

L 318 B

Throughbeam photoelectric sensors

en 01-2011/10 50116754

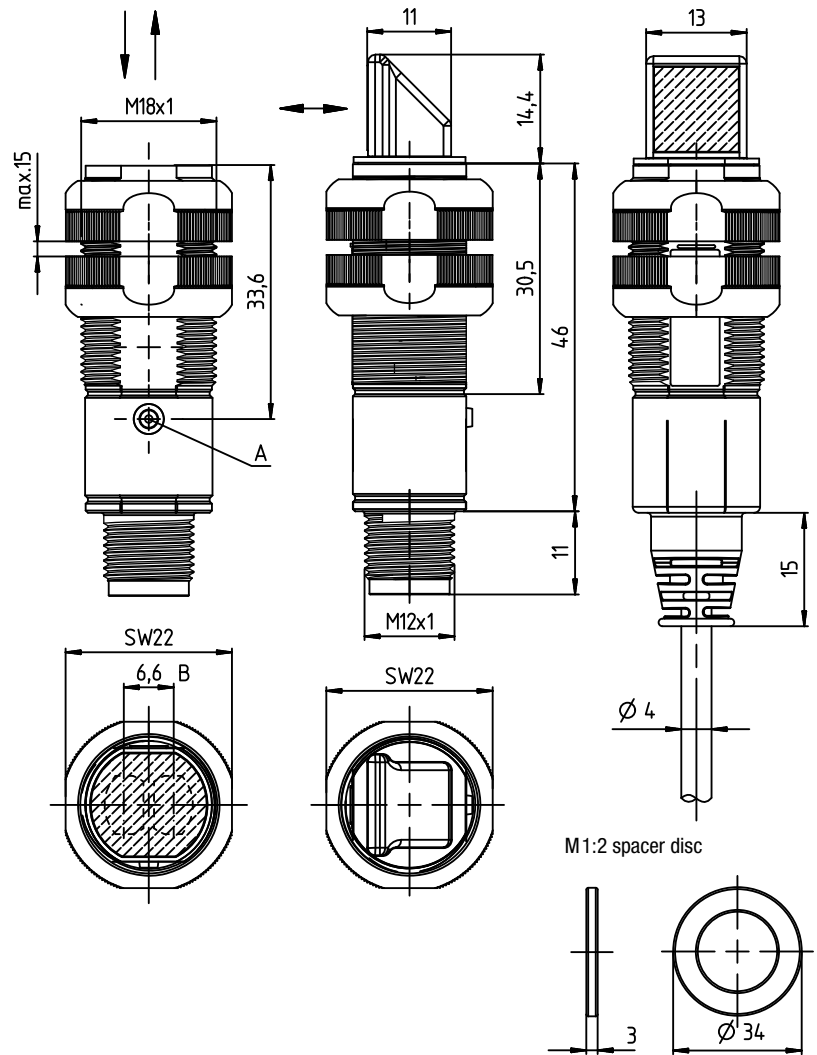


0 ... 15m
0 ... 8m
(with 90° angular optics)



- 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 interlinking of the sensor
- Complementary outputs for light/dark switching

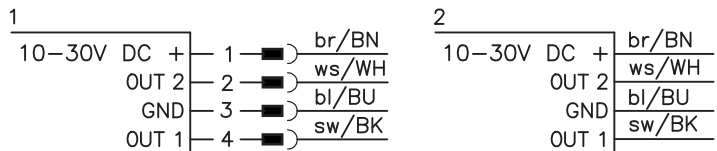
Dimensioned drawing



A Indicator diode
B Optical axis

Electrical connection

Receiver



Transmitter



We reserve the right to make changes • DS_L318B_en.fm



Accessories:

(available separately)

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

Specifications

Optical data

Typ. operating range limit (TK(S) 100x100) ¹⁾	axial optics: 0 ... 15 m	90° optics: 0 ... 8m
Operating range ²⁾	axial optics: 0 ... 10 m	90° optics: 0 ... 5.5m
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 ³⁾	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
Switching input.../9D...	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
Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	max. 100mA ⁴⁾

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, 4x0.20mm ²

Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit ⁵⁾	2, 3
VDE safety class	III
Protection class	IP 67
Light source	free group (in acc. with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ³⁾

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) For UL applications: for use in class 2 circuits according to NEC only
- 4) Sum of the output currents for both outputs, 50mA when ambient temperatures > 40°C
- 5) 2=polarity reversal protection, 3=short-circuit protection for all outputs

Tables

Axial optics

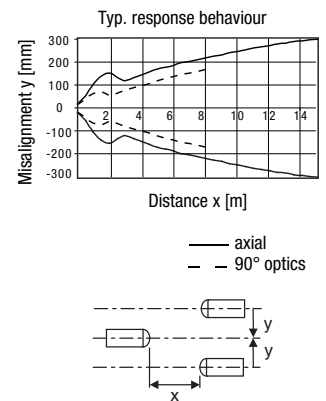
0	10.0	15.0
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90° optics:

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

Diagrams



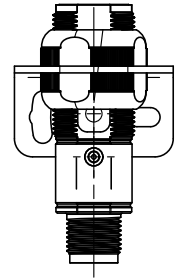
Remarks

- **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.

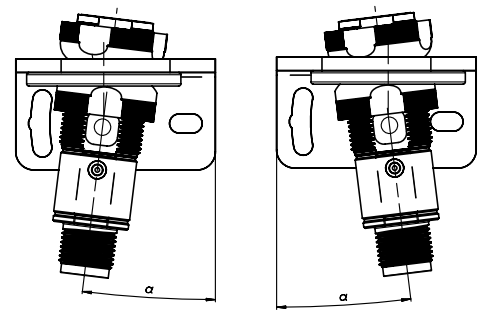


Omni-mount

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*.

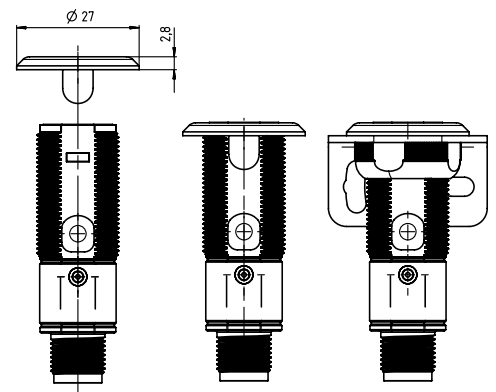
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm ^{*)}	+/- 8°

^{*)} Corresponds to the thickness of the 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 M12 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 M12 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 M12 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 M12 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 Omnimount		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

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