## Thru-beam sensor



CE **VISC**�

## **Model Number**

# M41/MV41/76a/82b/92/103 Thru-beam sensor

with 4-pin, M12 x 1 connector

## **Features**

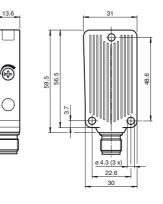
- Rugged series in corrosion-resistant • metal housing
- Long sensor range with high power ٠ mode
- Resistant against noise: reliable • operation under all conditions
- Clear and functional display concept ٠ for the operating modes
- Aluminum housing with high quality **Delta-Seal coated**
- Scratch-resistant and solvent resistant glass lens

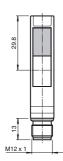
## **Product information**

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, protection and universally crosstalk 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** 

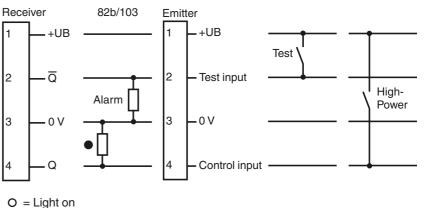






# **Electrical connection**

30.5



Wire colors in accordance with EN 60947-5-2

(brown (white)

(blue)

= Dark on 

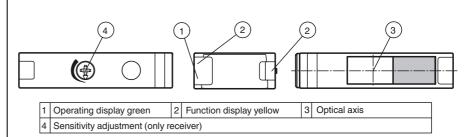
Pinout



# BN WH BU Bk (black)

2

# Indicators/operating means



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#### **EPPPERL+FUCHS** 1

Technical data       System components       Emitter     M4175a/92       General specifications     Effective detection range     0 16 m       Threshold detection range     0 16 m       Threshold detection range     0 16 m       Uight source     normal mode: 25 m High power mode: 12D High power mode: Red and Infrared, modulated tight app ower mode: 15 for Optical face       Diameter of the light spot     approx. 15 for Optical face     Three filter of the light spot       MTFrg     M44 a       Mission Time (Tag.)     20 a     Diameter of the light spot     approx. 15 for Optical face       Optical face     Three filter of the light spot     approx. 15 for Optical face     for the light spot       MTFrg     M44 a     Mission Time (Tag.)     20 a     Diameter of the light spot face face face face face face face face			
Entire     M417/2a32       Receiver     M417/2b192/103       General specifications     016 m       Threshold detection range     016 m       Threshold detection range     normal mode: 25 m High power mode: 1ED+IRED       Light source     normal mode: 25 m High power mode: 1ED+IRED       Light source     normal mode: 25 m High power mode: 1ED+IRED       Diameter of the light spot     approx.500 mm at detection range 16 m       Angle of divergence     approx.500 mm at detection range 16 m       Angle of divergence     approx.500 mm at detection range 16 m       MTTF_0     844 a       Mission Time (Trg)     20 a       Diagnostic Coverage (CD)     0%       Indicator/Spectrating means     EUC green: power on       Function indicator     LED green: power on       Function indicator     Receiver LED yellow, lights up when light beam is free. flashes when falling short of the stability control: OFF when light beam is firet.       Flapple     max. 10 %       No-load supply current     max. 10 %       No-load supply current     max. 10 %       No-load supply current     max. 10 %       Signal outpt     LPNP, inactive when falling short	Technical data		
Receiver     MV41/82b/92/103       General specifications     Elective detection range     0 16 m       Threshold detection range     0 16 m     normal mode:: 25 m. High power mode:: 35 m. (Control input at UB+)       Light source     normal mode:: LED High power mode:: 16 Hight power mode::	System components		
General specifications     16 m       Effective detection range     0 16 m       Threshold detection range     normal mode: ED High power mode: ED+HRED       Light source     normal mode: modulated visible real 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. 15 °       Cipical face     frontal       Ambient light limit     50000 Lux       Functional setty related parameters     Functional setty related parameters       MTTF <sub>0</sub> 844 a       Mission Time (Tr <sub>0</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicators/operating means     Cortrol elements       Control elements     sensitivity adjustment (receiver)       Electrical specifications     Operation yoinga       Operation yoinga     Ug     10 30 VDC, class 2       Ripple     max. 10 %       Ontrol input     High power mode activation with +UB (emitter)       Control nput     High power mode activation with +UB (emitter)       Output     PNP, inactive when falling short of the stability control       Switching requency <t< td=""><td></td><td></td><td></td></t<>			
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: modulated visible realight High power mode: Red and infrared, modulated visible realight High power mode: S0 m (Control Angle of divergence       Punctional safety related parameters     Functional safety related parameters       MTTFd     844 a       Mission Time (T <sub>40</sub> )     20 a       Diagnostic Coverage (DC)     %       Indicator     Elegreen: power on Functional safety related parameters       Mission Time (T <sub>40</sub> )     20 a       Deparation indicator     Elegreen: power on Receiver: LED yellow, lights up when light beam is interrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     sensitivity adjustment (receiver)       Portaling visitage     max. 10 %       No-load supply current     10     max. 30 mA       Imput     emitter deactivation at +Ug (emitter)       Output     1 PNP, inactive when falling s			MV41/82b/92/103
