# Technical data sheet

## Throughbeam photoelectric sensor transmitter

### Part no.: 50145240

### LS5B/9X-200-M12



Figure can vary

**Contents**

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

# Technical data

**Leuze**

## Basic data

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

## Special version

| | |
|---|---|
| **Special version** | Deactivation input |

## Optical data

| | |
|---|---|
| **Operating range** | Guaranteed operating range |
| **Operating range** | 0 ... 10 m |
| **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 |

### Inputs

| | |
|---|---|
| **Number of deactivation inputs** | 1 Piece(s) |

#### Deactivation inputs

##### Deactivation input 1

| | |
|---|---|
| **Assignment** | Connection 1, pin 4 |
| **Active switching state** | High |

## Time behavior

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

## Connection

### Connection 1

| | |
|---|---|
| **Function** | Signal IN |
| | Voltage supply |
| **Type of connection** | Cable with connector |
| **Cable length** | 200 mm |
| **Sheathing material** | PVC |
| **Cable color** | Black |
| **Number of conductors** | 3 -wire |
| **Wire cross section** | 0.14 mm² |
| **Thread size** | M12 |
| **Type** | Male |
| **Material** | Plastic |
| **No. of pins** | 4 -pin |
| **Encoding** | A-coded |

## 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** | 40 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 |
| **ETIM 5.0** | EC002716 |
| **ETIM 6.0** | EC002716 |
| **ETIM 7.0** | EC002716 |
| **ETIM 8.0** | EC002716 |

# Dimensioned drawings

All dimensions in millimeters

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

# Electrical connection

| | |
|---|---|
| **Function** | Signal IN |
| | Voltage supply |
| **Type of connection** | Cable with connector |
| **Cable length** | 200 mm |
| **Sheathing material** | PVC |
| **Cable color** | Black |
| **Number of conductors** | 3 -wire |
| **Wire cross section** | 0.14 mm² |
| **Thread size** | M12 |
| **Type** | Male |
| **Material** | Plastic |
| **No. of pins** | 4 -pin |
| **Encoding** | A-coded |

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

# Diagrams

# Leuze

## Typ. response behavior

x    Distance [m]

y    Misalignment [mm]



## Typ. function reserve

x    Distance [m]
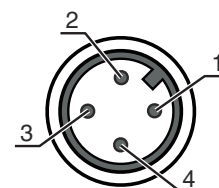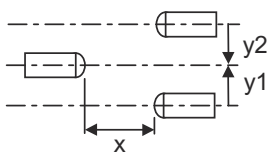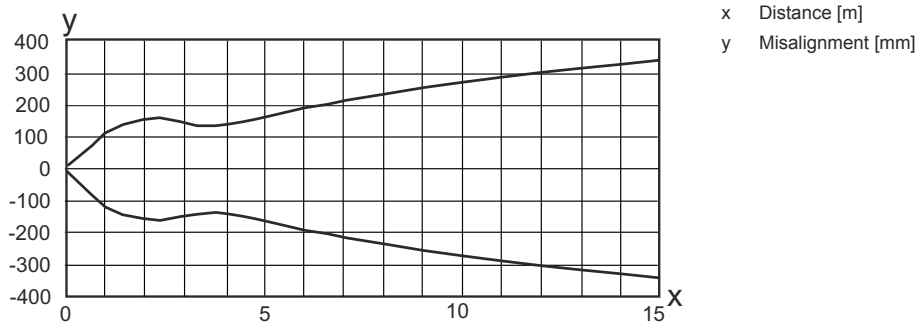
y    Function reserve
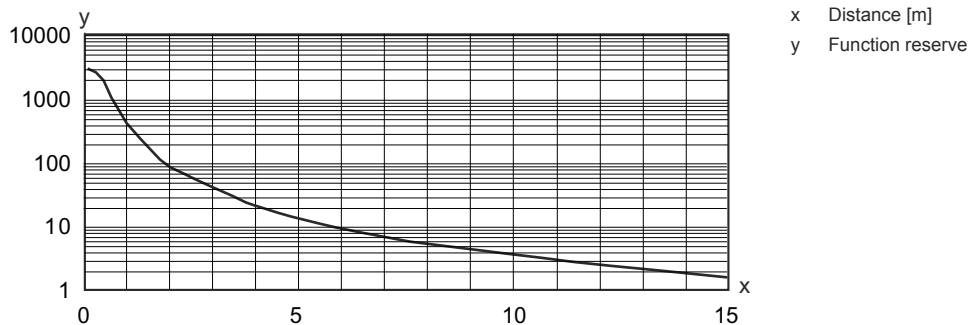


# Operation and display

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

# Suitable receivers

| | Part no. | Designation | Article | Description |
| --- | --- | --- | --- | --- |
| | 50145233 | LE5B/4X-200-M12 | 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<br>Switching frequency: 900 Hz<br>Connection: Cable with connector, 200 mm, M12, Plastic, 3 -wire, 4 -pin |

# Leuze

# Part number code

Part designation: **AAA5B d.EE/ ff.GG-hh**

| AAA5B | **Operating principle / construction**<br>LS5B: Throughbeam photoelectric sensor transmitter<br>LE5B: Throughbeam photoelectric sensor receiver<br>PRK5B: Retro-reflective photoelectric sensor with polarization filter |
|---|---|
| d | **Light type**<br>n/a: red light<br>I: infrared light |
| EE | **Equipment**<br>1: 270° potentiometer<br>D: Detection of stretch-wrapped objects |
| ff | **Switching output / Function**<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>X: pin not used<br>9: deactivation input (deactivation with high signal) |
| GG | **Version**<br>Y1: mounting holes without threaded sleeve |
| hh | **Electrical connection**<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) |

| 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.<br>✎ The product may only be put into operation by competent persons.<br>✎ Only use the product in accordance with its intended use. |

| For UL applications: |
|---|
| ✎ Only for use in "class 2" circuits<br>✎ 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) |

# Accessories

**Leuze**

## 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 - 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 |

## 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 |

# Accessories

**Leuze**

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