

# Technical data sheet

## Throughbeam photoelectric sensor receiver

Part no.: 50145236

LE5B/P.Y1

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For illustration purposes only



# Technical data

## Basic data

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

## Optical data

|                 |                 |
|-----------------|-----------------|
| Operating range | see transmitter |
|-----------------|-----------------|

## Electrical data

|                    |   |
|--------------------|---|
| Protective circuit | Polarity reversal protection<br>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 | 1 Piece(s) |
|-------------------------------------|------------|

| Switching outputs       |  |
|-------------------------|--|
| Type                    | Digital switching output                       |
| Voltage type            | DC   |
| Switching current, max. | 50 mA  |
| Switching voltage       | high: $\geq (U_B - 2.5V)$<br>low: $\leq 2.5 V$ |

| Switching output 1  |   |
|---------------------|---|
| Switching element   | Transistor, NPN   |
| Switching principle | Dark switching<br>(light switching by reversing polarity of $U_B$ ) |

## Time behavior

|                     |         |
|---------------------|---------|
| Switching frequency | 900 Hz  |
| Response time       | 0.56 ms |
| Readiness delay     | 300 ms  |

## Connection

| Number of connections | 1 Piece(s)           |
|-----------------------|----------------------|
| Connection 1          |                      |
| Function              | Signal OUT           |
|                       | 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<br>Red  |
| Type of fastening     | Through-hole mounting<br>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 ... 60 °C |
| Ambient temperature, storage   | -40 ... 70 °C |

## Certifications

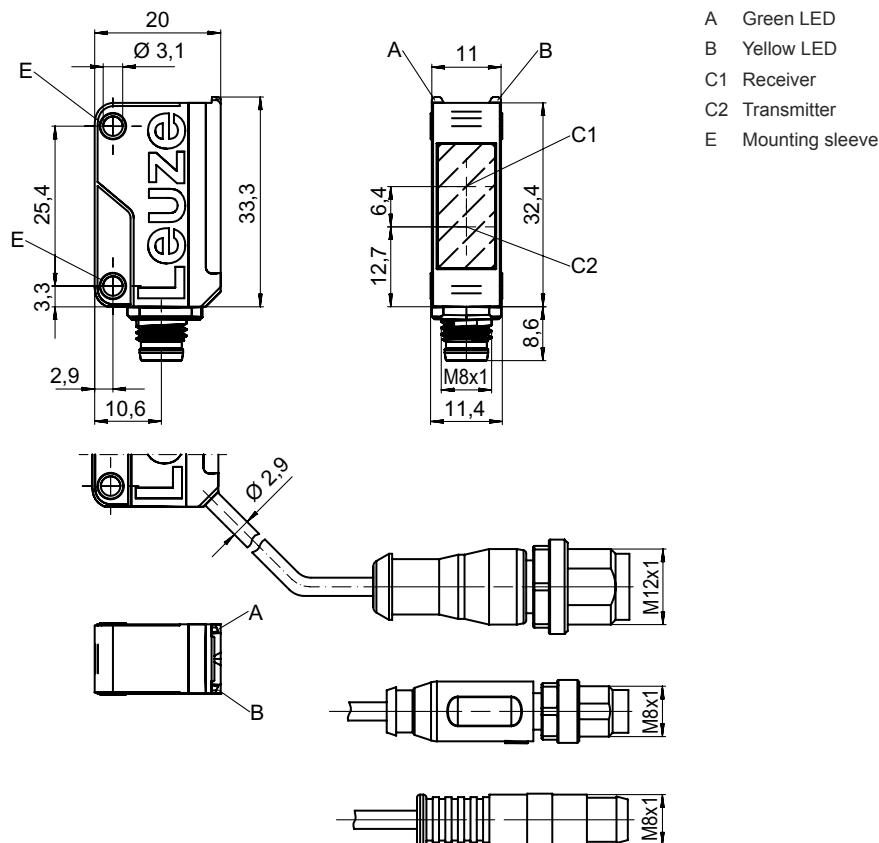
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