Threshold delection range normal mode: 25 m High power mode: 35 m (Control input at UB+)   Light source normal mode: 26 m High power mode: LED+IRED   Light type normal mode: LED High power mode: LED+IRED   Dameter of the light spot approx.500 mm at delection range 16 m   Angle of divergence approx.15.5 °   Optical face frontal   Ambient light spot 844 a   Mitsion Time (Tr <sub>k</sub> ) 20 a   Diagnostic Coverage (DC) 0 %   Indicators/Operating means ED green: power on   Function indicator LED green: power on   Function indicator LED green: power on   Function indicator Method spot when light beam is free. flashee when falling short of the stability control; OFF when light beam is free. flashee when falling short of the stability control; OFF when light beam is free. flashee when falling short of the stability control; OFF when light beam is free. flashee when falling short of the stability control; OFF when light beam is free. flashee when falling short of the stability control; OFF when light beam is free. flashee when falling short of the stability control; OFF when light power mode activation with +UB (emitter)   Control elements sensitivity adjustment (receiver)   Electrical specifications max. 10 %   Operating voltage max. 10 %   No-load supply current max. 10 %   Switching voltage max. 30 VDC   Switching volta	•		0.40 m
UB+UB+Light sourcenormal mode: LED High power mode: LED+INEDLight typenormal mode: LED High power mode: LED+INEDLight typenormal mode: LED High power mode: LED+INEDDiameter of the light spotapprox. 500 mm at detection range 16 mAngie of divergenceapprox. 15 °Optical facefrontalAmbient light limit50000 LuxFunctional safety related parametersMTTFgMTTFg844 aMission Time (Tw)20 aDiagnostic Coverage (DC)0 %Indicators/operating meansOperation indicatorOperation indicatorLED green: power onPunction indicatorLED green: power onPenction indicatorReceiver: LED yellow. light sup when light beam is free. flashes when halling short of the stability control : OFF when light beam is interruptedControl elementssensitivity adjustment (receiver)Electrical specificationsmax. 30 w DC, class 2Ripplemax. 10 %No-load supply current10High power mode activation with +UB (emitter)OutputHiPP, short-circuit protected, reverse polarity protected, open collectorSynd output1 PNP, short-circuit protected, reverse polarity protected, open collectorSwitching vortagemax. 100 mAVoltage dropVStorage temperature-40 60 °C (-40 140 °F)Storage temperature-40 60 °C (-40 140 °F)Storage temperature-40 60 °C (-40 140 °F)Ambient conditions-40 75 °C (-40 .	•		
Light type     normal mode: modulated visible red light High power mode: Red and infrared. modulated visible red light High power mode: Red and infrared. modulated visible red light High power mode: Red and Prox 1.5 °       Optical face     frontal       Angle of divergence     approx. 15 °       Optical face     frontal       Ambient light limit     50000 Lux       Functional addry related parameters     Functional addry related parameters       MTTF_d     844 a       Mission Time (T <sub>4</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicators/operating means     Operation indicator       Control elements     sensitivity adjustment (receiver)       Electrical specifications     enterrupted       Operating voltage     0 max. 30 vDC, class 2       Ripple     max. 30 vA       Input     enter deactivation at +Ug (entiter)       Control input     High power mode activation with +UB (entiter)       Output     IPNP, inactive when falling short of the stability control       Signal output     1 PNP, inactive when falling short of the stability control       Signal output     1 PNP, isont-circuit protected, reverse polarity protected, open collector       Signal output     1	Threshold detection range		
and infrared, modulated light     angle of the light spot     approx. 1.5 %       Angle of divergence     approx. 1.5 %     approx. 1.5 %       Anbient light limit     50000 Lux       Functional safety related parameters     Functional safety related parameters       MTTF <sub>d</sub> 844 a       Mission Time (T <sub>w</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicators Soperating means     LED green: power on       Function indicator     LED green: power on       Function indicator     Bescher: LED yathern light beam in free. flashes when talling shortow light up when light beam is free. flashes when talling shortow light up when light beam is free. flashes when talling short of the stability control (DFF when light beam is interrupted)       Control elements     sensitivity adjustment (receiver)       Electrical specifications     max. 10 %.       Operating voltage     U     max. 10 %.       No-load supply current     I     max. 30 mA       Input     emitter deactivation at +Ug (emitter)       Control input     I PNP, inactive when falling short of the stability control       Signal output     1 PNP, inactive when falling short of the stability control       Signal output     1 PNP, short-circuit prote	Light source		normal mode: LED High power mode: LED+IRED
