Model Number

MLV41-6-IO/92/136

Retroreflective sensor
with 4-pin, M12 x 1 connector

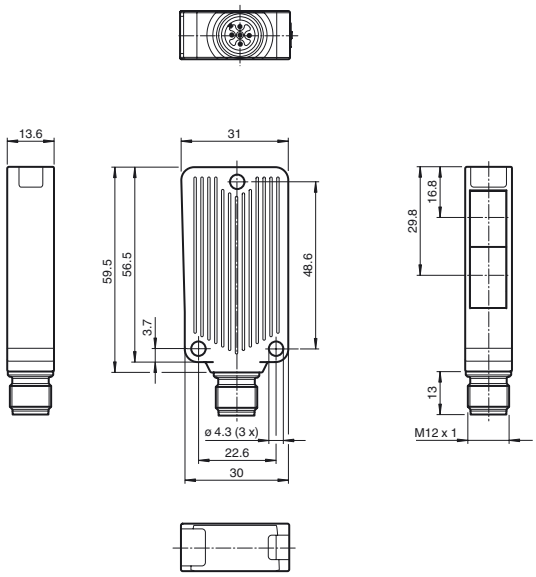
Features

- Rugged series in corrosion-resistant metal housing
- IO-link interface for service and process data
- Extremely high switching frequency
- Clear and functional display concept for the operating modes
- Resistant against noise: reliable operation under all conditions
- Aluminum housing with high quality Delta-Seal coated

Product information

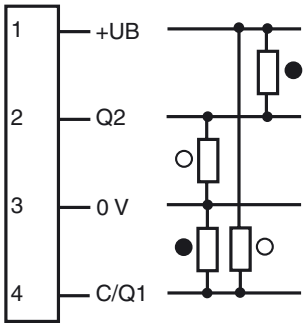
The unique and extremely popular design of the MLV41 series enables it be mounted correctly in confined areas and offers all the functions that are normally only found on larger photoelectric sensors. The MLV41 series comes with a range of functions. For example, highly visible status LEDs on the front 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



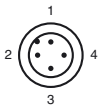
Electrical connection

Option:



○ = Light on
● = Dark on

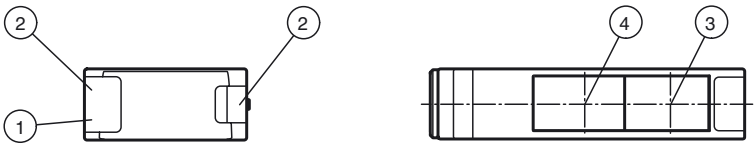
Pinout



Wire colors in accordance with EN 60947-5-2

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

Indicators/operating means



1	Operating display green	3	Optical axis transmitter
2	Function display yellow	4	Optical axis receiver

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Technical data

General specifications		
Effective detection range		0 ... 9.5 m
Reflector distance		Foil reflector 0.05 ... 3 m Retro-reflector 0.01 ... 9.5 m
Threshold detection range		12 m
Reference target		OFR-22800/76 , H85-2 reflector
Light source		LED
Light type		modulated visible red light , 625 nm
Polarization filter		no
Angle deviation		max. ± 1.5 °
Diameter of the light spot		approx. 300 mm at detection range 8.5 m
Angle of divergence		1.5 °
Optical face		frontal
Ambient light limit		20000 Lux
Functional safety related parameters		
$MTTF_d$		940 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz) , IO link communication: green LED goes out briefly (1 Hz)
Function indicator		LED yellow, lights up when light beam is free, flashes when falling short of the stability control
Control elements		none
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	max. 30 mA
Interface		
Interface type		IO-Link
Protocol		IO-Link V1.0
Mode		COM 2 (38.4 kBaud)
Output		
Signal output		2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U_d	≤ 2.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
Conformity		
Product standard		EN 60947-5-2
Ambient conditions		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
Mechanical specifications		
Housing width		31 mm
Housing height		56.5 mm
Housing depth		13.6 mm
Degree of protection		IP67
Connection		4-pin, M12 x 1 connector
Material		
Housing		Aluminum , Delta-Seal coated
Optical face		glass pane
Connector		metal
Mass		50 g
Approvals and certificates		
UL approval		cULus Listed 57M3 (Only in association with UL Class 2 power supply; 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

IO-Link-Master02-USB
IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

IO-Link-Master-USB DTM
Communication DTM for use of IO-Link-Master

IODD Interpreter DTM
Software for the integration of IODDs in a frame application (e. g. PACTware)

PACTware 4.1
FDT Framework

MLV41-6 IODD
IODD for communication with MLV41-6-IO-Link sensors

Other suitable accessories can be found at www.pepperl-fuchs.com

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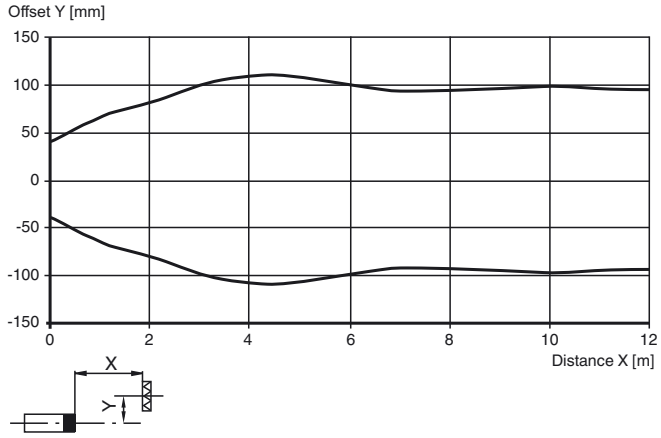
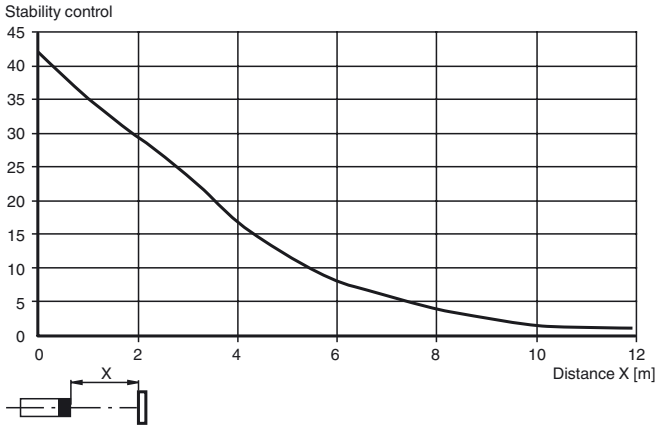
Curves/Diagrams

Characteristic response curve



Relative received light strength



IO link function

The IO link operating mode is indicated by the green LED indicator with a short interruption (f = 1 Hz). IO link communication simultaneously provides process data (measurement data from the sensor) and access to requirement data.
The requirement data contains the following information:

Identification:

- Manufacturer information
- Product ID
- User-specific ID

Device parameters:

- Teach-in parameters
- Operating parameters
- Configuration parameters
- Device commands

Diagnostic messages and warnings

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