



Model Number

MLV41-55-IO/98/103

Retroreflective sensor
with 3-pin, M8 x 1 connector

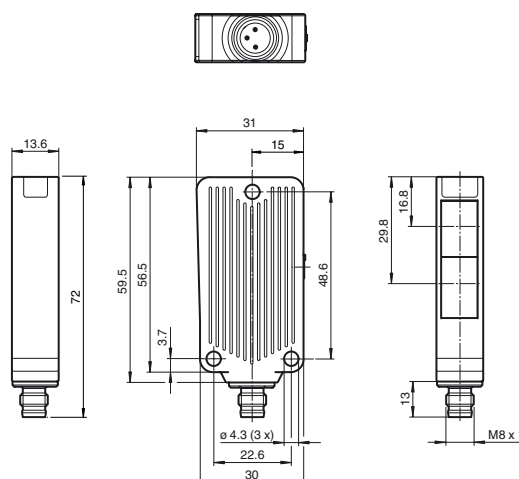
Features

- 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

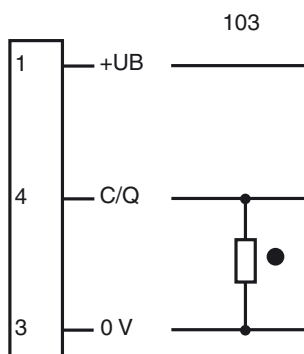
Product information

The unique and extremely popular design of the MLV41 series enables it to 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



○ = Light on
● = Dark on

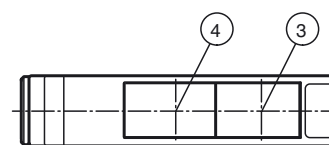
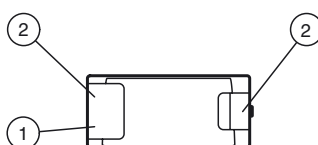
Pinout



Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 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 |

Technical data**General specifications**

| | |
|----------------------------|---|
| Effective detection range | 0 ... 7 m |
| Reflector distance | 0.1 ... 8 m |
| Threshold detection range | 10 m |
| Reference target | H85-2 reflector |
| Light source | LED |
| Light type | modulated visible red light , 625 nm |
| Polarization filter | yes |
| Angle deviation | max. $\pm 1.5^\circ$ |
| 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 | 844 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 | 1 PNP output, short-circuit protected, reverse polarity protected, open collector | |
| 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 | |

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 | M8 x 1 connector, 3-pin |
| Material | |
| Housing | Aluminum , Delta-Seal coated |
| Optical face | glass pane |
| Connector | metal |
| Mass | 50 g |

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 |

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

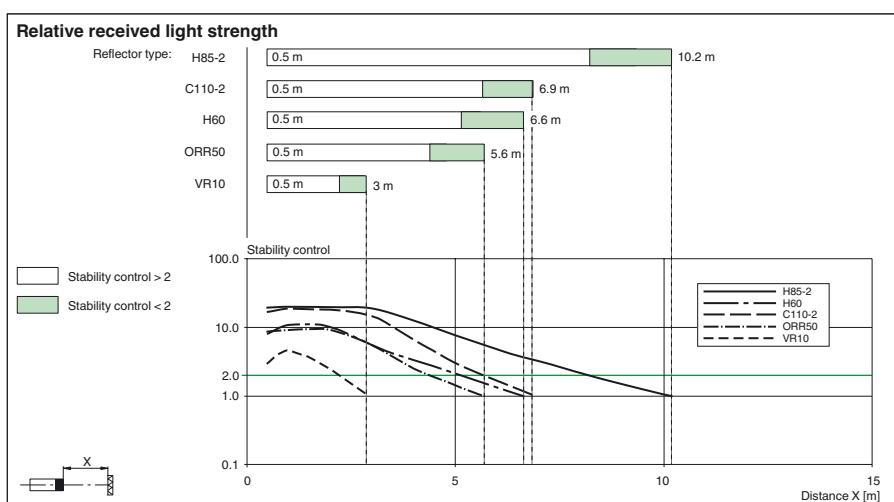
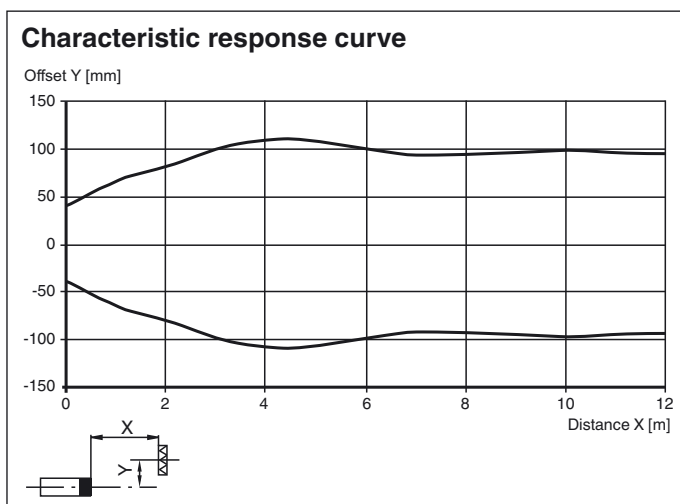
FDT Framework

MLV41-55 IODD

IODD for communication with MLV41-55-IO-Link sensors

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

Curves/Diagrams



IO link function

The IO link operating mode is indicated by the green LED indicator with a short interruption ($f = 1 \text{ Hz}$). 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