



**Model Number**

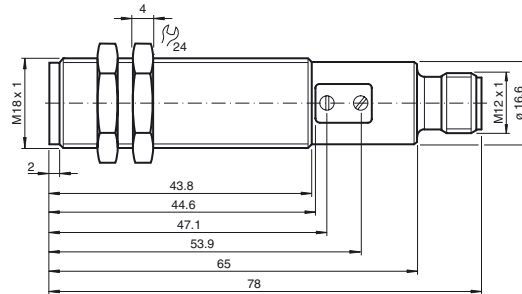
**VL18-54-M-LAS/40a/118/128**

Retroreflective sensor  
with 4-pin, M12 x 1 connector

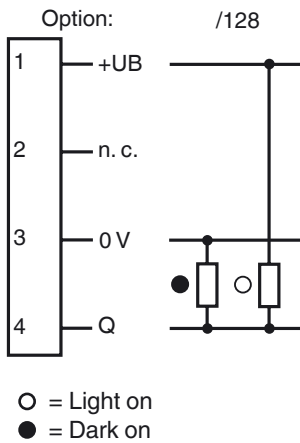
**Features**

- M18 threaded housing made of brass, nickel plated
- Visible red light, pulsed LASER light
- Array control panel with highly visible LED display
- Flashing power on LED in case of short-circuit
- Multiple device installation possible, no mutual interference
- Not sensitive to ambient light, even with switched energy saving lamps
- Protection class II

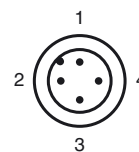
**Dimensions**



**Electrical connection**



**Pinout**



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Subject to modifications without notice

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**Technical data****General specifications**

Effective detection range	0 ... 18 m
Reflector distance	0.06 ... 18 m
Threshold detection range	20 m
Reference target	H85 reflector
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	7.5 mrad
Pulse length	4 $\mu$ s
Repetition rate	11.91 kHz
max. pulse energy	2.25 nJ
Diameter of the light spot	150 mm x 100 mm at a distance of 12 m
Angle of divergence	1 °
Optical face	frontal
Ambient light limit	30000 Lux
Hysteresis	H < 15 %

**Functional safety related parameters**

MTTF <sub>d</sub>	700 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

**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
Controls	Sensitivity adjuster, light/dark switch

**Electrical specifications**

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

**Output**

Switching type	light/dark on, switchable	
Signal output	Push-pull output short-circuit protected overvoltage protected	
Switching voltage	max. 30 V DC	
Switching current	max. 200 mA	
Voltage drop	U <sub>d</sub>	$\leq$ 2.5 V DC
Switching frequency	f	500 Hz
Response time		1 ms

**Ambient conditions**

Ambient temperature	-25 ... 55 °C (-13 ... 131 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)

**Mechanical specifications**

Protection degree	IP67
Connection	connector M12 x 1, 4-pin
Material	
Housing	brass, nickel-plated
Optical face	PMMA
Mass	60 g

**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**

Protection class	II, rated insulation voltage $\leq$ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	cULus Listed, Type 1 enclosure
CCC approval	Products with a maximum operating voltage of $\leq$ 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

**REF-MH23**

Reflector with Micro-structure, rectangular 23 mm x 13.8 mm, diagonal mounting hole

**REF-H85**

Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

**REF-H100**

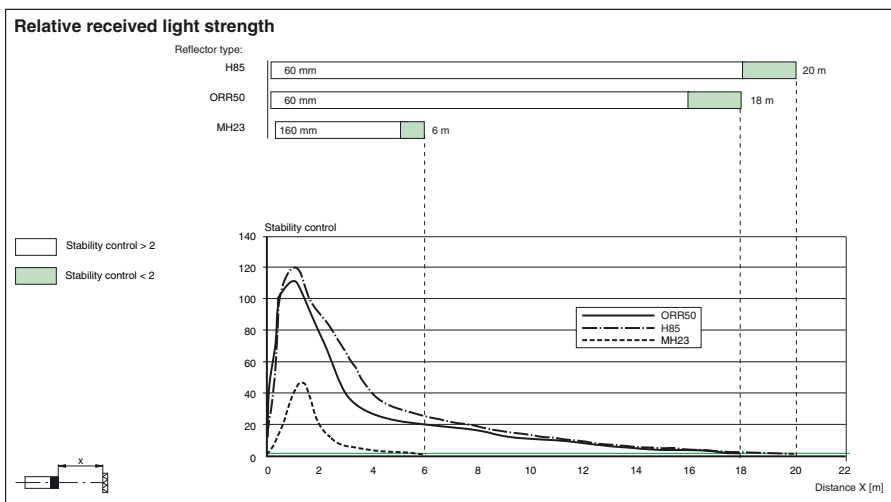
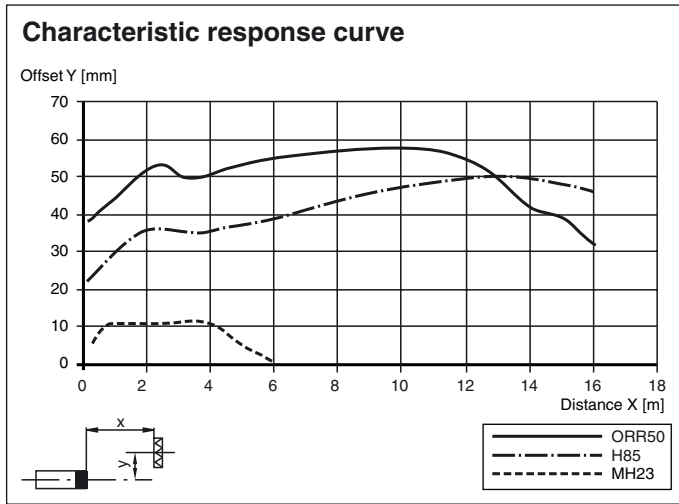
Reflector, rectangular 122 mm x 99.35 mm, mounting holes

**ORR50**

Reflector, rectangular 50.9 mm x 50.9 mm, mounting holes, fixing strap

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

**Curves/Diagrams**



**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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