

L 318 B

Throughbeam photoelectric sensors

en 06-2015/09 50116754



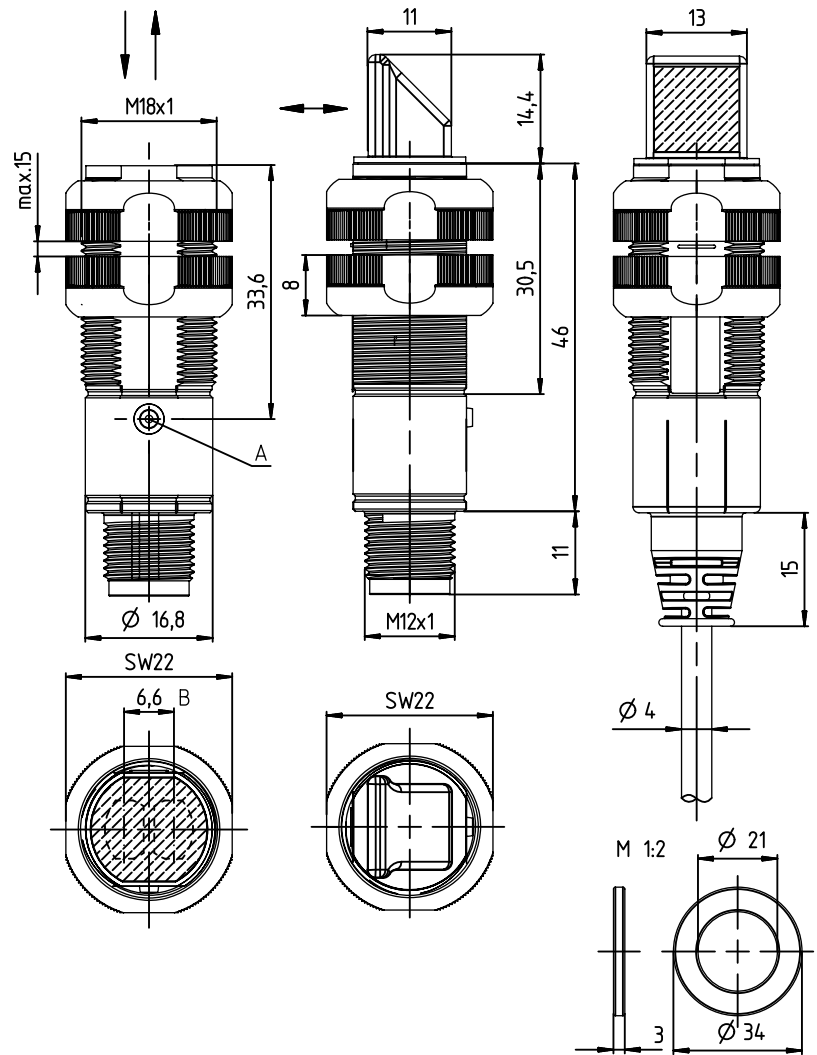
0 ... 15m  
0 ... 8m  
(with 90° angular optics)

10 - 30 V  
DC

500 Hz

- 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

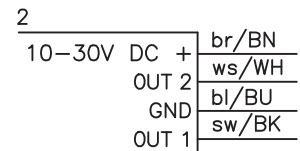
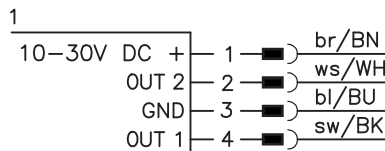
Dimensioned drawing



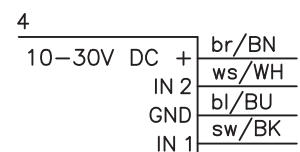
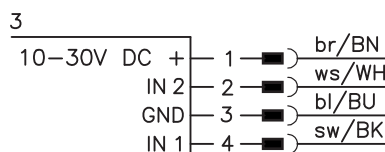
A Indicator diode  
B Optical axis

Electrical connection

Receiver



Transmitter



Accessories:

(available separately)

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

We reserve the right to make changes • DS\_L318B\_en\_50116754.fm



## Specifications

### Optical data

Typ. operating range limit <sup>1)</sup>	axial optics: 0 ... 15 m 90° optics 0 ... 8 m
Operating range <sup>2)</sup>	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 $U_B$ <sup>3)</sup>	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 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...	.../2N... pin 2: transmitter active when not connected or with LOW signal
Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	max. 100mA <sup>4)</sup>

### 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 <sup>2</sup>

### Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit <sup>5)</sup>	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
Certifications	UL 508, C22.2 No.14-13 <sup>3) 6)</sup>

- 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
- 6) 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)

## Tables

### Axial optics:

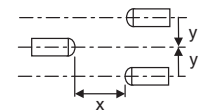
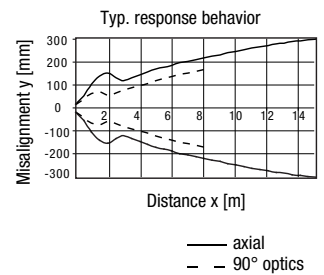
0	10.0	15.0
---	------	------

### 90° optics:

0	5.5	8.0
---	-----	-----

- Operating range [m]
- Typ. operating range limit [m]

## Diagrams



## Remarks

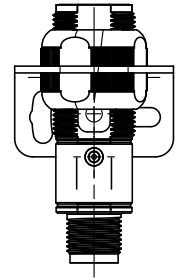
### Operate in accordance with intended use!

- ⚠ 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 the intended use.

**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.

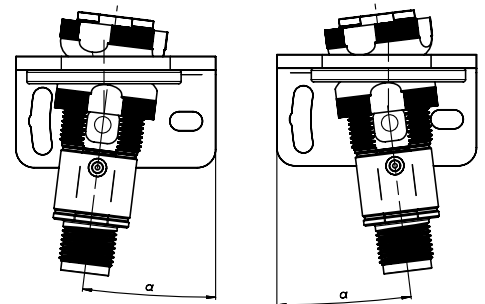


**omni-mount**

*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*.

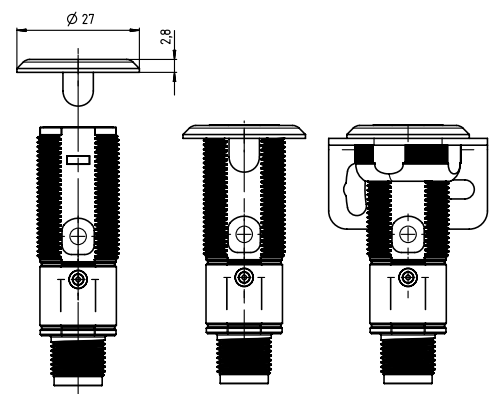
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm*)	+/- 8°

\*) 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](http://www.leuze.com).

			Designation	Part no.
<b>Sensors with axial optics</b>				
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
<b>Sensors with 90° angular optics</b>				
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
<b>Accessories for optimum fastening</b>				
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

### 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