

## Technical data sheet

### Throughbeam photoelectric sensor

Part no.: 50129507

LS318BI/9D-M12

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- Electrical connection
- Diagrams
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Figure can vary



## Technical data

### Basic data

|                     |                       |
|---------------------|-----------------------|
| Series              | 318B                  |
| Operating principle | Throughbeam principle |
| Device type         | Transmitter           |

### Special version

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

### Optical data

|                          |                                      |
|--------------------------|--------------------------------------|
| Operating range          | Guaranteed operating range           |
| Operating range          | 0 ... 16 m                           |
| Operating range limit    | Typical operating range              |
| Operating range limit    | 0 ... 23 m                           |
| Light source             | LED, Infrared                        |
| LED light wavelength     | 850 nm                               |
| LED group                | Exempt group (in acc. with EN 62471) |
| Transmitted-signal shape | Pulsed                               |

### 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 ... 15 mA                            |

### Inputs

|                               |            |
|-------------------------------|------------|
| Number of deactivation inputs | 2 Piece(s) |
|-------------------------------|------------|

### Deactivation inputs

|                        |     |
|------------------------|-----|
| Deactivation input 1   |     |
| Active switching state | Low |

|                        |      |
|------------------------|------|
| Deactivation input 2   |      |
| Active switching state | High |

### Timing

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

### Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Signal IN      |
|                    | Voltage supply |
| Type of connection | Connector      |
| Thread size        | M12            |
| Type               | Male           |
| Material           | Plastic        |
| No. of pins        | 4 -pin         |
| Encoding           | A-coded        |

### Mechanical data

|                     |               |
|---------------------|---------------|
| Thread size         | M18 x 1 mm    |
| Dimension (Ø x L)   | 18 mm x 46 mm |
| Housing material    | Plastic, ABS  |
| Lens cover material | Plastic       |
| Net weight          | 20 g          |
| Housing color       | Black         |
|                     | Red           |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 1 Piece(s) |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 50 °C |
| Ambient temperature, storage   | -40 ... 70 °C |

### Certifications

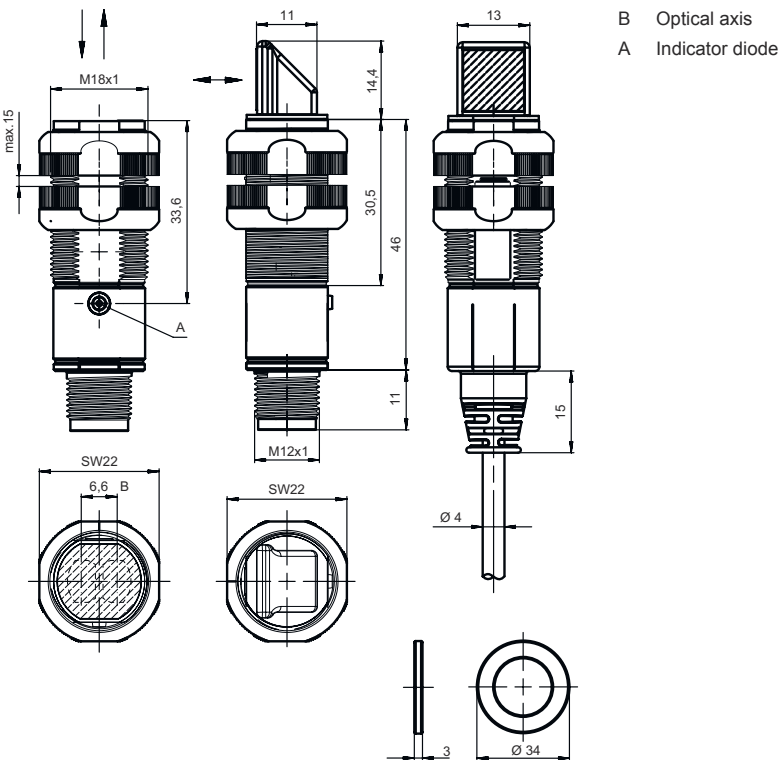
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Certifications       | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27270901 |
| eCl@ss 9.0            | 27270901 |
| ETIM 5.0              | EC002716 |
| ETIM 6.0              | EC002716 |

Dimensioned drawings

All dimensions in millimeters



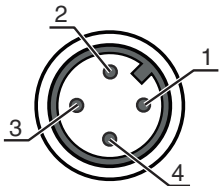
Electrical connection

Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Signal IN      |
|                    | Voltage supply |
| Type of connection | Connector      |
| Thread size        | M12            |
| Type               | Male           |
| Material           | Plastic        |
| No. of pins        | 4 -pin         |
| Encoding           | A-coded        |

