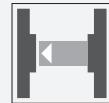


Thru-beam sensor

VS18/VSE18-M-LAS/32/40a/76a/82

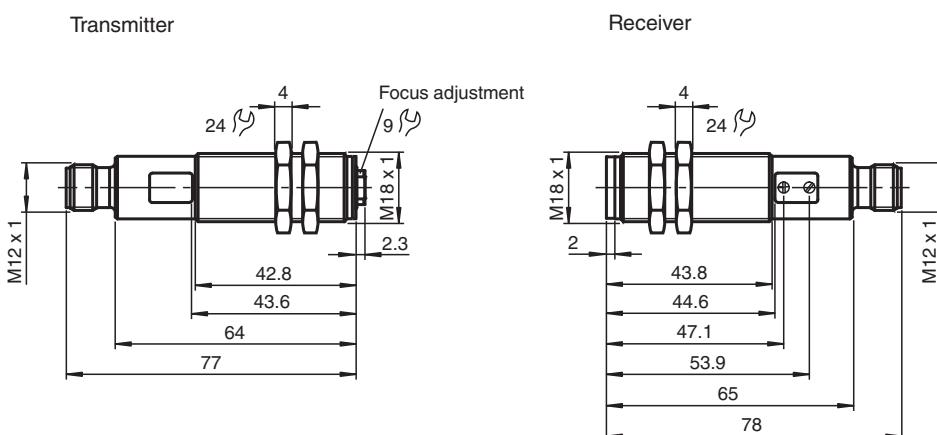


- M18 threaded housing made of brass, nickel plated
- Detection of very small parts in the near range
- Visible red light, pulsed LASER light
- Focusable optical system
- Array control panel with highly visible LED display
- Flashing power on LED in case of short-circuit

Laser thru-beam sensor



Dimensions



Technical Data

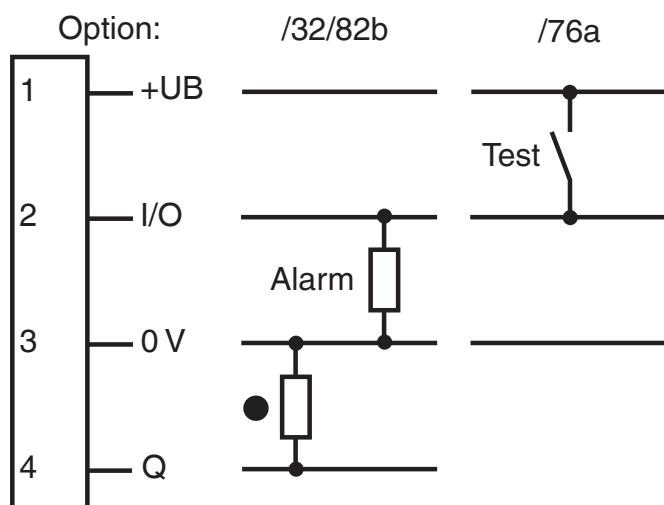
System components		
Emitter	VS18-M-LAS/76a/118	
Receiver	VSE18-M-LAS/32/40a/82b/118	
General specifications		
Effective detection range	0 ... 60 m	
Threshold detection range	85 m	
Light source	laser diode	
Light type	modulated visible red light	
Laser nominal ratings		
Note	LASER LIGHT , DO NOT STARE 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	
Opening angle	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		
Operation indicator	LED green, flashes in case of short-circuit	
Function indicator	LED yellow, light with free light beam , flashes when falling short of the stability control , OFF when light beam is interrupted (in receiver)	
Control elements	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
Protection class	II , rated voltage ≤ 50 V AC with pollution degree 1-2 according to IEC 60664-1	
Input		
Test input	emitter deactivation at +U _B	
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 _d	≤ 2.5 V DC
Switching frequency	f	5000 Hz
Response time	100 µs	
Conformity		
Product standard	EN 60947-5-2	
Compliance with standards and directives		
Standard conformity		
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		
EAC conformity	TR CU 020/2011	
UL approval	cULus Listed, Type 1 enclosure	

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

Technical Data

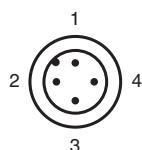
CCC approval	CCC approval / marking not required for products rated ≤ 36 V
Ambient conditions	
Ambient temperature	-25 ... 55 °C (-13 ... 131 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Shock resistance	$b < 30$ g, $T < 11$ ms
Mechanical specifications	
Degree of protection	IP67
Connection	4-pin, M12 x 1 connector
Material	
Housing	brass, nickel-plated
Optical face	plastic
Mass	60 g (device)

Connection Assignment



○ = Light on
● = Dark on

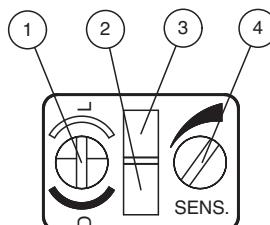
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

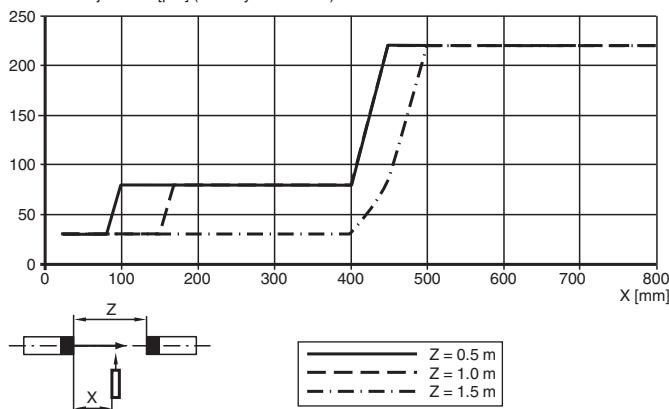
Assembly



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

Object detection

Minimum object size [μm] (stability control = 1)



Safety Information

Laser Class 1 Information

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.

Accessories

	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-PUR	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	V1-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey

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.