



**Model Number**

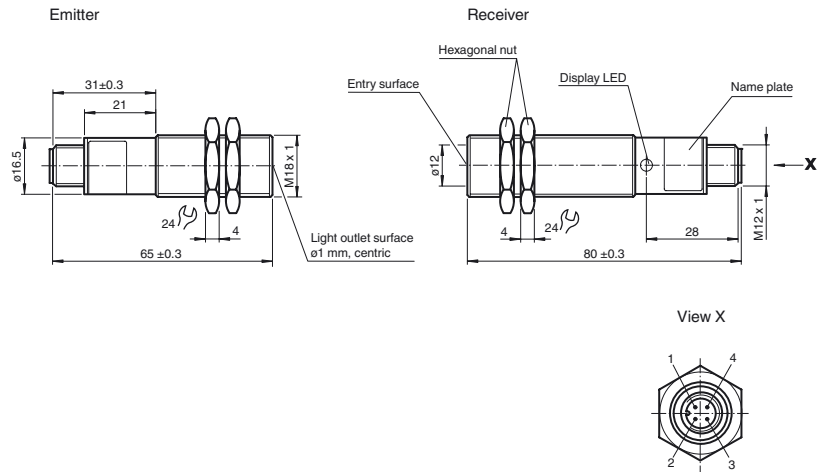
**E18/EV18-LAS/32/59/76a/92**

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

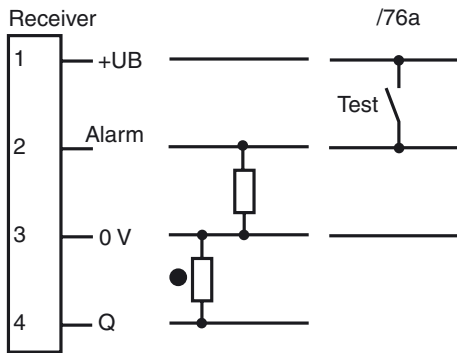
**Features**

- 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

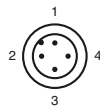
**Dimensions**



**Electrical connection**



**Pinout**



Wire colors in accordance with EN 60947-5-2

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

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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**Technical data****System components**

Emitter	E18-LAS/92
Receiver	EV18-LAS/32/59/92

**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 <sub>d</sub>	208.3 a
Mission Time (T <sub>M</sub> )	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
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**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	emitter ≤ 25 mA , receiver ≤ 60 mA

**Input**

Test input	Emitter deactivation emitter on: 0 ... +3V emitter off: +5V ... +U <sub>B</sub>
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**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	dark 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

**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**

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2:2007
Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
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
Laser class	IEC 60825-1:2007 EN 60825-1:2007

**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

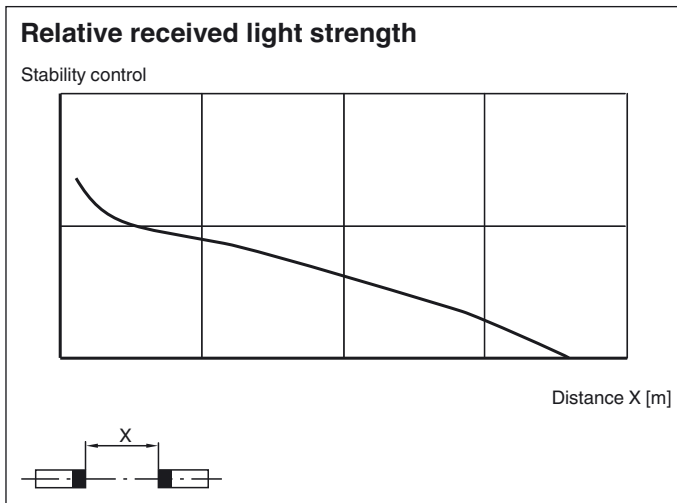
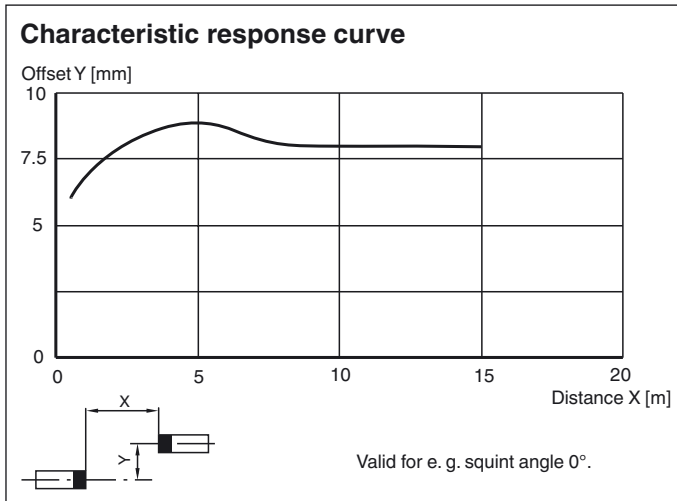
Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

