



## Retroreflective sensor MLV41-55-IO/92/136



- 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

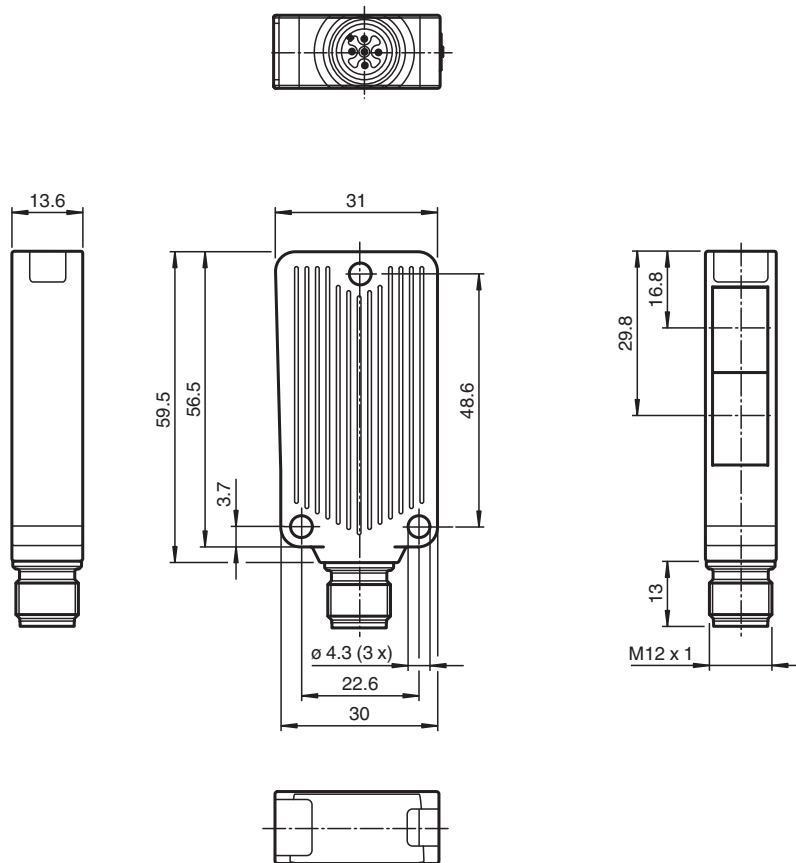
Robust retroreflective sensor with polarization filter, compact housing design, IO-Link interface, 8 m detection range, red light, 2 push-pull outputs, M12 plug



### Function

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 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



## Technical Data

General specifications	
Effective detection range	0 ... 8 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
Opening angle	$1.5^\circ$
Optical face	frontal
Ambient light limit	20000 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	
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 operating reserve

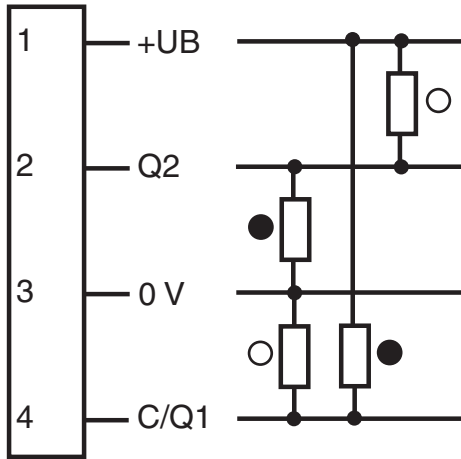
Release date: 2023-11-08 Date of issue: 2023-11-08 Filename: 221551\_eng.pdf

## Technical Data

Control elements		none
<b>Electrical specifications</b>		
Operating voltage	$U_B$	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	$I_0$	max. 30 mA
<b>Interface</b>		
Interface type		IO-Link
Protocol		IO-Link V1.0
Mode		COM2 (38.4 kBit/s)
<b>Output</b>		
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	$U_d$	$\leq 2.5$ V DC
Switching frequency	$f$	1000 Hz
Response time		0.5 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
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 $\leq 36$ V
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
<b>Mechanical specifications</b>		
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

