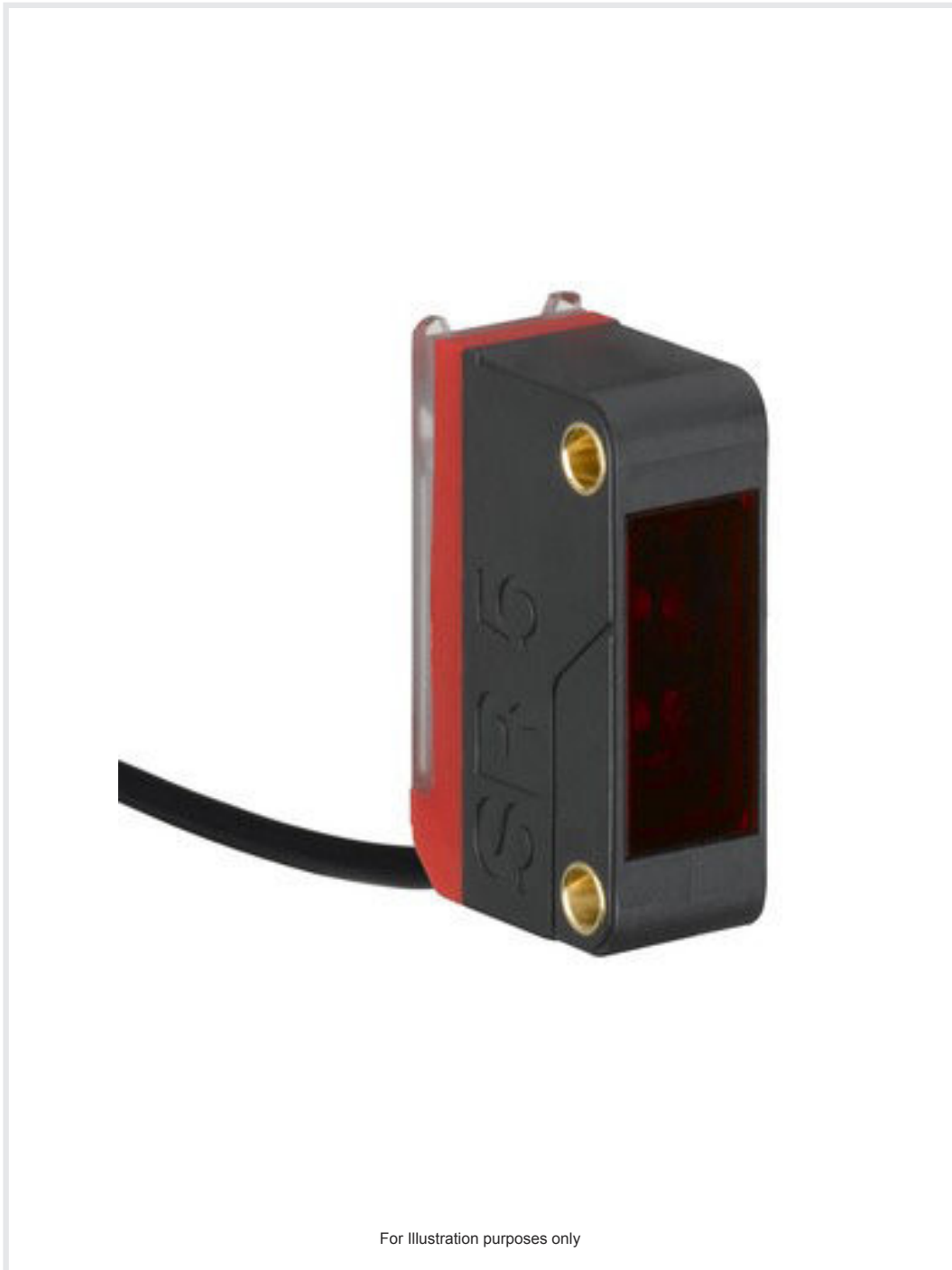


## Technical data sheet

### Throughbeam photoelectric sensor transmitter

Part no.: 50145237

LS5B



For illustration purposes only

#### Contents

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



## Technical data

### Basic data

|                     |                       |
|---------------------|-----------------------|
| Series              | 5B                    |
| Operating principle | Throughbeam principle |
| Device type         | Transmitter           |

### Optical data

|                          |                                      |
|--------------------------|--------------------------------------|
| Operating range          | 0 ... 10 m                           |
| Operating range          | Guaranteed operating range           |
| Operating range limit    | Typical operating range              |
| Operating range limit    | 0 ... 15 m                           |
| Light source             | LED, Red                             |
| Wavelength               | 645 nm                               |
| Transmitted-signal shape | Pulsed                               |
| LED group                | Exempt group (in acc. with EN 62471) |