**Approvals and certificates**

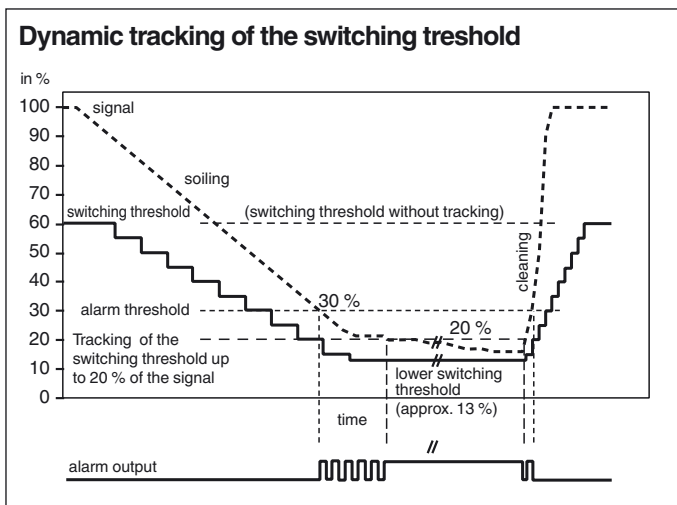
CCC approval

CCC approval / marking not required for products rated  $\leq 36$  V

**Curves/Diagrams**



**Curves/Diagrams**



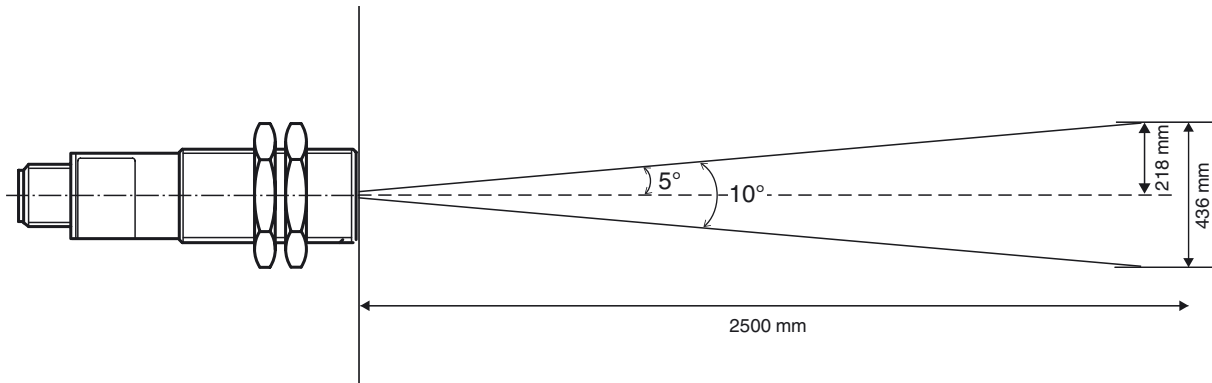
**Note**

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%.

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## 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.