

## Technical data sheet

### Throughbeam photoelectric sensor transmitter

Part no.: 50116854

LS318B.W/9D



For illustration purposes only

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## Technical data

### Basic data

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

### Special version

|                 |                      |
|-----------------|----------------------|
| Special version | 90° - angular optics |
|                 | Deactivation input   |

### Optical data

|                          |                                          |
|--------------------------|------------------------------------------|
| Operating range          | 0 ... 5.5 m (guaranteed operating range) |
| Operating range limit    | 0 ... 8 m (typical operating range)      |
| Light source             | LED, Red                                 |
| Wavelength               | 620 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 ... 15 mA                            |

#### Inputs

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

#### Deactivation inputs

|      |                    |
|------|--------------------|
| Type | Deactivation input |
|------|--------------------|

#### Deactivation input 1

|                        |     |
|------------------------|-----|
| Active switching state | Low |
|------------------------|-----|

#### Deactivation input 2

|                        |      |
|------------------------|------|
| Active switching state | High |
|------------------------|------|

### Time behavior

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

### Connection

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

#### Connection 1

|                      |                     |
|----------------------|---------------------|
| Function             | Signal IN           |
|                      | Voltage supply      |
| Type of connection   | Cable               |
| Cable length         | 2,000 mm            |
| Sheathing material   | PUR                 |
| Cable color          | Black               |
| Number of conductors | 4 -wire             |
| Wire cross section   | 0.2 mm <sup>2</sup> |

### Mechanical data

|                     |                 |
|---------------------|-----------------|
| Dimension (Ø x L)   | 18 mm x 60.4 mm |
| Thread size         | M18 x 1 mm      |
| Housing material    | Plastic         |
| Plastic housing     | ABS             |
| Lens cover material | Plastic         |
| Net weight          | 70 g            |
| Housing color       | Black           |
|                     | Red             |

### Operation and display

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

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage   | -40 ... 70 °C |

### Certifications

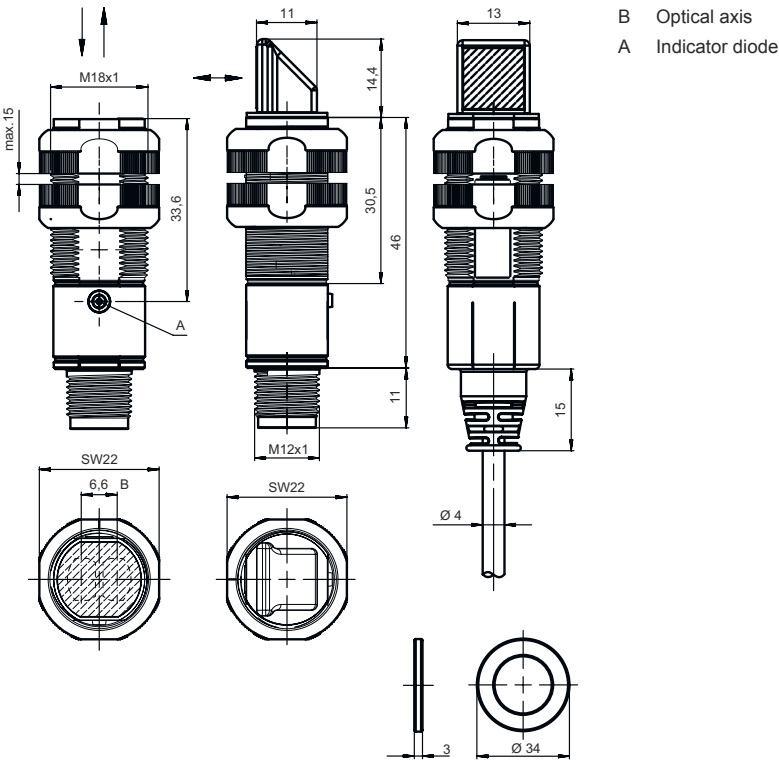
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### 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          |
| Cable length         | 2,000 mm       |
| Sheathing material   | PUR            |
| Cable color          | Black          |
| Number of conductors | 4 -wire        |
| Wire cross section   | 0.2 mm²        |

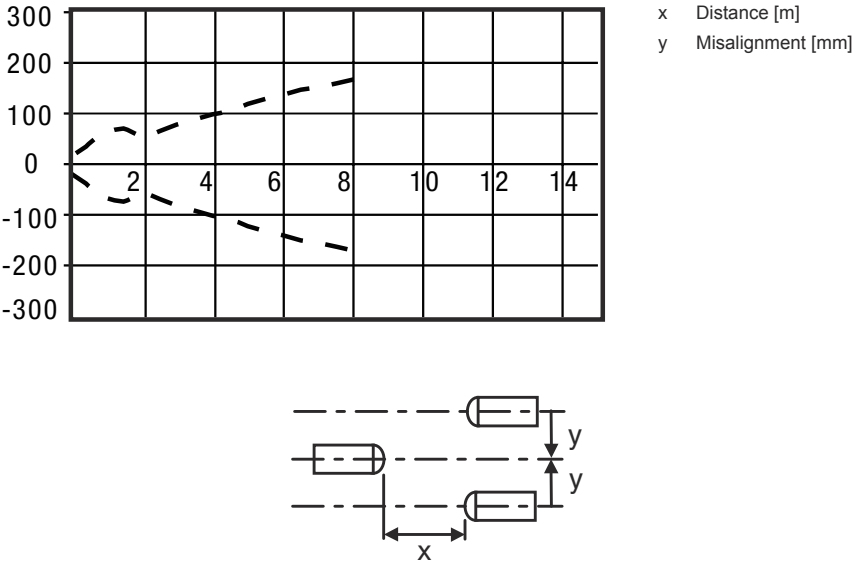
Conductor color

Conductor assignment

|       |      |
|-------|------|
| Brown | V+   |
| White | IN 2 |
| Blue  | GND  |
| Black | IN 1 |

Diagrams

Typ. response behavior



Operation and display

| LED | Display                  | Meaning                     |
|-----|--------------------------|-----------------------------|
| 1   | Green, continuous light  | Transmitted beam not active |
|     | Yellow, continuous light | Transmitted beam active     |

Suitable receivers

|  | Part no. | Designation | Operating range<br>Operating range<br>limit | Description                                                                                                                                                                                                                                                                                |
|--|----------|-------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50116848 | LE318B.W/2N | 0 ... 5.5 m<br>0 ... 8 m                    | Special version: 90° - angular optics<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: Cable, 2,000 mm, 4 -wire |
|  | 50116850 | LE318B.W/4P | 0 ... 5.5 m<br>0 ... 8 m                    | Special version: 90° - angular optics<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: Cable, 2,000 mm, 4 -wire |

Part number code

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

|         |                                                                                                                                                                                                                                                                                                |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XXX318B | <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 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part number code

|             |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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

### 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 |
|                                                                                  |          |              |                 |                                                                                                                                                                                                                          |

### Mounting technology - Other

|                                                                                                                                                                           | Part no.    | Designation | Article   | Description                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br> | 50117258    | BT 318P-LS  | Fastening | Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Rigid<br>Material: Plastic<br>Shock absorber: No                           |
|                                                                                                                                                                           | 50121904 ** | BT318B-OM   | Fastening | Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Swiveling, Adjustable, Turning<br>Material: Plastic<br>Shock absorber: No |

\*\* Included in delivery contents

#### Note



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