LSL 318

Laser throughbeam photoelectric sensors

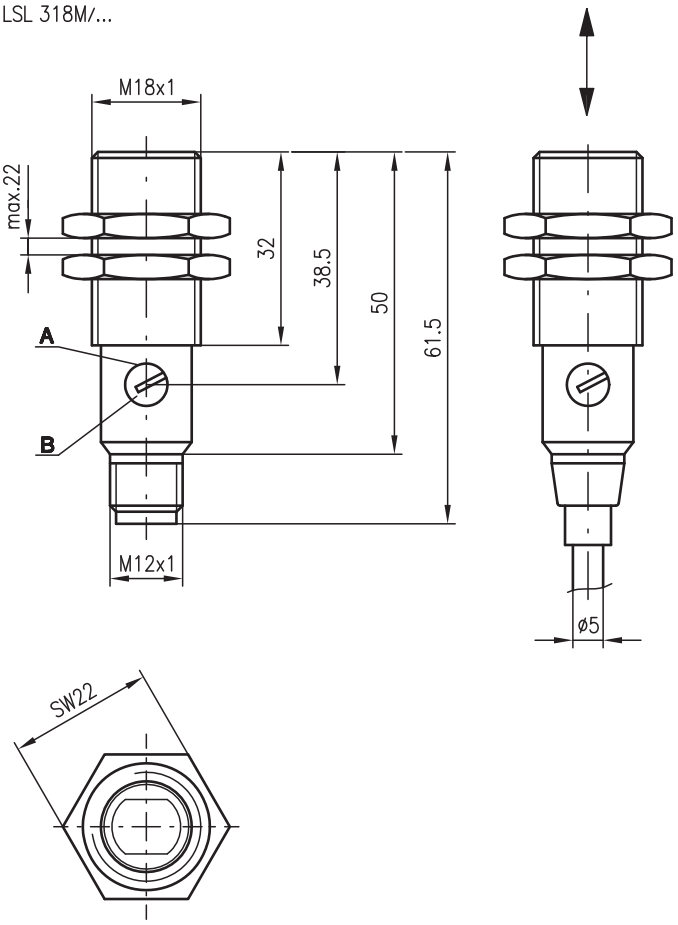
2024/06/18 50108665-02

0 … 18m
0 … 120m

IP 67

- Throughbeam photoelectric sensors with long operating range in red laser light and straight optics
- Sturdy cylindrical stainless steel housing M18x1, degree of protection IP 67 for industrial application
- Fixed beam geometry, convergent
- High switching frequency
- Activation input for testing and interlinking of the sensor
- Complementary switching outputs for light/ dark switching or as a control function
- Very short construction for use in limited spaces

Dimensioned drawing



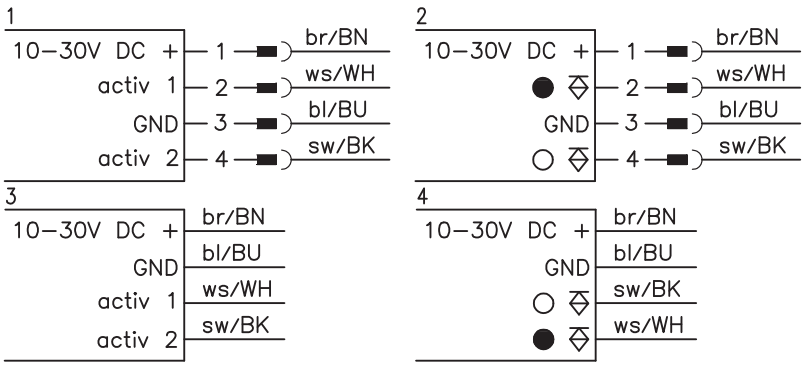
A Indicator diode
B Sensitivity adjustment

Accessories:

(available separately)

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

Electrical connection



Technical data

Optical data

Typ. operating range limit [1]	0 … 18m, 0 … 120m
Operating range [2]	0 … 15m, 0 … 100m
Light spot diameter	See diagrams
Light source	Laser
Laser class	1 in acc. with IEC 60825-1:2014 / EN 60825-1:2014+A11:2021
Wavelength	650nm (visible red light)
Impulse duration	2µs
Max. power	0.3mW

