



**Model Number**

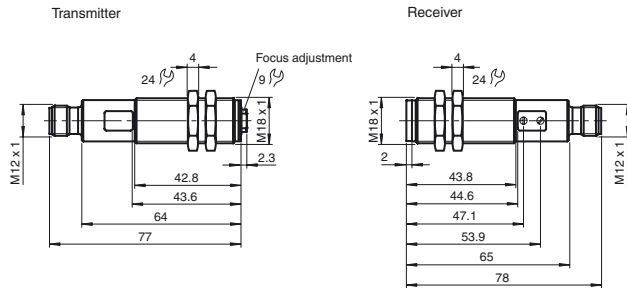
**VS18/VSE18-M-LAS/32/40a/76a/82b/118**

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

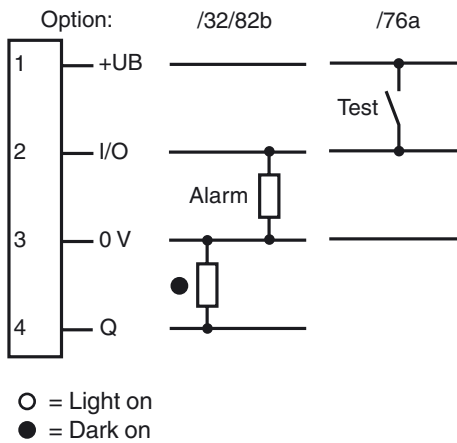
**Features**

- M18 threaded housing made of brass, nickel plated
- Detection of very small parts in the near range
- Visible red light, pulsed LASER light
- Focusable optical system
- Array control panel with highly visible LED display
- Flashing power on LED in case of short-circuit

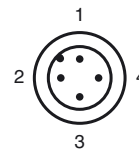
**Dimensions**



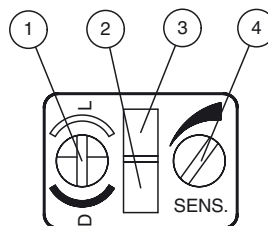
**Electrical connection**



**Pinout**



**Indicators/operating means**



1	Light/dark switch
2	Operating display   green
3	Switch state   yellow
4	Sensitivity adjustment

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Subject to modifications without notice

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

Emitter	VS18-M-LAS/76a/118
Receiver	VSE18-M-LAS/32/40a/82b/118

**General specifications**

Effective detection range	0 ... 60 m
Threshold detection range	85 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	655 nm
Beam divergence	11.7 mrad
Pulse length	2 µs
Repetition rate	50 kHz
max. pulse energy	2.55 nJ
Diameter of the light spot	100 mm x 100 mm at a distance of 85 m
Angle of divergence	adjustable focal point
Optical face	frontal
Ambient light limit	30000 Lux
Hysteresis	H < 15 %

**Functional safety related parameters**

MTTF <sub>d</sub>	520 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	90 %

**Indicators/operating means**

Operating display	LED green, flashes in case of short-circuit
Function display	LED yellow, light with free light beam , flashes when falling short of the stability control , OFF when light beam is interrupted (in receiver)
Controls	Sensitivity adjuster, light/dark switch (receiver)

**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC , class 2
No-load supply current	I <sub>0</sub>	Emitter: 20 mA , Receiver: 15 mA

**Input**

Test input	emitter deactivation at +U <sub>B</sub>
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**Output**

Pre-fault indication output	1 PNP, inactive when falling short of the stability control , max. 100 mA	
Switching type	light/dark on, switchable	
Signal output	1 PNP output, short-circuit protected, reverse polarity protected, open collector	
Switching voltage	30 V DC	
Switching current	max. 200 mA	
Voltage drop	U <sub>d</sub>	≤ 2.5 V DC
Switching frequency	f	5000 Hz
Response time		100 µs

**Ambient conditions**

Ambient temperature	-25 ... 55 °C (-13 ... 131 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Shock resistance	b < 30 g, T < 11 ms

**Mechanical specifications**

Protection degree	IP67
Connection	connector M12 x 1, 4-pin (Vario-Quick quick connect technology)
Material	
Housing	brass, nickel-plated
Optical face	plastic
Mass	60 g (device)

**Compliance with standards and directives**

Directive conformity	EMC Directive 2004/108/EC
Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Laser class	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

**Approvals and certificates**

UL approval	cULus Listed, Type 1 enclosure
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

**Accessories****OMH-VL18**

Mounting Bracket with swivel nut

**BF 18**

Mounting flange, 18 mm

**BF 18-F**

Mounting flange with dead stop, 18 mm

**BF 5-30**

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

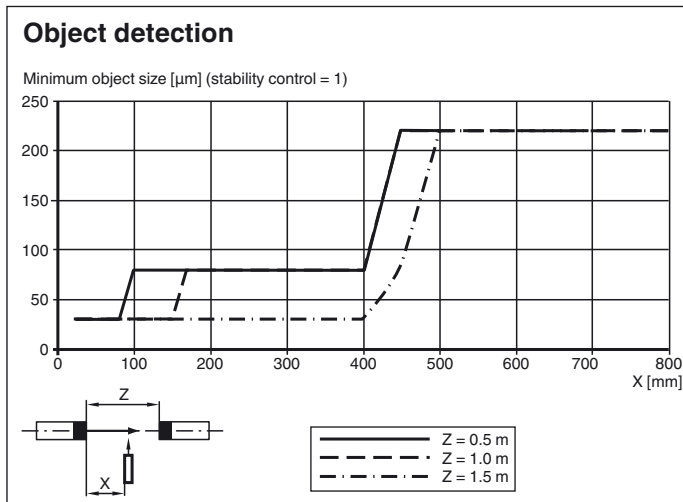
**V1-G-2M-PUR**

Cable socket, M12, 4-pin, PUR cable

**V1-W-2M-PUR**

Cable socket, M12, 4-pin, PUR cable

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



## Adjustment

### Small object detection

The focal point of the emitter can be adjusted. Very small objects are best detected at the focal point (place of smallest spot size).

Whether a small object can be detected or not depends on the emitter/receiver as well as on the emitter/object distance. Please see the corresponding curves enclosed.

For long distance application, you have to avoid a short focal plane setting. The maximum light spot diameter at the receivers location must not exceed 100 mm for reliable detection with 2-fold function reserve.

### 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.