### 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                            |

### Time behavior

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

### Connection

#### Connection 1

|                      |                      |
|----------------------|----------------------|
| Function             | Voltage supply       |
| Type of connection   | Cable                |
| Cable length         | 2,000 mm             |
| Sheathing material   | PVC                  |
| Cable color          | Black                |
| Number of conductors | 3 -wire              |
| Wire cross section   | 0.14 mm <sup>2</sup> |

### Mechanical data

|                            |                              |
|----------------------------|------------------------------|
| Dimension (W x H x L)      | 11 mm x 32.4 mm x 20 mm      |
| Housing material           | Plastic                      |
| Plastic housing            | PC-ABS                       |
| Lens cover material        | Plastic                      |
| Net weight                 | 44 g                         |
| Housing color              | Black                        |
|                            | Red                          |
| Type of fastening          | Two M3 threaded sleeves      |
|                            | 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

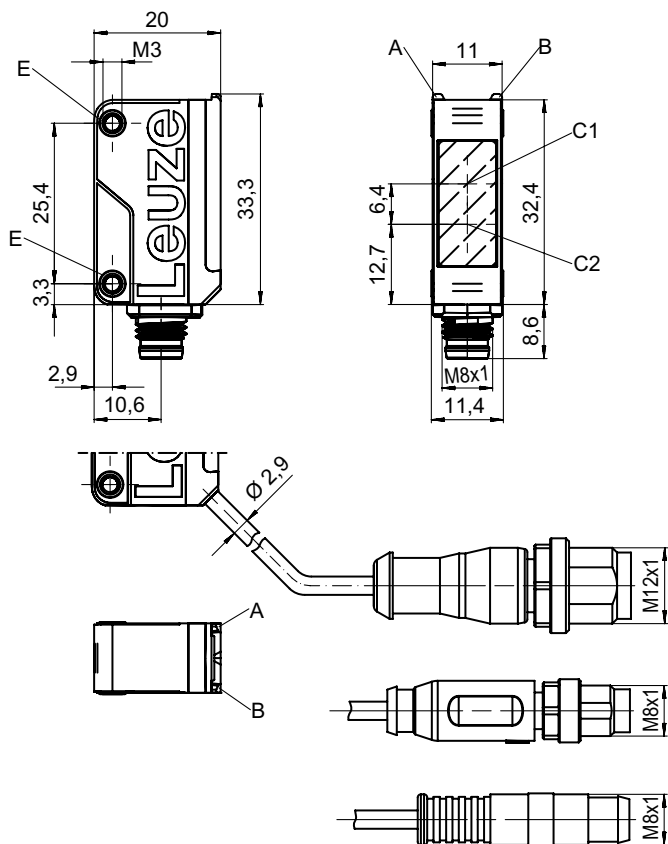
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Certifications       | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### 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 |
| ETIM 5.0              | EC002716 |
| ETIM 6.0              | EC002716 |
| ETIM 7.0              | EC002716 |
| ETIM 8.0              | EC002716 |
| ETIM 9.0              | EC002716 |

# Dimensioned drawings

All dimensions in millimeters



- A Green LED
- B Yellow LED
- C1 Receiver
- C2 Transmitter
- E Threaded sleeve

## Electrical connection

### Connection 1

|                      |                      |
|----------------------|----------------------|
| Function             | Voltage supply       |
| Type of connection   | Cable                |
| Cable length         | 2,000 mm             |
| Sheathing material   | PVC                  |
| Cable color          | Black                |
| Number of conductors | 3 -wire              |
| Wire cross section   | 0.14 mm <sup>2</sup> |

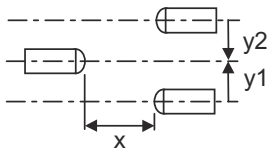
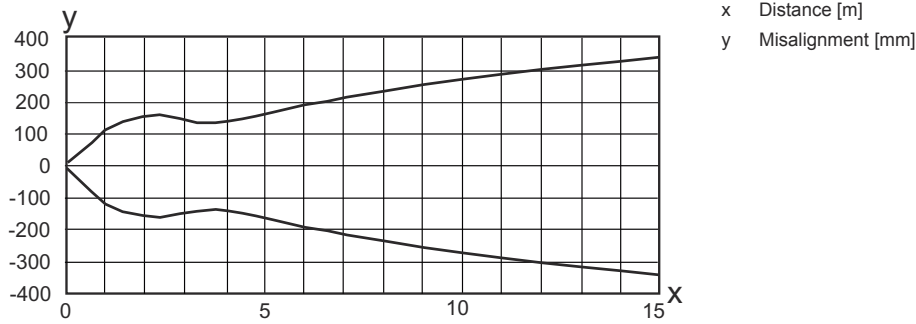
### Conductor color