Darester of the light spot approx. 5.5 °   Angle of divergence approx. 5.5 °   Optical face frontal   Ambient light limit 50000 Lux   Functional safety related parameters Ministrical Coverage (CO) 0 %   Indicators/operating means 0 %   Operation indicator LED green: power on   Function indicator Receiver. LED yellow, lights up when light beam is free, flashes when failing short of the stability control : OFF when light beam is interrupted   Control elements sensitivity adjustment (receiver)   Electrical specifications max. 10 %   No-load supply current 10 30 V DC, class 2   Ripple max. 30 mA   Input emitter deactivation at +Ug (emitter)   Control isput IPNP, inactive when falling short of the stability control   Signal output 1 PNP, inactive when falling short of the stability control   Signal output 1 PNP, inactive when falling short of the stability control   Signal output 1 PNP, inactive when falling short of the stability control   Signal output 1 PNP, short-circuit protected, reverse polarity protected, open collector   Switching voltage max. 30 vD C   Switching requency f 100 Hz   Response time -0 60 °C (40 140 °F)   Storage temperature <td< td=""><td>Light type</td><td></td><td></td></td<>	Light type		
Angle of divergence approx: 1.5 °   Optical face frontal   Ambient light limit 50000 Lux   Functional safety related parameters MTTFq   Mission Time (T <sub>M</sub> ) 20 a   Diagnostic Coverage (DC) 0 %   Indicators/operating means Coperation indicator   Function indicator LED green: power on   Function indicator Receiver: LED yellow, lights up when light beam is free, flashes when failing short of the stability control : OFF when light beam is interrupted   Control elements sensitivity adjustment (receiver)   Electrical specifications Operating voltage   Operating voltage U   No-load supply current I <sub>0</sub> nax: 10 % No-load supply current   Ip max: 10 %   No-load supply current I <sub>0</sub> max: 30 mA Input   Pre-fault indication output 1 PNP, inactive when failing short of the stability control   Switching voltage max: 100 mA   Voltage drop U <sub>d</sub> Voltage drop U <sub>d</sub> Switching voltage max: 100 mA   Switching voltage max: 30 VDC   Switching voltage max: 100 mA   Voltage drop U <sub>d</sub> Voltage drop U <sub>d</sub> Voltage drop <td>Diamater of the light shot</td> <td></td> <td>5</td>	Diamater of the light shot		5
Optical face     frontal       Ambient light limit     50000 Lux       Functional safety related parameters     MTTF,       MTTF,     844 a       Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicators/operating means     Operation indicator       Coperation indicator     LED green: power on       Function indicator     LED green: power on       Function indicator     Receiver. LED yellow, lights up when light beam is free, flashes when falling short of the stability control : OFF when light beam is interrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     max. 30 VDC, class 2       Ripple     max. 30 vA       Input     max. 30 mA       Input     Test input       Control input     I PNP, inactive when falling short of the stability control       Signal output     1 PNP, inactive when falling short of the stability control       Signal output     1 PNP, inactive when falling short of the stability control       Switching votage     max. 30 VD C       Signal output     1 PNP, short-circuit protected, reverse polarity protected, open       Switching requency			
Ambient light limit     50000 Lux       Functional safety related parameters     H       Mitting     844 a       Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicator Soperating means     Operation indicator       Operation indicator     LED green: power on       Function indicator     Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control ; OFF when light beam is instrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     Operating voltage       Operating voltage     Ug     10 30 V DC, class 2       Ripple     max: 10 %       No-load supply current     Ip max: 30 mA       Imput     emitter deactivation at +Ug (emitter)       Control input     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 frequency     f       Ambient conditions     max: 100 mA       Votage drop     Ug     ≤ 2 V DC       Switching frequency     f <td>• •</td> <td></td> <td></td>	• •		
