



**Model Number**

**M41-F2/MV41-F2/76a/82b/92/103**

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

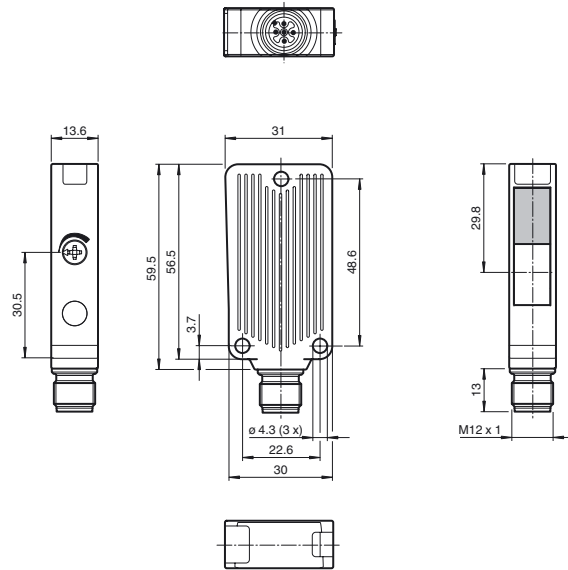
**Features**

- Rugged series in corrosion-resistant metal housing
- Long sensor range with high power mode
- Resistant against noise: reliable operation under all conditions
- Clear and functional display concept for the operating modes
- Aluminum housing with high quality Delta-Seal coated
- Scratch-resistant and solvent resistant glass lens

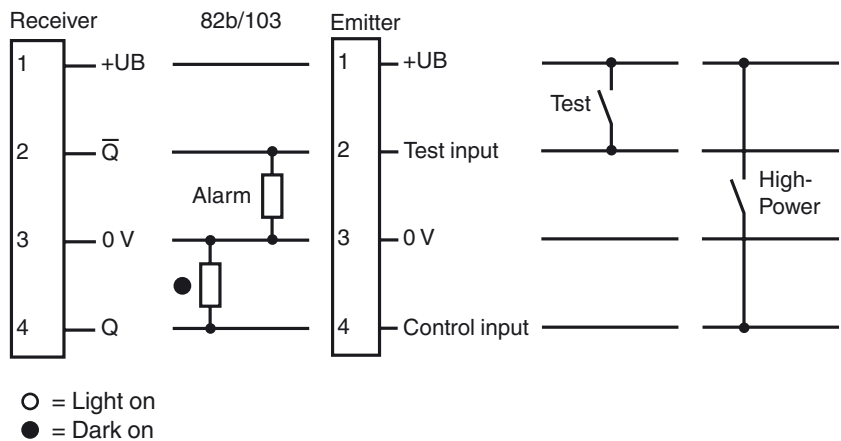
**Product information**

The unique and extremely popular design of the MLV41 series enables it be mounted correctly in confined areas and offers all the functions that are normally only found on larger phototelectric sensors. The MLV41 series comes with a range of functions. For example, highly visible status LEDs on the front and back, resistance to ambient light, crosstalk protection and universally applicable output stages that permit every possible switching logic and polarity to be realized. The enhanced resistance to ambient light ensures reliable operation even where modern energy-saving lamps with electronic ballasts are in use. The same applies where multiple devices are present, i.e. the use of a number of sensors in the same vicinity causes no problems.

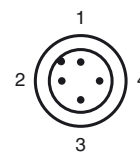
**Dimensions**



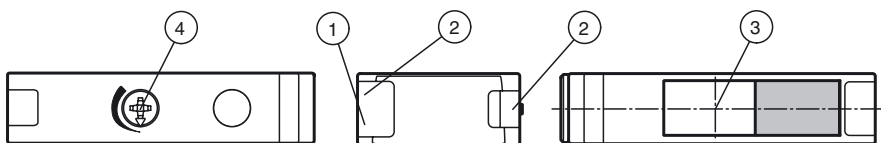
**Electrical connection**



**Pinout**



**Indicators/operating means**



1	Operating display green	2	Function display yellow	3	Optical axis
4	Sensitivity adjustment (only receiver)				

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

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

Emitter	M41-F2/76a/92
Receiver	MV41-F2/82b/92/103

**General specifications**

Effective detection range	0 ... 16 m
Threshold detection range	normal mode: 25 m High power mode: 35 m (Control input at UB+)
Light source	normal mode: LED High power mode: LED+IRED
Light type	normal mode: modulated visible red light High power mode: Red and infrared, modulated light
Diameter of the light spot	approx. 500 mm at detection range 16 m
Angle of divergence	approx. 1.5 °
Optical face	frontal
Ambient light limit	50000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	844 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

