



Model Number

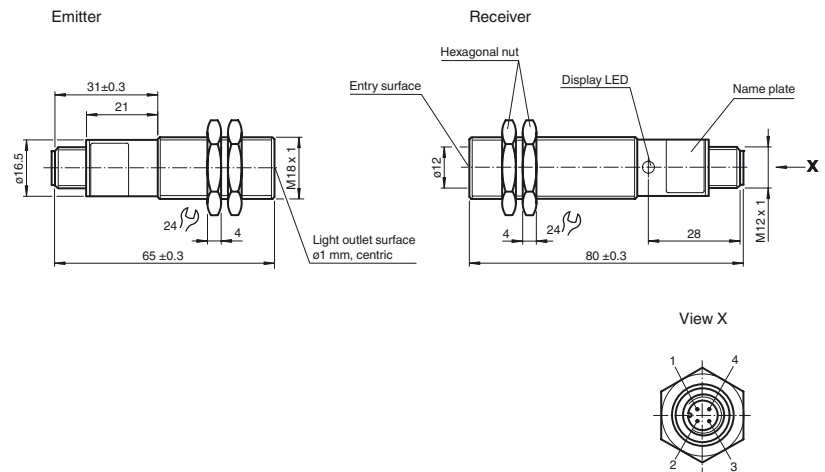
E18-LAS/EV18-LAS/25/32/76a/92

Thru-beam sensor
with 4-pin, M12 x 1 connector

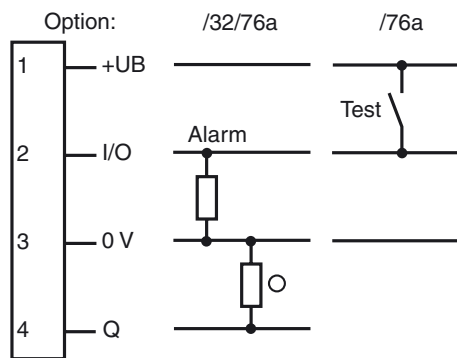
Features

- Laser thru-beam sensor in the M18 housing
- Metal design
- Automatic threshold value adaptation
- Very high switching accuracy
- Light beam diameter < 1.5 mm
- Test input

Dimensions

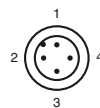


Electrical connection



○ = Light on
● = Dark on

Pinout



Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

Technical data**System components**

| | |
|----------|----------------|
| Emitter | E18-LAS/92 |
| Receiver | EV18-LAS/32/92 |

General specifications

| | |
|----------------------------|---------------------------------------|
| Effective detection range | 0 ... 10 m |
| Threshold detection range | 18 m |
| Light source | laser diode |
| Light type | modulated visible red light |
| Laser nominal ratings | |
| Note | LASER LIGHT , DO NOT STARE INTO BEAM |
| Laser class | 1 |
| Wave length | 650 nm |
| Beam divergence | 1 mrad |
| Pulse length | 15 µs |
| Repetition rate | 10 kHz |
| max. pulse energy | < 10.2 nJ |
| Target size | 1.2 mm |
| Light receiver | photo diode |
| Diameter of the light spot | approx. 2 mm at detection range 1.5 m |
| Angle of divergence | Receiver +/-2° |
| Optical face | frontal |
| Ambient light limit | |
| Continuous light | 5000 Lux |
| Hysteresis | H 25 % |

Functional safety related parameters

| | |
|--------------------------------|---------|
| MTTF _d | 208.3 a |
| Mission Time (T _M) | 7 a |
| Diagnostic Coverage (DC) | 60 % |

Indicators/operating means

| | |
|--------------------|--|
| Function indicator | LED yellow, lights up when light beam is free, flashes when falling short of the stability control |
|--------------------|--|

Electrical specifications

| | | |
|------------------------|----------------|------------------------------------|
| Operating voltage | U _B | 10 ... 30 V DC |
| Ripple | | 10 % |
| No-load supply current | I ₀ | emitter ≤ 25 mA , receiver ≤ 60 mA |

Input

| | |
|------------|---|
| Test input | Emitter deactivation emitter on: 0 ... +3V emitter off: +5V ... +U _B |
|------------|---|

Output

| | |
|-----------------------------|---|
| Pre-fault indication output | PNP, open collector , short-circuit protected inactive: signal strength > approx. 30 % of the strength with clean optic active: signal strength < approx. 30 % of the strength with clean optic |
| Switching type | light on |
| Signal output | 1 PNP, short-circuit protected, open collector |
| Switching voltage | max. 30 V DC |
| Switching current | max. 100 mA |
| Switching frequency | f 1000 Hz |
| Response time | 0.5 ms |

Conformity

| | |
|------------------|------------------|
| Product standard | EN 60947-5-2 |
| Laser safety | IEC 60825-1:2007 |

Ambient conditions

| | |
|---------------------|--------------------------------|
| Ambient temperature | 0 ... 50 °C (32 ... 122 °F) |
| Storage temperature | -40 ... 85 °C (-40 ... 185 °F) |

Mechanical specifications

| | |
|----------------------|--------------------------|
| Degree of protection | IP65 |
| Connection | 4-pin, M12 x 1 connector |
| Material | |
| Housing | brass, nickel-plated |
| Optical face | glass |
| Connector | metal |
| Mass | Per 45 g |

Compliance with standards and directives

| | |
|-----------------------------|--|
| Standard conformity | |
| Shock and impact resistance | IEC / EN 60068, half-sine, 30 g in X, Y and Z direction |
| Vibration resistance | IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions |

Approvals and certificates

| | |
|--------------|--|
| CCC approval | CCC approval / marking not required for products rated ≤36 V |
|--------------|--|

