Model Number

VS18/VSE18-M-LAS/40a/76a/118/128

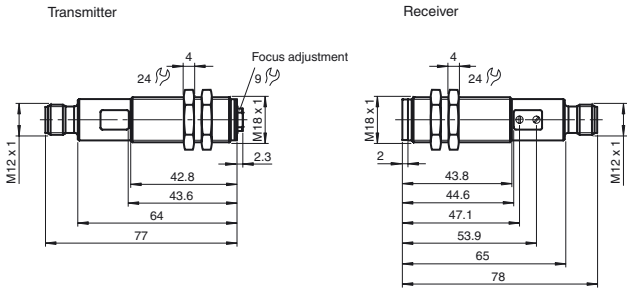
Thru-beam sensor

with 4-pin, M12 x 1 connector

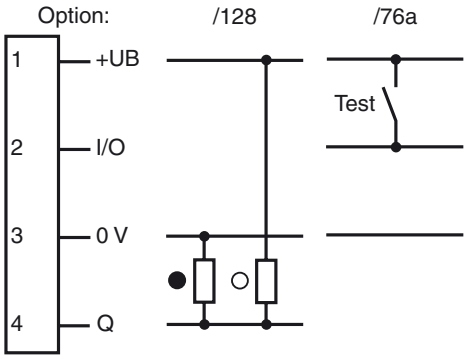
Features

- 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

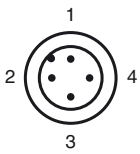


Electrical connection

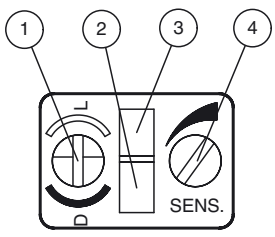


○ = Light on
● = Dark on

Pinout



Indicators/operating means



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

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Technical data

System components		
Emitter		VS18-M-LAS/76a/118
Receiver		VSE18-M-LAS/40a/118/128
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		
$MTTF_d$		520 a
Mission Time (T_M)		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_B	10 ... 30 V DC , class 2
No-load supply current	I_0	Emitter: 20 mA , Receiver: 15 mA
Input		
Test input		emitter deactivation at $+U_B$
Output		
Switching type		light/dark on, switchable
Signal output		Push-pull (4 in 1) output short-circuit protected overvoltage protected
Switching voltage		30 V DC
Switching current		max. 200 mA
Voltage drop	U_d	≤ 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

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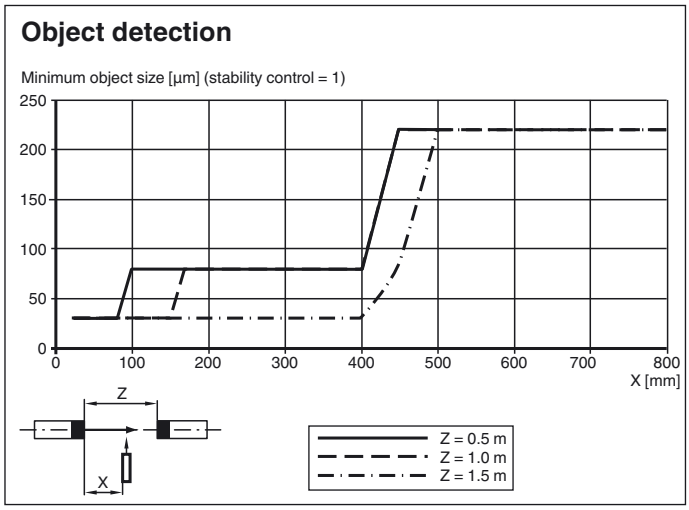

Adjustment

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 coresponding 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.

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