L 318 BI

Throughbeam photoelectric sensors

en 02-2015/09 50130264

0 … 23m

10 - 30 V DC

500 Hz

- 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

IEC 60947...

IEC 60947...

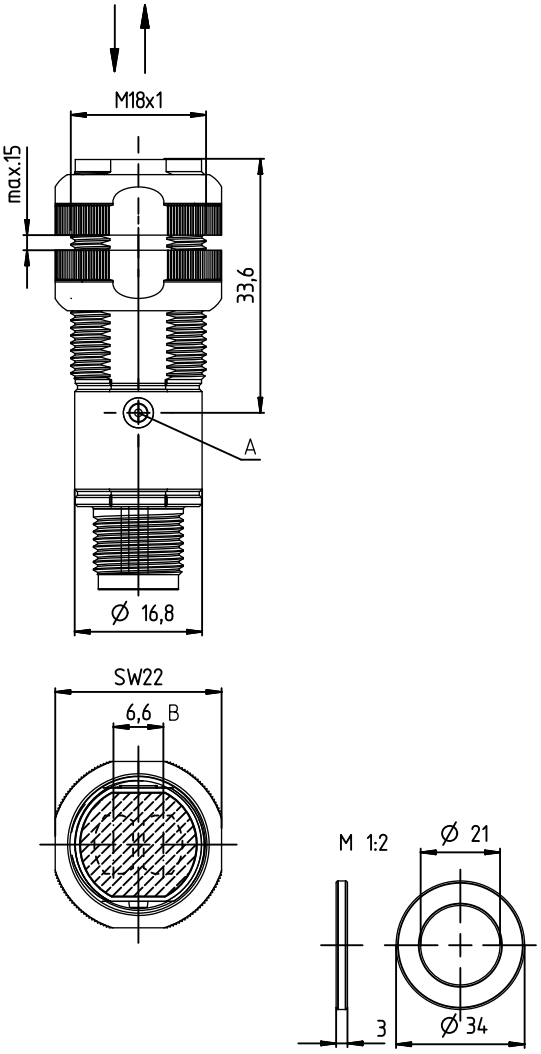
IP 67

Accessories:

(available separately)

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

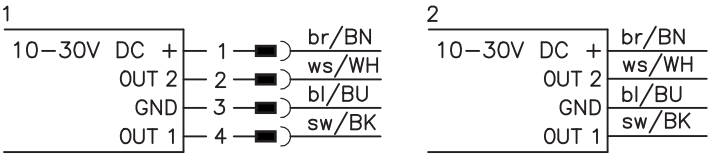
Dimensioned drawing



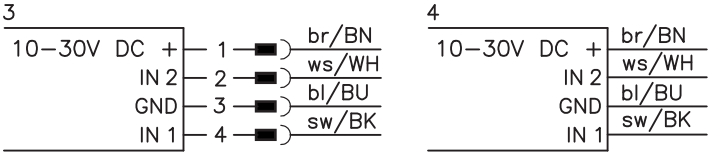
A Indicator diode
B Optical axis

Electrical connection

Receiver



Transmitter



Specifications

Optical data

Typ. operating range limit [1]		0 … 23 m
Operating range [2]		0 … 16 m
Light source		LED (modulated light)
Wavelength		850 nm (infrared light)

Timing

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

Electrical data

Operating voltage U_B [3]		10 … 30 VDC
Residual ripple		≤ 15 % of U_B
Open-circuit current		≤ 15 mA
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		≥ (U_B-2V)/≤ 2V
Output current		max. 100 mA [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	70 g (cable), 20 g (M12)
Connection type	M12 connector, 4-pin cable 2 m, 4 x 0.20 mm²

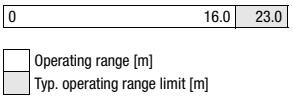
Environmental data

Ambient temp. (operation/storage)	-40 °C … +50 °C/-40 °C … +70 °C
Protective circuit [5]	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 [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, 50 mA 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 30 V, 0.5 A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Tables

Axial optics:



Remarks

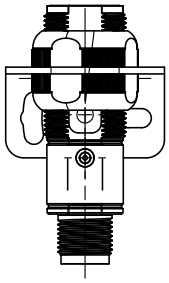
Operate in accordance with intended use!

- 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.

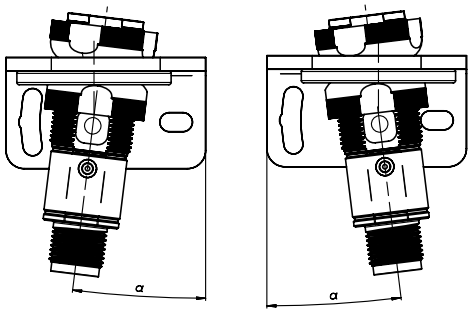


omni-mount

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*.

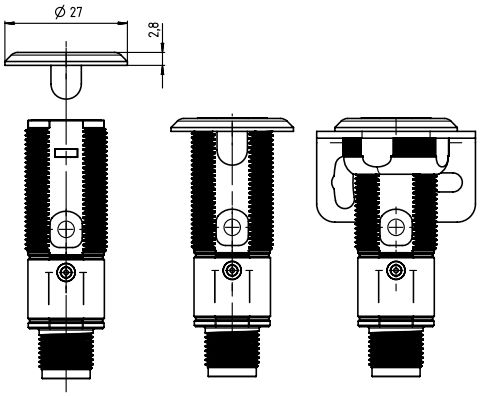
Mounting sheet thickness	Max. adjustment angle
2 mm	+/- 5°
4 mm*)	+/- 8°

*) 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 318BI/9D-M12	50129507
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
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	S	3	1	8	B	I			/	9	D	-	M	1	2
L	E	3	1	8	B				/	4	P	-	M	1	2

Operating principle

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

Series

318BI	Series 318B with infrared light

Optics design

N/A	Axial 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 2000 mm
-M12	M12 connector