

Technical data sheet

Throughbeam photoelectric sensor

Part no.: 50116852

LS318B/9D

Contents

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



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 ... 10 m |
| Operating range limit | Typical operating range |
| Operating range limit | 0 ... 15 m |
| Light source | LED, Red |
| LED light wavelength | 620 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 | Low |
| Active switching state | |

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

Outputs

Switching outputs

| | |
|-------------------|------------------------|
| Switching voltage | high: $\geq(U_B - 2V)$ |
| | Low: $\leq 2V$ |

Switching output 1

| | |
|-------------------|--|
| Switching element | Transistor |
| Function | Deactivation input (deactivation with high signal) |

Switching output 2

| | |
|-------------------|---|
| Switching element | Transistor |
| Function | Deactivation input (deactivation with low signal) |

Timing

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

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 mm ² |

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 | 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

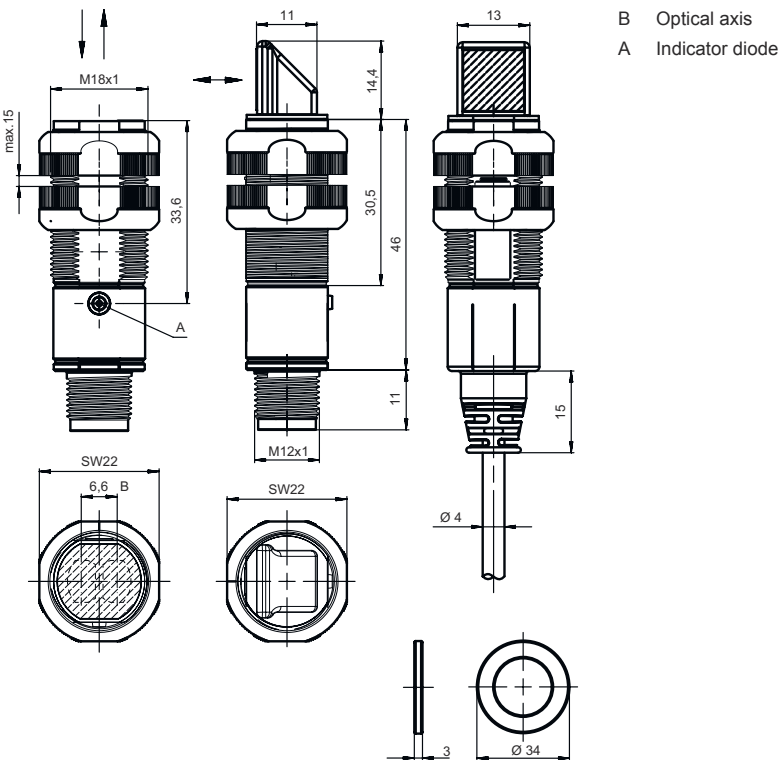
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

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

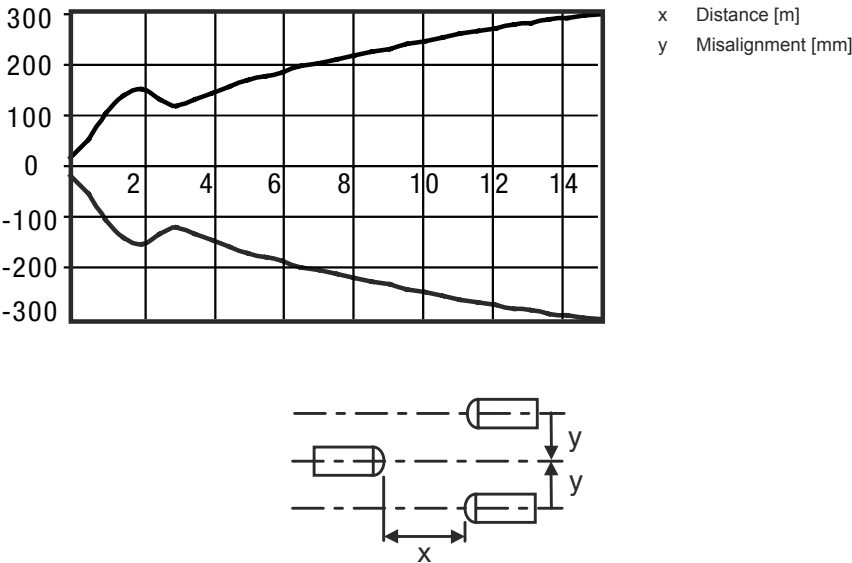
Conductor color

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 | Operational readiness |
| | Yellow, continuous light | Transmitted beam active |

Suitable receivers

| | Part no. | Designation | Article | Description |
|--|----------|-------------|---|--|
| | 50116844 | LE318B/2N | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, NPN, Light switching Switching output 2: Transistor, NPN, Dark switching Switching frequency: 500 Hz Connection: Cable, 2,000 mm, 4 -wire |
| | 50116846 | LE318B/4P | Throughbeam photoelectric sensor receiver | Operating range limit: 0 ... 15 m Supply voltage: DC Digital switching outputs: 2 Piece(s) Switching output 1: Transistor, PNP, Light switching Switching output 2: Transistor, PNP, Dark switching Switching frequency: 500 Hz Connection: Cable, 2,000 mm, 4 -wire |

Part number code

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

| | |
|---------|--|
| XXX318B | Operating principle PRK: retro-reflective photoelectric sensor with polarization filter ET: energetic diffuse reflection sensor FT: diffuse reflection sensor with fading LE: throughbeam photoelectric sensor receiver LS: throughbeam photoelectric sensor transmitter |
| Y | Light type n/a: red light I: infrared light |

Part number code

| | |
|-------------|--|
| AAAF | Preset range (optional) n/a: operating range acc. to data sheet xxxF: preset range [mm] |
| BB | Equipment n/a: axial optics W: 90° angular optics 3: teach-in via button X: reinforced fading |
| CC | Switching output / function (OUT1 = pin 4, OUT2 = pin 2): 4: PNP transistor output, light switching P: PNP transistor output, dark switching 2: NPN transistor output, light switching N: NPN transistor output, dark switching 9: input for transmitter deactivation (deactivation with HIGH signal) D: input for transmitter deactivation (deactivation with LOW signal) X: pin not used |
| DDD | Electrical connection n/a: cable, standard length 2000 mm, 4-wire M12: M12 connector, 4-pin (plug) 5000: cable, standard length 5000 mm, 4-wire 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.

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 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: Stainless steel |
| | | | | |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|--|----------|--------------|-----------------|--|
|  | 50117490 | BTU D18M-D12 | Mounting system | Design of mounting device: Mounting system Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |
| | | | | |

Mounting technology - Other

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

** 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.