Time behavior

Switching frequency	5000Hz
Response time	0.1ms
Readiness delay	≤ 30ms

Electrical data

Operating voltage U_B [3]	10 … 30VDC
Residual ripple	≤ 10% of U_B
Open-circuit current	≤ 30mA
Switching output	2 transistor outputs, antivalent
Function	Light/dark switching
Signal voltage high/low	≥ (U_B-1.6V)/≤ 1.6V
Output current	Max. 100mA
Sensitivity	Adjustable (transmitter)

Indicators

Red LED	Light path free
Red LED, flashing	Light path free, no function reserve

Mechanical data

Housing	Stainless steel
Optics cover	Polyamide 12
Weight	90g (cable), 20g (M12)
Connection type	M12 connector, 4-pin Cable 2m, 4x0.25mm²

Environmental data

Ambient temp. (operation/storage)	-25°C … +60°C/-40°C … +70°C
Protective circuit [4]	1, 2, 3, 4
VDE protection class [5]	II, all-insulated
Degree of protection	IP 67
Standards applied	IEC 60947-5-2, UL 508
Certifications	UL 508, C22.2 No.14-13 [3] [6]

Additional functions

Activation input active 1	
Transmitter active/not active	≥ 8V or not connected/≤ 1.5V
Activation input active 2	
Transmitter active/not active	≤ 1.5V or not connected/≥ 8V

1) Typ. operating range limit: max. attainable range without function reserve
2) Operating range: recommended range with function reserve
3) For UL applications: for use in "class 2" circuits according to NEC only
4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
5) Rating voltage 250VAC
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)

Order guide

Selection table Equipment	Order code	**LSL 318M/P-S12** Part no. 500 83172 (Tr) Part no. 500 83176 (Re)	**LSL 318M/P-B5-S12** Part no. 500 83172 (Tr) Part no. 500 83180 (Re)	**LSL 318M/P** Part no. 500 83171 (Se) Part no. 500 83175 (Re)	**LSL 318M/P-B5** Part no. 500 83171 (Se) Part no. 500 83179 (Re)
Housing	Stainless steel	●	●	●	●
Connection	M12 connector	●	●		
	Cable			●	●
Switching output	PNP	●	●	●	●
	NPN				
Operating range	15m		●		●
	100m	●		●	
Connection diagram	Transmitter	1	1	3	3
	Receiver	2	2	4	4

Tables

LSL 318…

0	100	120

LSL 318…-B5...

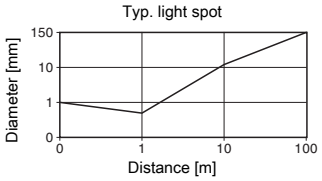
0	15	18

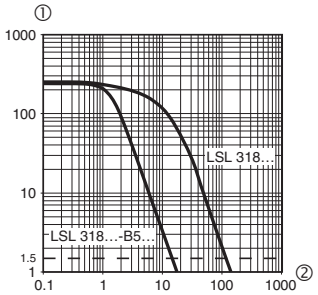
Operating range [m]
Typ. operating range limit [m]

Versions LSL 318…**-B5**… : with Ø 1.0mm integrated optical pin diaphragm for the detection of small parts or for precise positioning tasks.

Diagrams

LSSL 318…





Typical behavior – operating range / relative intensity of received light

① Rel. intensity of received light
② Operating range in [m]

Notes

NOTES

Observe 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 its intended use.

Laser safety notices

⚠ ATTENTION, LASER RADIATION – CLASS 1 LASER PRODUCT	
	The device satisfies the requirements of IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 safety regulations for a product of **laser class 1** and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in "Laser Notice No. 56", dated May 8, 2019. ↳ Observe the applicable statutory and local laser protection regulations. ↳ The device must not be tampered with and must not be changed in any way. There are no user-serviceable parts inside the device. **CAUTION!** Opening the device may result in hazardous radiation exposure! Repairs must only be performed by Leuze electronic GmbH + Co. KG.