Functional safety related parameters     Meters       MTTF_6     844 a       Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicator     ELD green: power on       Function indicator     Receiver. ED yellow, lights up when light beam is free, flashes when falling short of the stability control; OFF when light beam is interrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     max. 30 mA       No-load supply current l <sub>0</sub> max. 30 mA       Input     emiter deactivation at +U <sub>B</sub> (emitter)       Control loput     High power mode activation with +UB (emitter)       Control input     1 PNP, inactive when falling short of the stability control       Switching type     dark on       Signal output     1 PNP, inactive when falling short of the stability control       Switching voltage     max. 30 V DC       Switching voltage     max. 30 V DC       Switching voltage     max. 30 V DC       Switching voltage     0	•		
MTF.g 844 a   Mission Time (Tw) 20 a   Diagnostic Coverage (DC) 0 %   Indicators/operating means 20 a   Operation indicator LED green: power on   Function indicator Receiver: LED yellow, lights up when light beam is free, flashes when failing short of the stability control : OFF when light beam is interrupted   Control elements sensitivity adjustment (receiver)   Electrical specifications Operating voltage   Up max. 10 % max. 10 %   No-load supply current Ig   Input emitter deactivation at +Ug (emitter)   Control input High power mode activation with +UB (emitter)   Output 1 PNP, inactive when falling short of the stability control switching type   Signal output 1 PNP, short-circuit protected, reverse polarity protected, open collector   Switching voltage max. 30 V DC   Switching requency f   Yolage drop Ug   Voltage drop 0.5 ms   Ambient conditions   Ambient conditions   Housing width 31 mm   Housing depth 13.6 mm   Degree of protection HeF7   Connector metal   Mases 50 g (device)   Connector metal   Mases 50 g		eters	
Diagnostic Coverage (DC)     0 %       Indicators/operating means     Operation indicator     LED green: power on       Function indicator     Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control; OFF when light beam is interrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     Operating voltage       Operating voltage     UB     10 30 V DC, class 2       Ripple     max. 10 %       No-load supply current     ID     max. 30 mA       Input     emitter deactivation at +UB (emitter)     Control input       Pre-fault indication output     1 PNP, short-circuit protected, reverse polarity protected, open collector       Signal output     1 PNP, short-circuit protected, reverse polarity protected, open collector       Switching requency     f     1000 Hz       Response time     0.5 ms       Ambient temperature     -40 60 °C (-40 140 °F)       Storage temperature     -40 75 °C (-40 167 °F)       Mechanical specifications     Housing width       Dagree of potection     IP67       Control input     56.5 mm       Housing width     31 mm	• •		844 a
Indicators/operating means     LED green: power on       Peration indicator     LED green: power on       Function indicator     Receiver. LED yellow, lights up when light beam is free, flashes when falling short of the stability control ; OFF when light beam is interrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     Operating voltage       Operating voltage     Ug     1030 V DC, class 2       Ripple     max. 10 %       No-load supply current     Ig     max. 30 mA       Input     emitter deactivation at +Ug (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       Signal output     1 PNP, sinactive when falling short of the stability control     Signal output       Signal output     1 PNP, sinactive when falling short of the stability control     Signal output       Signal output     1 PNP, sinactive when falling short of the stability control       Switching voltage     max. 30 V DC       Switching user     max. 30 V DC       Switching current     max. 30 V DC       Switching requency     f     <	Mission Time (T <sub>M</sub> )		20 a
Operation indicator     LED green: power on Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control : OFF when light beam is interrupted       Control elements     sensitivity adjustment (receiver)       Electrical specifications     on 30 V DC, class 2       Operating voltage     Up       No-load supply current     10       Test input     max. 10 %       Control leut     Higple       Test input     emitter deactivation at +Up (emitter)       Control input     Higp power mode activation with +UB (emitter)       Control input     1 PNP, inactive when falling short of the stability control       Signal output     1 PNP, short-circuit protected, reverse polarity protected, open collector       Switching voltage     max. 30 V DC       Signal output     1 PNP, short-circuit protected, reverse polarity protected, open collector       Switching requency     f       Ambient conditions     Ambient conditions       Ambient conditions     Ambient conditions       Housing width     31 mm       Housing width     31 mm       Housing height     56.5 m       Housing depth     13.6 mm       Degree of protectio	Diagnostic Coverage (DC)		0 %
