

L 318 B

Throughbeam photoelectric sensors

en 04-2013/01 50116754

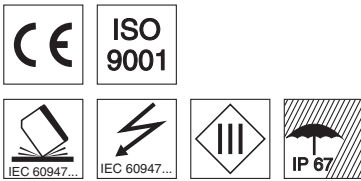


0 ... 15m
0 ... 8m
(with 90° angular optics)



- Throughbeam photoelectric sensor with clearly visible red light and high performance reserve
- Axial and 90° light beam gate for flexible integration
- Fast alignment through *brightVision*®
- Simple fine adjustment via *omni-mount*
- Embedded mounting option
- Robust plastic housing acc. to IP 67 for industrial application
- Deactivation output for testing and inter-linking of the sensor
- Complementary outputs for light/dark switching

We reserve the right to make changes • DS_L318B_en_50116754.fm

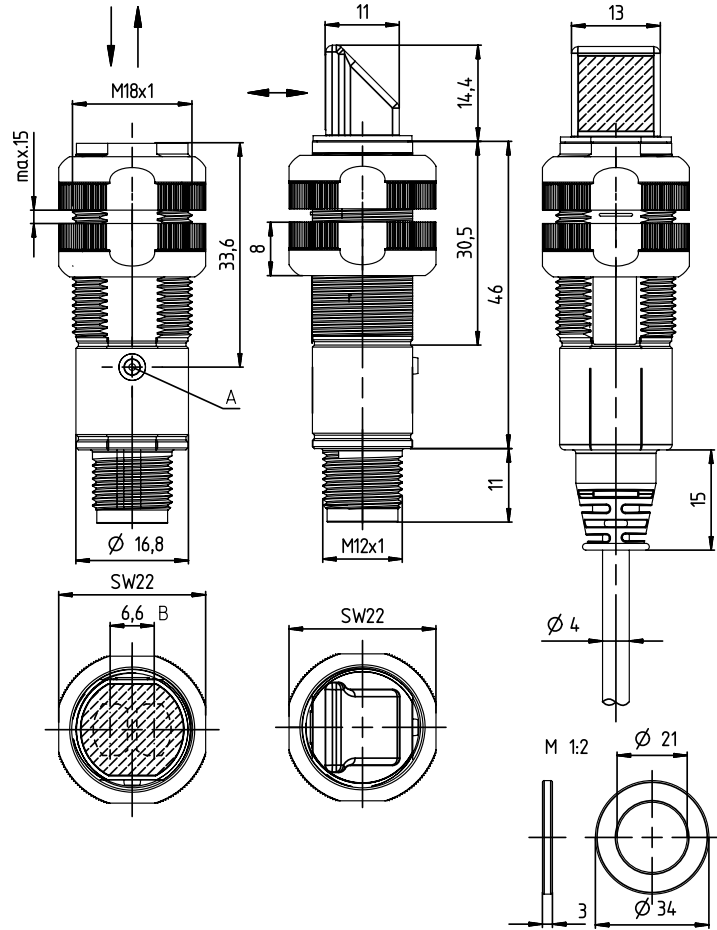


Accessories:

(available separately)

- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

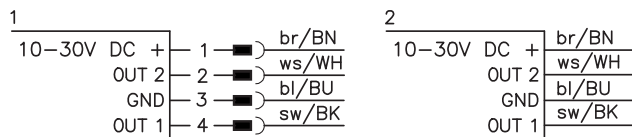
Dimensioned drawing



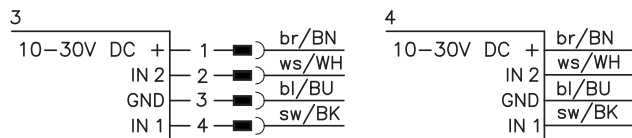
A Indicator diode
B Optical axis

Electrical connection

Receiver



Transmitter



Specifications

Optical data

Typ. operating range limit ¹⁾ axial optics: 0 ... 15 m 90° optics 0 ... 8 m
 Operating range ²⁾ axial optics: 0 ... 10 m 90° optics 0 ... 5.5 m
 Light source LED (modulated light)
 Wavelength 620nm (visible red light)

Timing

Switching frequency 500Hz
 Response time 1 ms
 Delay before start-up ≤ 300ms

Electrical data

Operating voltage U_B 10 ... 30VDC
 Residual ripple ≤ 15% of U_B
 Open-circuit current ≤ 15mA
 Switching output .../4P... 2 PNP transistor outputs
 pin 2: PNP dark switching, pin 4: PNP light switching
 .../2N... 2 NPN transistor outputs
 pin 2: NPN dark switching, pin 4: NPN light switching
 2 deactivation inputs
 pin 2: transmitter active when not connected or with HIGH signal
 pin 4: transmitter active when not connected or with LOW signal
 Switching input.../9D...
 Signal voltage high/low $\geq (U_B - 2V) \leq 2V$
 Output current max. 100mA ³⁾

Indicators

Green LED ready
 Yellow LED light path free
 Yellow LED, flashing light path free, no performance reserve

Mechanical data

Housing plastic
 Optics cover plastic
 Weight 70g (cable), 20g (M12)
 Connection type M12 connector, 4-pin
 cable 2m, 4x0.20mm²