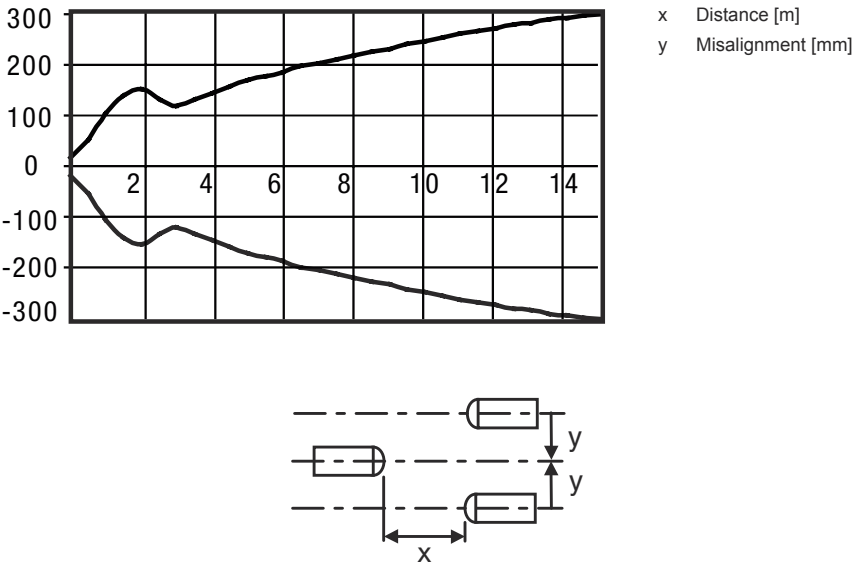
Pin Pin assignment

|   |     |
|---|-----|
| 1 | V+  |
| 2 | IN2 |
| 3 | GND |
| 4 | IN1 |



Diagrams

Typ. response behavior



Operation and display

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

Suitable receivers

|                                                                                     | Part no. | Designation   | Article                                   | Description                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|----------|---------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50116845 | LE318B/2N-M12 | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 2 Piece(s)<br>Switching output 1: Transistor, NPN, Light switching<br>Switching output 2: Transistor, NPN, Dark switching<br>Switching frequency: 500 Hz<br>Connection: Connector, M12, Plastic, 4 -pin |
|  | 50116847 | LE318B/4P-M12 | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m<br>Supply voltage: DC<br>Digital switching outputs: 2 Piece(s)<br>Switching output 1: Transistor, PNP, Light switching<br>Switching output 2: Transistor, PNP, Dark switching<br>Switching frequency: 500 Hz<br>Connection: Connector, M12, Plastic, 4 -pin |
|  | 50122549 | LE318B/PX-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, Dark switching<br>Switching frequency: 500 Hz<br>Connection: Connector, M12, Plastic, 4 -pin                                                         |

## Part number code

Part designation: **XXX318BY-AAAF.BB/CC-DDD**

|                |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>XXX318B</b> | <b>Operating principle</b><br>PRK: retro-reflective photoelectric sensor with polarization filter<br>ET: energetic diffuse reflection sensor<br>FT: diffuse reflection sensor with fading<br>LE: throughbeam photoelectric sensor receiver<br>LS: throughbeam photoelectric sensor transmitter                                                                                                                         |
| <b>Y</b>       | <b>Light type</b><br>n/a: red light<br>I: infrared light                                                                                                                                                                                                                                                                                                                                                               |
| <b>AAAF</b>    | <b>Preset range (optional)</b><br>n/a: operating range acc. to data sheet<br>xxxF: preset range [mm]                                                                                                                                                                                                                                                                                                                   |
| <b>BB</b>      | <b>Equipment</b><br>n/a: axial optics<br>W: 90° angular optics<br>3: teach-in via button<br>X: reinforced fading                                                                                                                                                                                                                                                                                                       |
| <b>CC</b>      | <b>Switching output / function (OUT1 = pin 4, OUT2 = pin 2):</b><br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>9: input for transmitter deactivation (deactivation with HIGH signal)<br>D: input for transmitter deactivation (deactivation with LOW signal)<br>X: pin not used |
| <b>DDD</b>     | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 4-wire<br>M12: M12 connector, 4-pin (plug)<br>5000: cable, standard length 5000 mm, 4-wire<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:



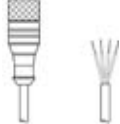
- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)

## Further information

- 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>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>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                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------|-------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50113548 | BT D18M.5   | Mounting bracket | Diameter, inner: 18 mm<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: Stainless steel |

### Mounting technology - Rod mounts

|                                                                                    | Part no. | Designation  | Article         | Description                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------|----------|--------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117490 | BTU D18M-D12 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<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.