Function indicator   Rec <sup>1</sup> wor. LEO yellow, lights up when light beam is free, flashes when falling short of the stability control : OFF when light beam is interrupted     Control elements   sensitivity adjustment (receiver)     Electrical specifications   Operating voltage   Up     Operating voltage   Up   10 30 V DC , class 2     Ripple   max. 10 %     No-load supply current   10     Input   emitter deactivation at +Up (emitter)     Control input   Hiph power mode activation with +UB (emitter)     Control input   1 PNP, inactive when falling short of the stability control     Signal output   1 PNP, short-circuit protected, reverse polarity protected, open collector     Switching voltage   max. 30 V DC     Switching current   max. 30 V DC     Switching voltage   max. 30 V DC     Switching requency   f   1000 Hz     Response time   0.5 ms     Ambient temperature   40 60 °C (-40 140 °F)     Storage temperature   -40 75 °C (-40 167 °F)     Mechanical specifications	· -		
when falling short of the stability control ; OFF when light beam is interruptedControl elementssensitivity adjustment (receiver)Electrical specificationsUBOperating voltageUBRipplemax. 10 %No-load supply currentI0Inputemitter deactivation at +UB (emitter)Control inputemitter deactivation at +UB (emitter)OutputPre-fault indication outputPre-fault indication output1 PNP, inactive when falling short of the stability controlSwitching typedark onSignal output1 PNP, short-circuit protected, reverse polarity protected, open collectorSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching voltagemax. 30 V DCSwitching frequencyf1000 HzResponse timeAmbient conditions40 60 °C (40 140 °F)Storage temperature-40 75 °C (-40 167 °F)Mechanical specifications1967Housing depth31 mmHousing depth13.6 mnDegree of protection1967Connectorgalse paneConnectorgalse paneConnectorgalse paneConnectorgalse paneConnectorgalse paneConnectorgalse paneConnectorgalse paneConnectorSitendards andMaterialEN 60947-5-2:2007Standard conformityEN 60947-5-2:2007EN Conderticetes			
Electrical specifications   0perating voltage   UB   10 30 V DC, class 2     Ripple   max. 10 %     No-load supply current   0   max. 30 mA     Input   emitter deactivation at +UB (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 dark on     Signal output   1 PNP, short-circuit protected, reverse polarity protected, open collector     Switching output   max. 30 V DC     Switching requency   f     Voltage drop   Ud   £2.5 V DC     Switching frequency   f   1000 Hz     Response time   0.5 ms   Ambient conditions     Ambient conditions   -40 60 °C (-40 140 °F)   Storage temperature     Housing width   31 mm   1000 Hz     Housing height   56.5 mm   13.6 mm     Pogree of protection   IP67     Connector   metal     Mass   50 g (device)     Compliance with standards and directives   50 g (device)     Compliance with standards and directives   EN 60947-5-2:2007     Standard confor	Function indicator		when falling short of the stability control ; OFF when light beam
Operating voltage     UB     10 30 V DC , class 2       Ripple     max. 10 %       No-load supply current     I0     max. 30 mA       Input     emitter deactivation at +UB (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     1 PNP, short-circuit protected, reverse polarity protected, open collector       Switching voltage     max. 30 V DC     Max. 100 mA     Voltage drop     Ud     ≤ 2.5 V DC       Switching frequency     f     1000 Hz     Response time     0.5 ms       Ambient conditions     Housing frequency     f     1000 Hz     Response time     0.6 °C (-40 140 °F)       Storage temperature     -40 60 °C (-40 140 °F)     Storage temperature     -40 75 °C (-40 167 °F)       Mechanical specifications     Housing width     31 mm     Housing width     31 mm       Housing depth     13.6 mm     Gonector     Metanical     Gonector       Material     Aluminum, Delta-Seal coated     Optical face     Glase pane	Control elements		sensitivity adjustment (receiver)
Ripple   max. 10 %     No-load supply current   I0   max. 30 mA     Input   emitter deactivation at +Ug (emitter)     Control input   High power mode activation with +UB (emitter)     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 forquency   f     Voltage drop   Ud     Switching frequency   f     Mobient temperature   -40 60 °C (-40 140 °F)     Storage temperature   -40 60 °C (-40 140 °F)     Storage temperature   -40 60 °C (-40 140 °F)     Mousing width   31 mm     Housing width   51 mm     Housing depth   56.5 mm     Degree of protection   IP67     Connection   4-pin, M12 x 1 connector     Material   Masei     Mass   50 g (device)     Connector   metal     Mass   50 g (device)     Connection formity   EN 60947-5-2:2007     Standard conformity   EN 60947-5-2:2	Electrical specifications		
