

L 318 B

Throughbeam photoelectric sensors

en 06-2015/09 50116754

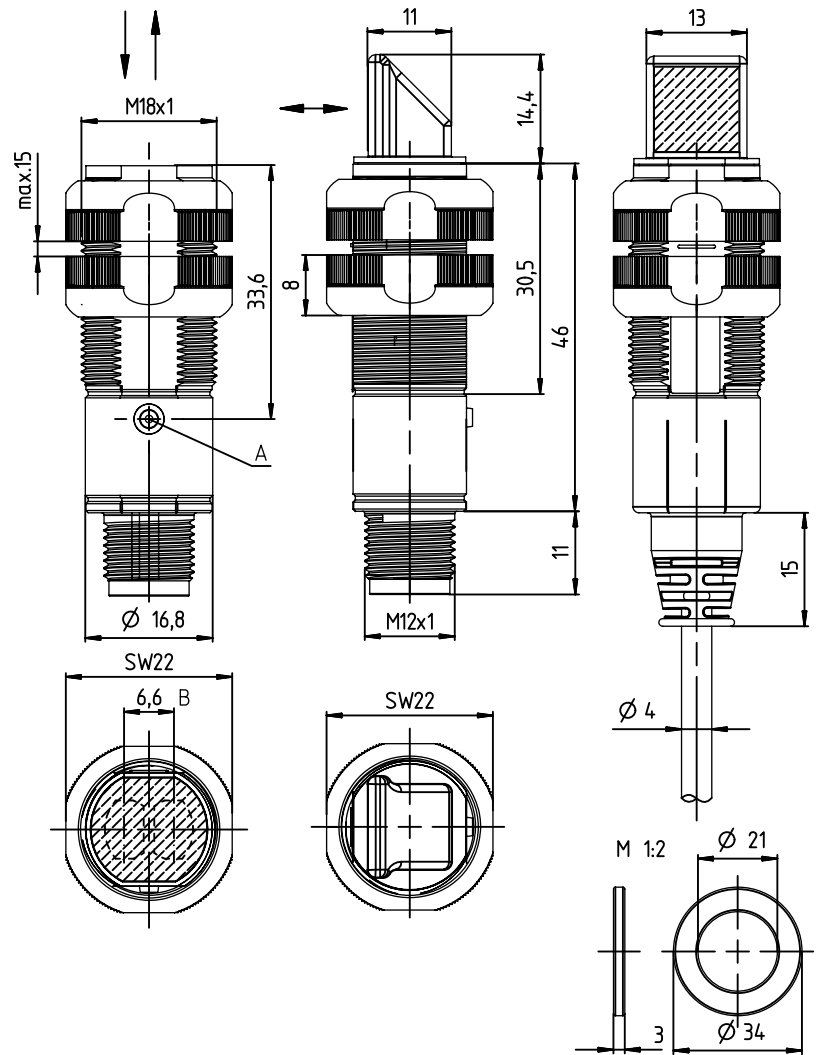


0 ... 15m
0 ... 8m
(with 90° angular optics)



- 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

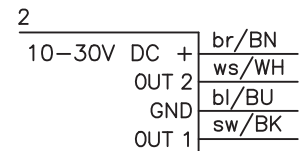
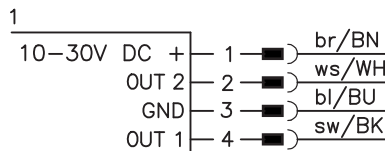
Dimensioned drawing



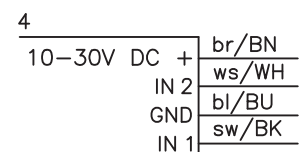
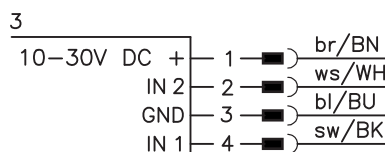
A Indicator diode
B Optical axis

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 ¹⁾
 Operating range ²⁾
 Light source
 Wavelength

axial optics: 0 ... 15 m 90° optics 0 ... 8 m
 axial optics: 0 ... 10 m 90° optics 0 ... 5.5 m
 LED (modulated light)
 620nm (visible red light)

Timing

Switching frequency
 Response time
 Delay before start-up

500Hz
 1 ms
 ≤ 300ms

Electrical data

Operating voltage U_B ³⁾
 Residual ripple
 Open-circuit current
 Switching output

.../4P...
 .../2N...

10 ... 30VDC
 ≤ 15% of U_B
 ≤ 15mA
 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
 $\geq (U_B - 2V) \leq 2V$
 max. 100mA ⁴⁾

Switching input.../9D...

Signal voltage high/low
 Output current

Indicators

Green LED
 Yellow LED
 Yellow LED, flashing

ready
 light path free
 light path free, no performance reserve

Mechanical data

Housing
 Optics cover
 Weight
 Connection type

plastic
 plastic
 70g (cable), 20g (M12)
 M12 connector, 4-pin
 cable 2m, 4x0.20mm²

Environmental data

Ambient temp. (operation/storage)
 Protective circuit ⁵⁾
 VDE safety class
 Protection class
 Light source
 Standards applied
 Certifications

-40°C ... +60°C / -40°C ... +70°C
 2, 3
 III
 IP 67
 exempt group (in acc. with EN 62471)
 IEC 60947-5-2
 UL 508, C22.2 No.14-13 ³⁾ ⁶⁾

- 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:

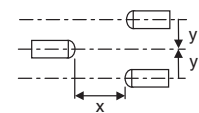
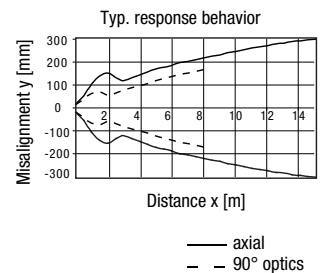
0	10.0	15.0
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90° optics:

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

Diagrams



Remarks

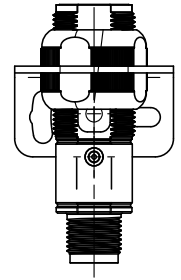
Operate in accordance with intended use!

- ⚠ 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.

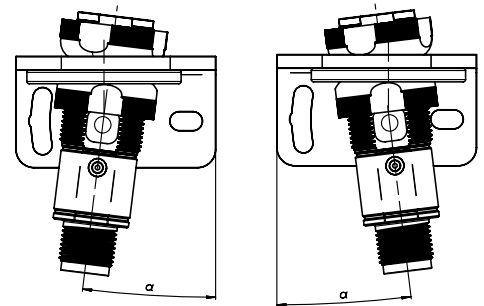


omni-mount

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*.

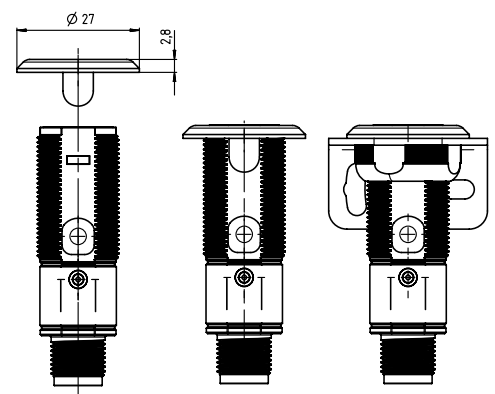
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm*)	+/- 8°

*) 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.

			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 Mounting bracket for standard mounting Mounting bracket for omni-mount	Collective packaging with 10 supports	BT 318P-LS	50117258		
			BT D18M.5	50113548		
			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