## 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

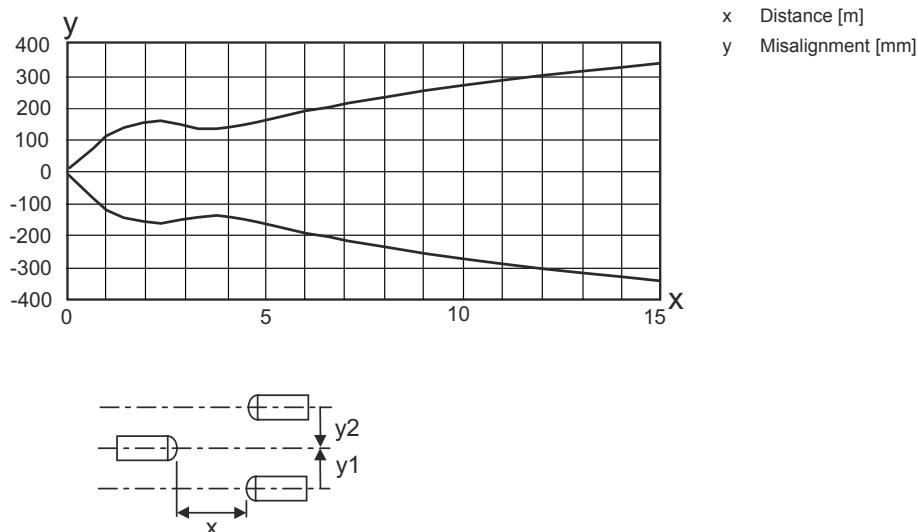
### Connection 1

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

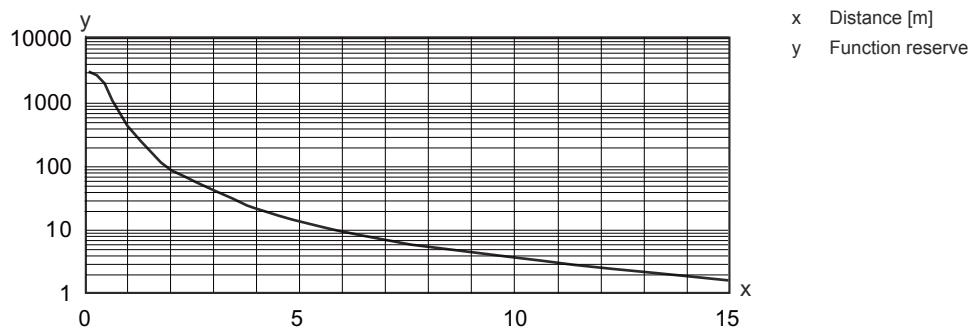
| Conductor color | Conductor assignment |
|-----------------|----------------------|
| Brown           | V+                   |
| Blue            | GND                  |
| Black           | OUT 1                |

## Diagrams

### Typ. response behavior



### Typ. function reserve



## Operation and display

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

## Suitable transmitters

| Part no. | Designation | Operating range<br>Operating range<br>limit | Description   |
|----------|-------------|---|---|
| 50145242 | LS5B.Y1     | 0 ... 10 m<br>0 ... 15 m                    | Operating range limit: 0 ... 15 m<br>Light source: LED, Red<br>Supply voltage: DC<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<br>PP: Power PinPoint® LED  |
| <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   |
| <b>HH</b>    | <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>200-M8.1: Cable, length 200 mm with snap-in M8 connector, 4-pin (plug)<br>M8.3: M8 connector, 3-pin (plug) |
| <b>JJ</b>    | <b>Version</b><br>Y1: mounting holes without threaded sleeve   |

## Note

|  |  |
|--|--|
|  | ↳ 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> . |
|--|--|

## Notes

|  |   |
|--|---|
|  | <b>Observe intended use!</b>  |
|  | <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: CYJV7 or PVVA/PVVA7)</li> </ul> |
|--|--|

## Accessories

### Mounting technology - Mounting brackets

| Part no.  | Designation | Article       | Description   |
|---|-------------|---------------|---|
|  | 50118542    | BT 200M.5     | Mounting bracket<br>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<br>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                                   |

### Mounting technology - Rod mounts

| Part no.  | Designation | Article      | Description   |
|---|-------------|--------------|---|
|   | 50117829    | BTP 200M-D12 | Mounting system<br>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<br>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.