |
| <b>Type of connection</b> | Cable with connector         |
| <b>Cable length</b>       | 200 mm                       |
| <b>Sheathing material</b> | PUR                          |
| <b>Cable color</b>        | Black                        |
| <b>Wire cross section</b> | 0.2 mm <sup>2</sup>          |
| <b>Thread size</b>        | M12                          |
| <b>Type</b>               | Male                         |
| <b>Material</b>           | Metal                        |
| <b>No. of pins</b>        | 4 -pin                       |
| <b>Encoding</b>           | A-coded                      |

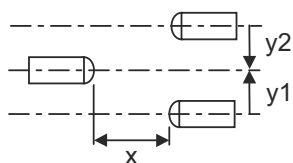
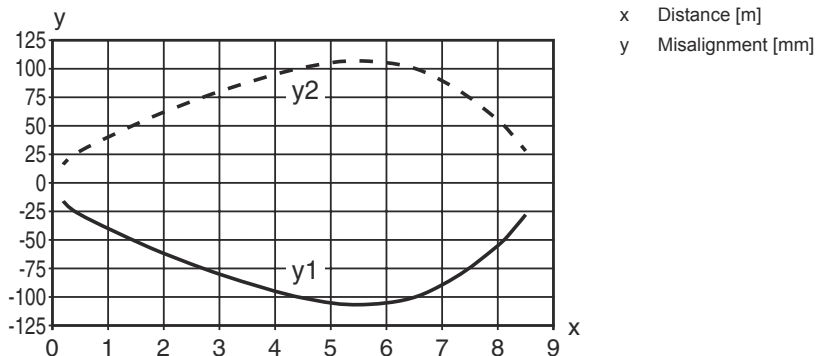
### Pin Pin assignment

|            |                       |
|------------|-----------------------|
| <b>Pin</b> | <b>Pin assignment</b> |
| 1          | V+                    |
| 2          | OUT 2                 |
| 3          | GND                   |
| 4          | OUT 1                 |



# Diagrams

## Typ. response behavior



## Operation and display

| LED | Display                  | Meaning                              |
|-----|--------------------------|--------------------------------------|
| 1   | Green, continuous light  | Operational readiness                |
| 2   | Yellow, continuous light | Light path free                      |
|     | Yellow, flashing         | Light path free, no function reserve |

## Suitable transmitters

|  | Part no. | Designation     | Article                                      | Description   |
|--|----------|-----------------|--|---|
|  | 50137179 | LS3C/8X-200-M12 | Throughbeam photoelectric sensor transmitter | Special version: Activation input<br>Operating range limit: 0.05 ... 10 m<br>Light source: LED, Red<br>Supply voltage: DC<br>Connection: Cable with connector, 200 mm, M12, Metal, 4 -pin |
|  | 50137178 | LS3C/XX-200-M12 | Throughbeam photoelectric sensor transmitter | Operating range limit: 0.05 ... 10 m<br>Light source: LED, Red<br>Supply voltage: DC<br>Connection: Cable with connector, 200 mm, M12, Metal, 4 -pin                                      |

## 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            |

## Part number code

|           |  |
|-----------|--|
| <b>d</b>  | <b>Light type</b><br>n/a: red light<br>l: infrared light   |
| <b>EE</b> | <b>Light source</b><br>n/a: LED<br>L1: laser class 1<br>L2: laser class 2<br>PP: Power PinPoint LED  |
| <b>f</b>  | <b>Preset range (optional)</b><br>n/a: operating range acc. to data sheet<br>xxxF: Preset range [mm]<br>2M: operating range of 2 meters  |
| <b>GG</b> | <b>Equipment</b><br>n/a: standard<br>A: Autocollimation principle (single lens) for positioning tasks<br>B: Housing model with two M3 threaded sleeves, brass<br>F: Permanently set range<br>L: Long light spot<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<br>X: extended model<br>HF: Suppression of HF illumination (LED)  |
| <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<br>6: auto-teach   |
| <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) |
| <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>W: warning output<br>X: pin not used<br>8: activation input (activation with high signal)<br>9: deactivation input (deactivation with high signal)<br>T: teach-in via cable                                 |
| <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-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)<br>200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (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:



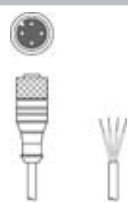

- ⌘ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- ⌘ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)

## Further information


- The push-pull switching outputs must not be connected in parallel.
- 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

## Accessories


### Connection technology - Connection cables

|  | Part no. | Designation        | Article          | Description  |
|--|----------|--------------------|------------------|--|
|  | 50130652 | KD U-M12-4A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC  |
|  | 50130690 | KD U-M12-4W-V1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC |

### Mounting technology - Rod mounts

|  | Part no. | Designation  | Article         | Description  |
|--|----------|--------------|-----------------|--|
|  | 50117829 | BTP 200M-D12 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |

**Accessories**

|   | <b>Part no.</b> | <b>Designation</b> | <b>Article</b>  | <b>Description</b>   |
|---|-----------------|--------------------|-----------------|--|
|  | 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 |

**Note**

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