No-load supply current     Ig     max. 30 mA       Input        Test input     emitter deactivation at +Ug (emitter)       Control input     High power mode activation with +UB (emitter)       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. 30 v DC       Switching frequency     f       Voltage drop     Ud       Voltage drop     Ud       Storage temperature     40 60 °C (-40 140 °F)       Storage temperature     -40 60 °C (-40 140 °F)       Storage temperature     -40 75 °C (-40 167 °F)       Housing width     31 mm       Housing width     36 mm       Degree of protection     IP67       Connection     4-pin, M12 x 1 connector       Masi     50 g (device)       Connector     metal       Mass     50 g (device)       Cornection     90 gi (asis pane       Connec		UB	
Inputentiter deactivation at +UB (emitter)Test inputemitter deactivation with +UB (emitter)Control inputHigh power mode activation with +UB (emitter)OutputPre-faul indication output1 PNP, inactive when falling short of the stability controlSwitching typedark onSignal output1 PNP, short-circuit protected, reverse polarity protected, open collectorSwitching voltagemax. 30 V DCSwitching currentmax. 100 mAVoltage dropUd d ≤ 2.5 V DCSwitching frequencyfMesponse time0.5 msAmbient conditions-40 60 °C (-40 140 °F)Storage temperature-40 60 °C (-40 140 °F)Storage temperature-40 75 °C (-40 140 °F)Mechanical specifications1Housing width31 mmHousing depth13.6 mmDegree of protectionIP67ConnectormetalMaterial			
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 frequency   f     Voltage drop   U <sub>d</sub> Switching frequency   f     Mechanical specifications   0.5 ms     Ambient conditions   -40 60 °C (-40 140 °F)     Ambient specifications   -40 75 °C (-40 140 °F)     Housing width   31 mm     Housing width   56.5 mm     Housing depth   13.6 mm     Housing depth   13.6 mm     Housing depth   13.6 mm     Housing   Glass pane     Connector   metal     Mass   50 g (device)     Compliance with standards and directives   50 g (device)     Directive conformity   EN 60947-5-2:2007     EMC Directive 2004/108/EC   EN 60947-5-2:2007     Standard conformity		I <sub>0</sub>	max. 30 mA
Control inputHigh power mode activation with +UB (emitter)OutputPre-fault indication output1 PNP, inactive when falling short of the stability controlSwitching typedark onSignal output1 PNP, short-circuit protected, reverse polarity protected, open collectorSwitching voltagemax. 30 V DCSwitching currentmax. 100 mAVoltage dropU_dSvitching frequencyf1000 HzResponse time0.5 msAmbient conditionsHousing height31 mmHousing height56.5 mmHousing depth13.6 mmPogree of protection4pin, M12 x 1 connectorMaterial1967ConnectormetalMaterial50 g (device)ConnectormetalMass50 g (device)Standard conformityEN 60947-5-2:2007EMC Directive 2004/108/ECEN 60947-5-2:2007Standard conformityEN 60947-5-2:2007Froduct standardUL 508UL approvalcULsu Listed, Class 2 Power Source, Type 1 enclosure	•		amitter departication at (11 (amittar)
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. 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 conditions   -40 60 °C (-40 140 °F)     Storage temperature   -40 75 °C (-40 167 °F)     Mechanical specifications   -40 75 °C (-40 167 °F)     Housing width   31 mm     Housing depth   13.6 mm     Degree of protection   IP67     Connection   4-pin, M12 x 1 connector     Material   -4uminum , Delta-Seal coated     Optical face   glass pane     Connector   metal     Mass   50 g (device)     Compliance with standards and directives   50 g (device)     Directive conformity   EN 60947-5-2:2007     EMC Directive 2004/108/EC   EN 60947-5-2:2007 <	•		-
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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> Switching frequency f   1000 Hz Response time   Ambient conditions -40 60 °C (-40 140 °F)   Storage temperature -40 60 °C (-40 140 °F)   Storage temperature -40 75 °C (-40 167 °F)   Mechanical specifications Housing width   Housing width 31 mm   Housing depth 13.6 mm   Degree of protection IP67   Connection 4-pin, M12 x 1 connector   Material Housing   Housing Aluminum , Delta-Seal coated   Optical face glass pane   Connector metal   Mass 50 g (device)   Connector metal   Mass 50 g (device)   Connector EN 60947-5-2:2007   IERC Directive 2004/108/EC EN 60947-5-2:2007   Standard conformity EN 60947-5-2:2007   Product standard UL 508   UL approval cULus Listed, Class 2 Power Source, Type 1 enclosure	•		1 PNP. inactive when falling short of the stability control
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Approvals and certificates     UL approval   cULus Listed, Class 2 Power Source, Type 1 enclosure			IEC 60947-5-2:2007
UL approval CULus Listed, Class 2 Power Source, Type 1 enclosure			
CCC approval CCC approval / marking not required for products rated <36 V			
	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

