

Technical data sheet

Throughbeam photoelectric sensor transmitter

Part no.: 50149741

LS5B/XX-200-M12

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For illustration purposes only



Technical data

Basic data

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

Optical data

| | |
|--------------------------|---|
| Operating range | 0 ... 10 m (guaranteed operating range) |
| Operating range limit | 0 ... 15 m (typical operating range) |
| 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

| | |
|-----------------------|----------------------|
| Number of connections | 1 Piece(s) |
| 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 mm ² |
| 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 |
| 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



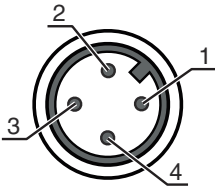
Electrical connection

Connection 1

| | |
|----------------------|----------------------|
| Function | Signal 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 | n.c. |



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 | Operating range Operating range limit | Description |
|--|----------|-----------------|---|---|
|  | 50145230 | LE5B/2X-200-M12 | 0 ... 10 m 0 ... 15 m | Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, NPN, Light switching (dark switching by reversing polarity of UB) Switching frequency: 900 Hz Connection: Cable with connector, 200 mm, M12, Plastic, 3 -wire, 4 -pin |

Suitable receivers

| | Part no. | Designation | Operating range Operating range limit | Description |
|--|----------|-----------------|---|---|
|  | 50145233 | LE5B/4X-200-M12 | 0 ... 10 m 0 ... 15 m | Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Light switching (dark switching by reversing polarity of UB) Switching frequency: 900 Hz Connection: Cable with connector, 200 mm, M12, Plastic, 3 -wire, 4 -pin |
| | 50149739 | LE5B/NX-200-M12 | 0 ... 10 m 0 ... 15 m | Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, NPN, Dark switching (light switching by reversing polarity of UB) Switching frequency: 900 Hz Connection: Cable with connector, 200 mm, M12, Plastic, 3 -wire, 4 -pin |
| | 50149740 | LE5B/PX-200-M12 | 0 ... 10 m 0 ... 15 m | Supply voltage: DC Digital switching outputs: 1 Piece(s) Switching output 1: Transistor, PNP, Dark switching (light switching by reversing polarity of UB) Switching frequency: 900 Hz Connection: Cable with connector, 200 mm, M12, Plastic, 3 -wire, 4 -pin |

Part number code

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

| | |
|--------------|---|
| AAA5B | Operating principle / construction LS5B: Throughbeam photoelectric sensor transmitter LE5B: Throughbeam photoelectric sensor receiver PRK5B: Retro-reflective photoelectric sensor with polarization filter HT5B: Diffuse reflection sensor with background suppression ET5B: Energetic diffuse reflection sensor |
| D | Light type n/a: red light I: infrared light PP: Power PinPoint® LED |
| E | Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] |
| FF | Equipment 1: 270° potentiometer D: Detection of stretch-wrapped objects M: Detection of semi-transparent media and transparent films XL: Extra long light spot n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable n/a with ET / HT: range adjustable via 8-turn potentiometer |
| GG | Switching output / Function 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 9: deactivation input (deactivation with high signal) X: pin not used |

Part number code

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

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:



- Only for use in "class 2" circuits
- 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

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 Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC |
| | 50130690 | KD U-M12-4W-V1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC |

Accessories

Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|----------|---------------|---------------------|---|
|  | 50118542 | BT 200M.5 | Mounting bracket | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Adjustable Material: Stainless steel |
|  | 50124651 | BT 205M-10SET | Mounting device set | 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 |

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.