Operating display	LED green: power on
Function display	Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control ; OFF when light beam is interrupted
Controls	sensitivity adjustment (receiver)

**Electrical specifications**

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

**Input**

Test input	emitter deactivation at +U <sub>B</sub> (emitter)
Control input	High power mode activation with +UB (emitter)

**Output**

Pre-fault indication output	1 PNP, inactive when falling short of the stability control	
Switching type	dark on	
Signal output	1 PNP, short-circuit protected, reverse polarity protected, open collector	
Switching voltage	max. 30 V DC	
Switching current	max. 100 mA	
Voltage drop	U <sub>d</sub>	≤ 2.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms

**Ambient conditions**

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)

**Mechanical specifications**

Protection degree	IP67
Connection	connector M12 x 1, 4-pin
Material	
Housing	aluminum , Delta-Seal coated
Optical face	glass pane
Connector	metal
Mass	50 g (device)

**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
Standards	UL 508

**Approvals and certificates**

UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V

**Accessories****OMH-09**

Mounting bracket for Sensors series  
MLV41 for M12 rod mounting

**OMH-40**

Mounting bracket

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

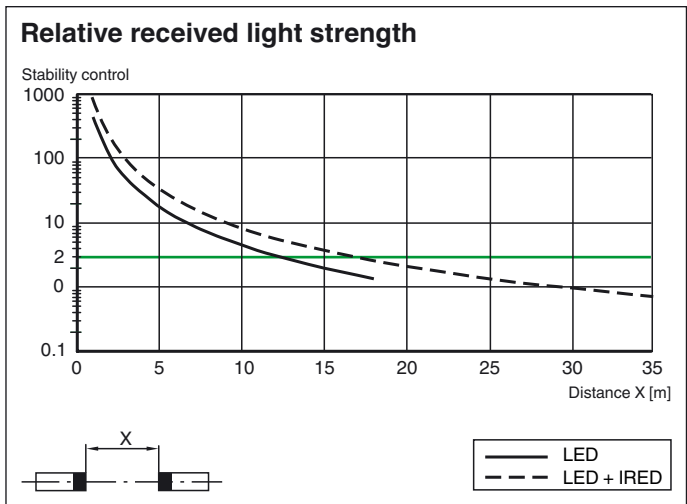
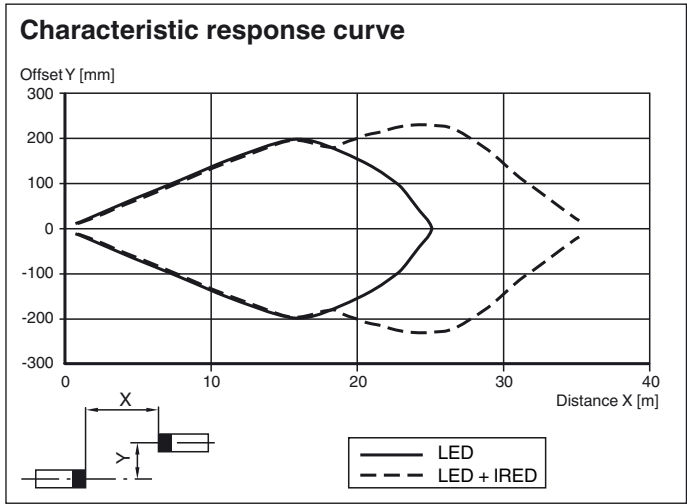
Female cordset, M12, 4-pin, PUR cable

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

Female cordset, M12, 4-pin, PUR cable

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

**Curves/Diagrams**



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