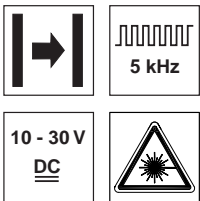


LSL 318

Laser throughbeam photoelectric sensors

Dimensioned drawing

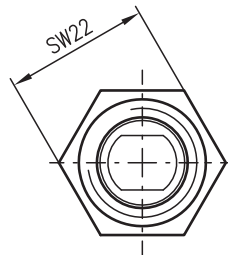
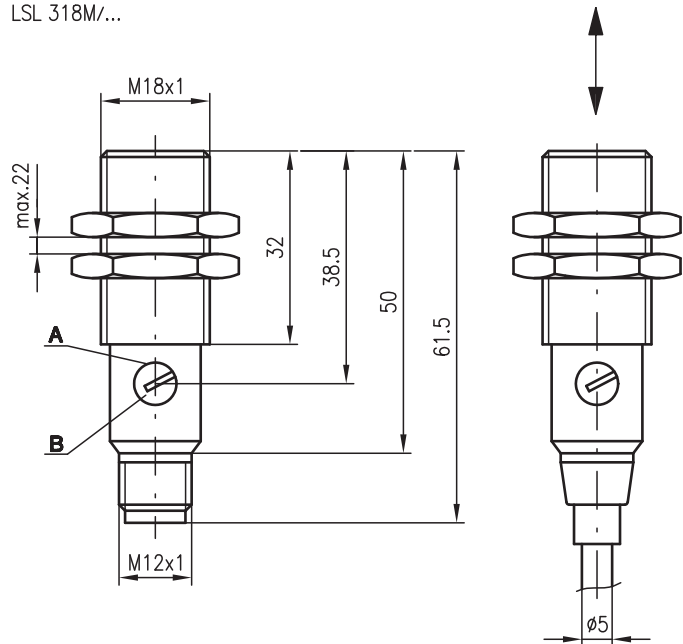
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0 ... 18m
0 ... 120m

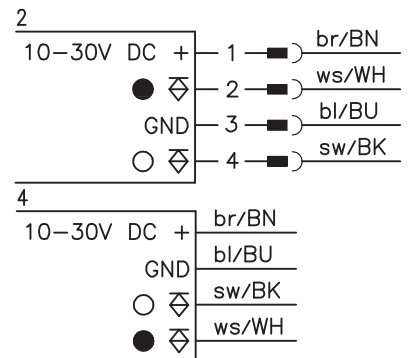
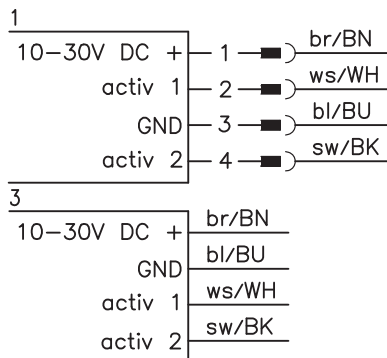
- Throughbeam photoelectric sensors with long operating range in red laser light and straight optics
- Robust cylindrical stainless steel housing M18x1, protection class IP 67 for industrial application
- Fixed beam geometry, convergent
- High switching frequency
- Activation input for testing and interlinking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

LSL 318M/...



- A** Indicator diode
- B** Sensitivity adjustment

Electrical connection



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_LSL318_en.fm

Specifications

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 |
| Wavelength | 650nm (visible red light) |
| Impulse duration | 2µs |
| Max. power | 0.3mW |

Timing

| | |
|-----------------------|--------|
| Switching frequency | 5000Hz |
| Response time | 0.1ms |
| Delay before start-up | ≤ 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, complementary |
| Function characteristics | 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 |
| LED red flashing | light path free, no performance reserve |

Mechanical data

| | |
|-----------------|---|
| Housing | stainless steel |
| Optics cover | polyamide 12 |
| Weight | 90g (cable), 20g (M12) |
| Connection type | M12 connector, 4-pin cable 2m, 4x0.25mm ² |

Environmental data

| | |
|-----------------------------------|--|
| Ambient temp. (operation/storage) | -25°C ... +60°C / -40°C ... +70°C |
| Protective circuit ⁴⁾ | 1, 2, 3, 4 |
| VDE safety class ⁵⁾ | II, all-insulated |
| Protection class | IP 67 |
| Laser class | 1 (according to EN 60825-1 and 21 CFR 1040.10 with Laser Notice No. 50) |
| Standards applied | IEC 60947-5-2, UL 508 |

Options

| | |
|----------------------------------|--------------------------------|
| 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 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) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 5) Rating voltage 250VAC

Tables

LSL 318...

| | | |
|---|-----|-----|
| 0 | 100 | 120 |
|---|-----|-----|

LSL 318...-B5...

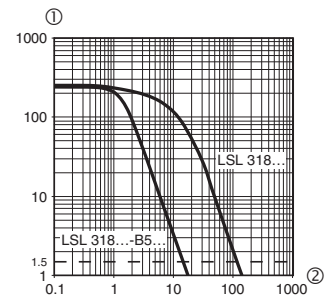
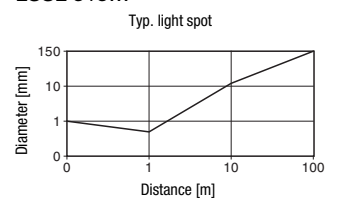
| | | |
|---|----|----|
| 0 | 15 | 18 |
|---|----|----|

| | |
|---|--------------------------------|
| □ | Operating range [m] |
| ▒ | Typ. operating range limit [m] |

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

Diagrams

LSL 318...



Typical behaviour operating range / relative intensity of received light

- 1 Relative intensity of received light
- 2 Operating range in [m]

Order guide

| Selection table | | Order code → | | | |
|--------------------|-----------------|--|---|--|---|
| Equipment ↓ | | 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 (Tr) Part no. 500 83175 (Re) | LSL 318M/P-B5 Part no. 500 83171 (Tr) 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 |

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.