Accessories**CPZ18B03**

Mounting Bracket with swivel nut

OMH-VL18

Mounting Bracket with swivel nut

BF 18

Mounting flange, 18 mm

BF 18-F

Plastic mounting adapter, 18 mm

BF 5-30

Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

V1-G-2M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-G-5M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-G-5M-PUR

Female cordset, M12, 4-pin, PUR cable

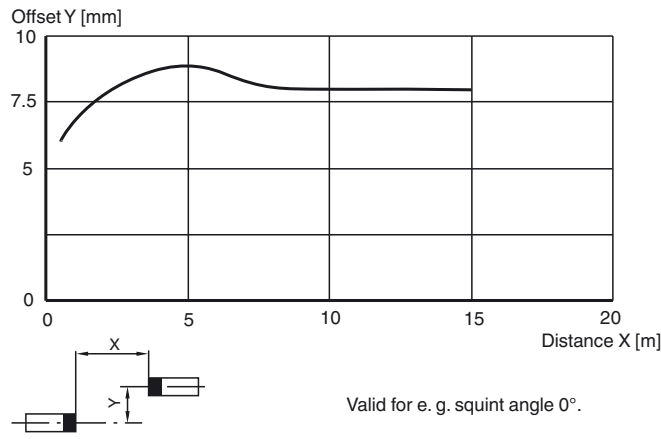
V1-W-5M-PUR

Female cordset, M12, 4-pin, PUR cable

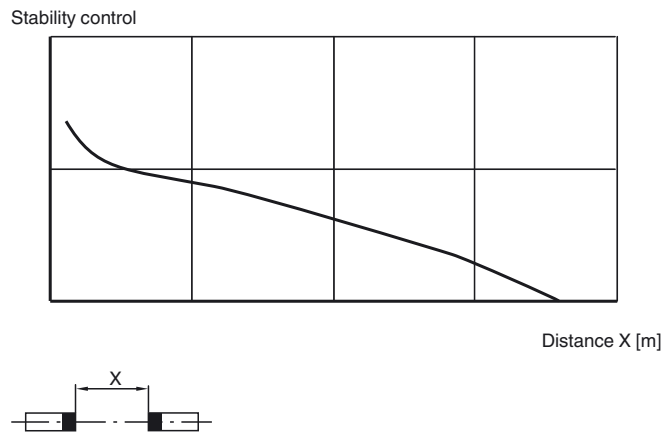
Other suitable accessories can be found at www.pepperl-fuchs.com

Curves/Diagrams

Characteristic response curve

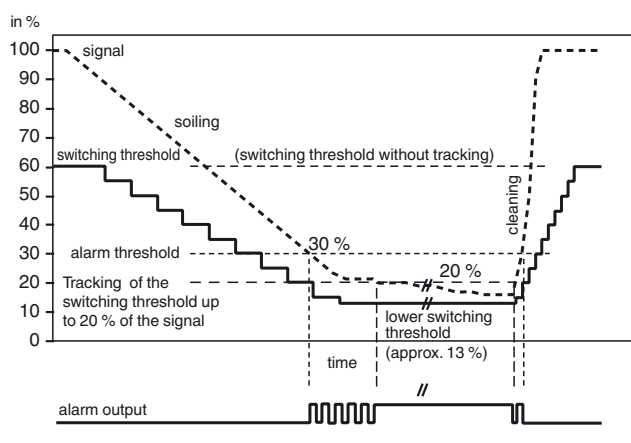


Relative received light strength



Curves/Diagrams

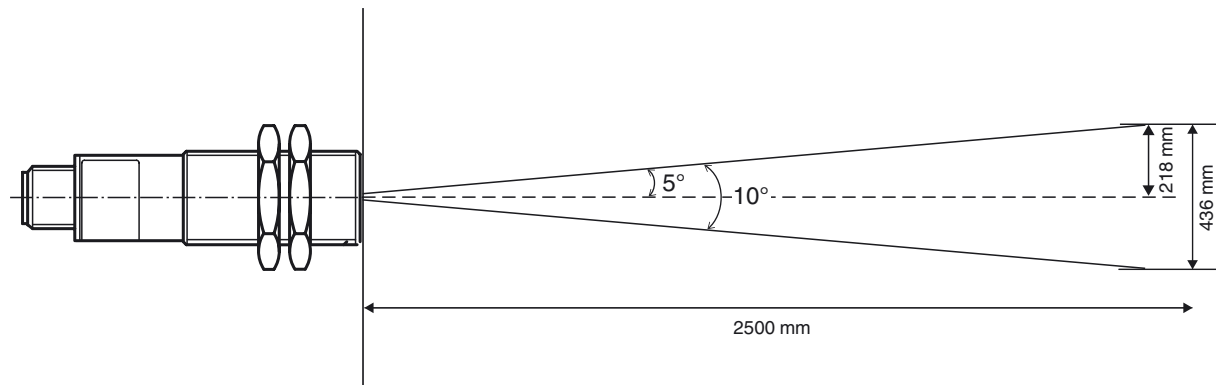
Dynamic tracking of the switching threshold



Note

The E18/EV18-LAS... optical barrier is equipped with an automatic adjustment of the limit value with non-volatile memory to compensate for contamination by dust particles in the optical path. The adjustment of the limit value for the switching point extends to < 20% of the signal level that is present for the unattenuated optical path. The control constant is < 3 sec for a reduction in intensity of 2%, or < 0.6 s (typically 0.2 sec) for an increase in intensity of 2%.

Squint Angle



Laser notice laser class 1

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.