### Conductor assignment

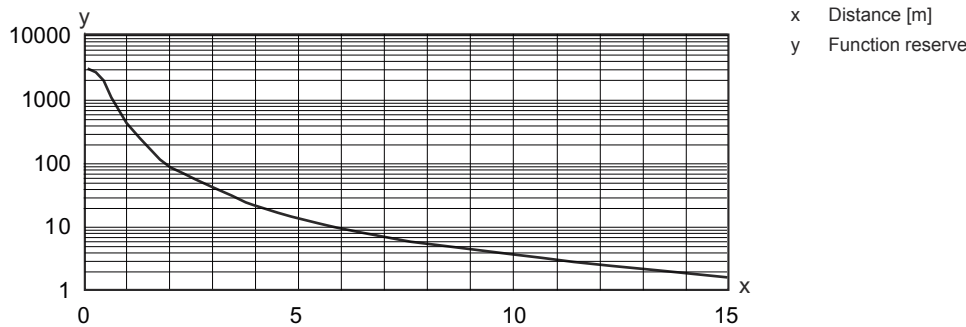
|              |      |
|--------------|------|
| Brown        | V+   |
| Black / Blue | n.c. |
| Blue         | GND  |

# Diagrams

## Typ. response behavior




## Typ. function reserve






## Operation and display

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

## Suitable receivers

|  | Part no. | Designation | Article                                   | Description  |
|--|----------|-------------|---|--|
|  | 50145231 | LE5B/2      | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 1 Piece(s)<br>Switching output 1: Transistor, NPN, Light switching (dark switching by reversing polarity of UB)<br>Switching frequency: 900 Hz<br>Connection: Cable, 2,000 mm, 3 -wire |

## Suitable receivers

|  | Part no. | Designation | Article                                   | Description  |
|--|----------|-------------|---|--|
|  | 50145234 | LE5B/4      | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 1 Piece(s)<br>Switching output 1: Transistor, PNP, Light switching (dark switching by reversing polarity of UB)<br>Switching frequency: 900 Hz<br>Connection: Cable, 2,000 mm, 3 -wire |
|  | 50145228 | LE5B/N      | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 1 Piece(s)<br>Switching output 1: Transistor, NPN, Dark switching (light switching by reversing polarity of UB)<br>Switching frequency: 900 Hz<br>Connection: Cable, 2,000 mm, 3 -wire |
|  | 50145229 | LE5B/P      | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 1 Piece(s)<br>Switching output 1: Transistor, PNP, Dark switching (light switching by reversing polarity of UB)<br>Switching frequency: 900 Hz<br>Connection: Cable, 2,000 mm, 3 -wire |

## Part number code


Part designation: AAA5B D-E.FF/GG.HH-JJ

|              |   |
|--------------|---|
| <b>AAA5B</b> | <b>Operating principle / construction</b><br>LS5B: Throughbeam photoelectric sensor transmitter<br>LE5B: Throughbeam photoelectric sensor receiver<br>PRK5B: Retro-reflective photoelectric sensor with polarization filter<br>HT5B: Diffuse reflection sensor with background suppression<br>ET5B: Energetic diffuse reflection sensor   |
| <b>D</b>     | <b>Light type</b><br>n/a: red light<br>I: infrared light  |
| <b>E</b>     | <b>Preset range (optional)</b><br>n/a: operating range acc. to data sheet<br>xxxF: Preset range [mm]  |
| <b>FF</b>    | <b>Equipment</b><br>1: 270° potentiometer<br>D: Detection of stretch-wrapped objects<br>M: Detection of semi-transparent media and transparent films<br>XL: Extra long light spot<br>n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable<br>n/a with ET / HT: range adjustable via 8-turn potentiometer |
| <b>GG</b>    | <b>Switching output / Function</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>9: deactivation input (deactivation with high signal)<br>X: pin not used  |

## Part number code

|    |   |
|----|---|
| HH | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 3-wire<br>M8: M8 connector, 4-pin (plug)<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (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>M8.1: Snap-in, M8 connector, 4-pin (plug)<br>M8.3: M8 connector, 3-pin (plug) |
| JJ | <b>Version</b><br>Y1: mounting holes without threaded sleeve  |


### Note

|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>↪ A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a>.</li> </ul> |
|--|---|


## Notes



### Observe intended use!



|   |   |
|---|---|
|  | <ul style="list-style-type: none"> <li>↪ This product is not a safety sensor and is not intended as personnel protection.</li> <li>↪ The product may only be put into operation by competent persons.</li> <li>↪ Only use the product in accordance with its intended use.</li> </ul> |
|---|---|

### For UL applications:

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>↪ Only for use in "class 2" circuits</li> <li>↪ 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)</li> </ul> |
|--|--|



## 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 |
|   | 50124651 | BT 205M-10SET | Mounting device set | 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  |
|---|----------|--------------|-----------------|--|
|  | 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   |
|  | 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.