Environmental data

Ambient temp. (operation/storage) -40°C ... +60°C / -40°C ... +70°C
 Protective circuit ⁴⁾ 2, 3
 VDE safety class III
 Protection class IP 67
 Light source exempt group (in acc. with EN 62471)
 Standards applied IEC 60947-5-2

1) Typ. operating range limit: max. attainable range without performance reserve
 2) Operating range: recommended range with performance reserve
 3) Sum of the output currents for both outputs, 50mA when ambient temperatures > 40°C
 4) 2=polarity reversal protection, 3=short circuit protection for all outputs

Tables

Axial optics:

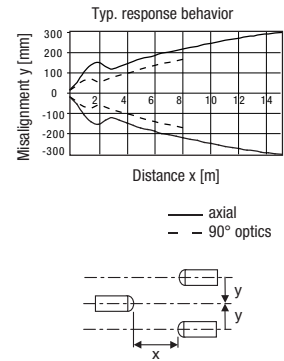
0	10.0	15.0
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90° optics:

0	5.5	8.0
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Operating range [m]
 Typ. operating range limit [m]

Diagrams



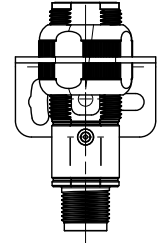
Remarks

- **Approved purpose:**
 This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

Mounting options

Standard mounting

Alignment of the supplied mounting nuts with flat side towards the mounting sheet.
Mounting bracket BT D18M.5 is recommended for standard mounting.

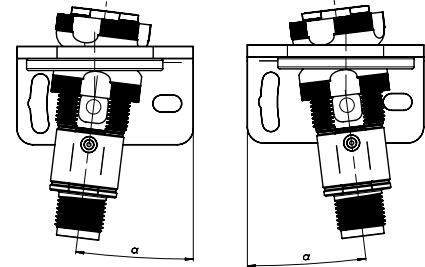


omni-mount

omni-mount makes fine adjustment of the sensors possible in a very simple and economical manner. For this type of mounting, the mounting nuts are used with the round side towards the mounting device. The mounting sheet must have a bore hole of approx. 21 mm in diameter. The special molding of the mounting nuts together with the spacer disc included in the delivery contents allows form-locking fastening of the sensors at different adjustment angles. The maximum possible tilt angle depends on the thickness of the mounting sheet. Mounting bracket BT D21M is recommended for *omni-mount*.

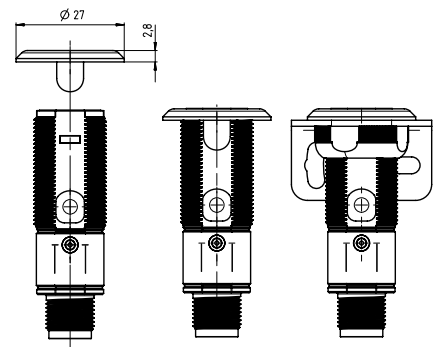
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm*)	+/- 8°

*) Corresponds to the thickness of the BT D21M mounting bracket



Embedded mounting

Embedded mounting, e.g. into a materials handling belt, is possible via the BT 318P-LS mounting support. The supports can be used either for fastening the axial sensors or for sensors with 90° optics.



Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

			Designation	Part no.
Sensors with axial optics				
Transmitter	With M 12 connector	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 318B/9D-M12	50116853
	With cable, 2m	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 318B/9D	50116852
Receiver	With M 12 connector	Pin 4: PNP light switching, pin 2: PNP dark switching	LE 318B/4P-M12	50116847
		Pin 4: NPN light switching, pin 2: NPN dark switching	LE 318B/2N-M12	50116845
	With cable, 2m	Pin 4: PNP light switching, pin 2: PNP dark switching	LE 318B/4P	50116846
		Pin 4: NPN light switching, pin 2: NPN dark switching	LE 318B/2N	50116844
Sensors with 90° angular optics				
Transmitter	With M 12 connector	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 318B.W/9D-M12	50116855
	With cable, 2m	2 deactivation inputs (pin 4 = IN1, pin 2 = IN2)	LS 318B.W/9D	50116854
Receiver	With M 12 connector	Pin 4: PNP light switching, pin 2: PNP dark switching	LE 318B.W/4P-M12	50116851
		Pin 4: NPN light switching, pin 2: NPN dark switching	LE 318B.W/2N-M12	50116849
	With cable, 2m	Pin 4: PNP light switching, pin 2: PNP dark switching	LE 318B.W/4P	50116850
		Pin 4: NPN light switching, pin 2: NPN dark switching	LE 318B.W/2N	50116848
Accessories for optimum fastening				
	Support for embedded mounting	Collective packaging with 10 supports	BT 318P-LS	50117258
	Mounting bracket for standard mounting		BT D18M.5	50113548
	Mounting bracket for omni-mount		BT D21M	50117257

Part number code

L E 3 1 8 B . W / 4 P - M 1 2

Operating principle

LS	Throughbeam photoelectric sensor, transmitter
LE	Throughbeam photoelectric sensor, receiver

Series

318B	Series 318B
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Optics design

N/A	Axial optics
.W	90° angular optics

Switching output/function /OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2) or switching input/function /IN1IN2 (IN1 = pin 4, IN2 = 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

Combinations of functions are possible via two-digit code!

Electrical connection

N/A	Cable, standard length 2000mm
-M12	M12 connector