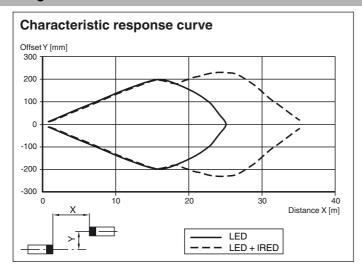
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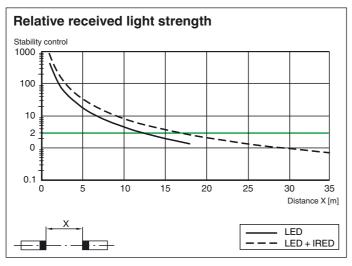
fa-info@us.pepperl-fuchs.com

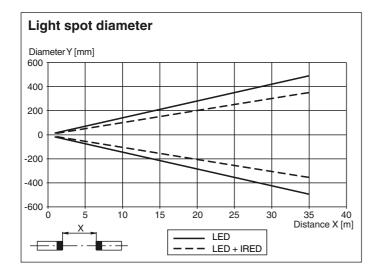
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# **Curves/Diagrams**







Refer to "General Notes Relating to Pepperl+Fuchs Product Information" Pepperl+Fuchs Group USA: +1 330 486 0001 www.pepperl-fuchs.com

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**EPPPERL+FUCHS** 3