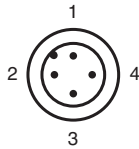
**Connection Assignment**

Option:



○ = Light on  
● = Dark on

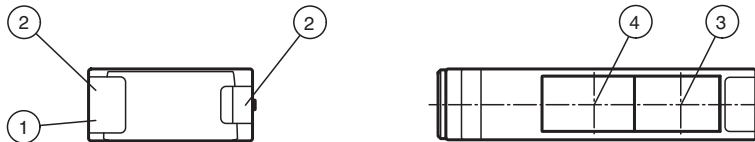
**Connection Assignment**



Wire colors in accordance with EN 60947-5-2

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

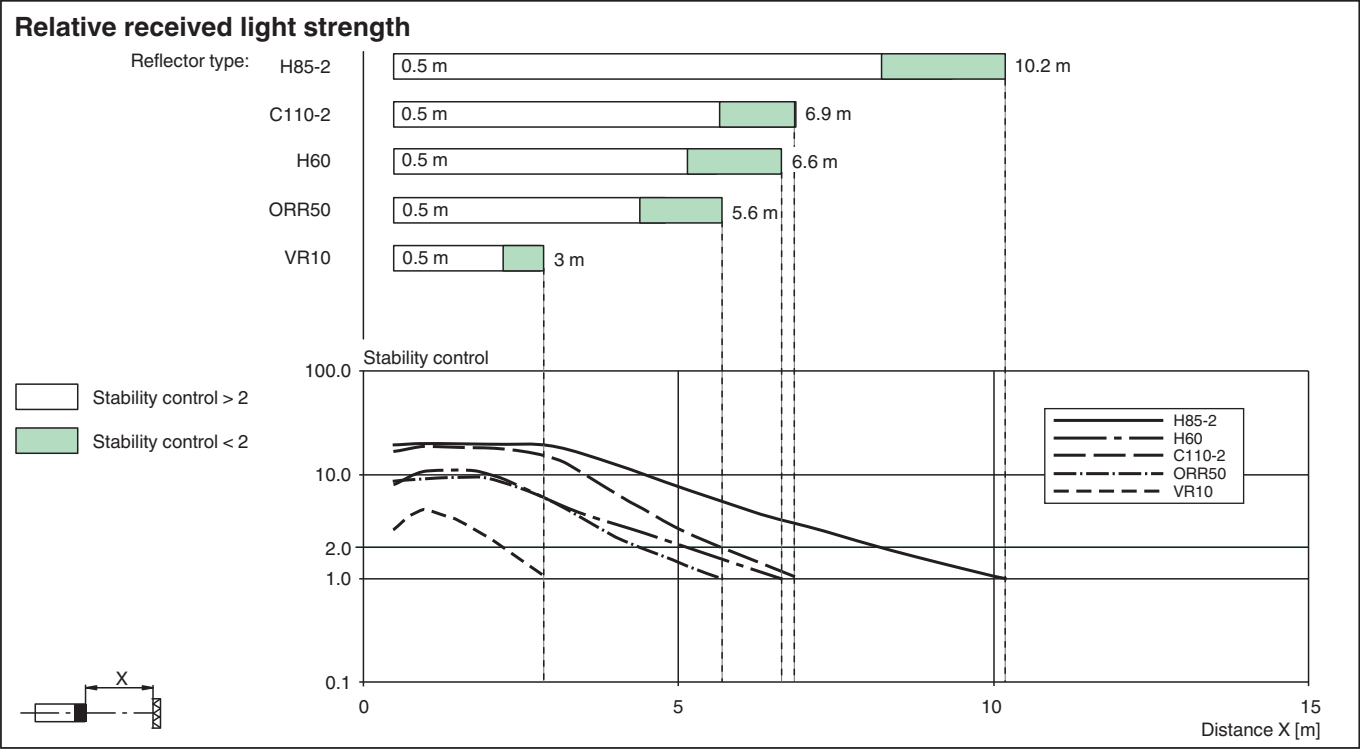
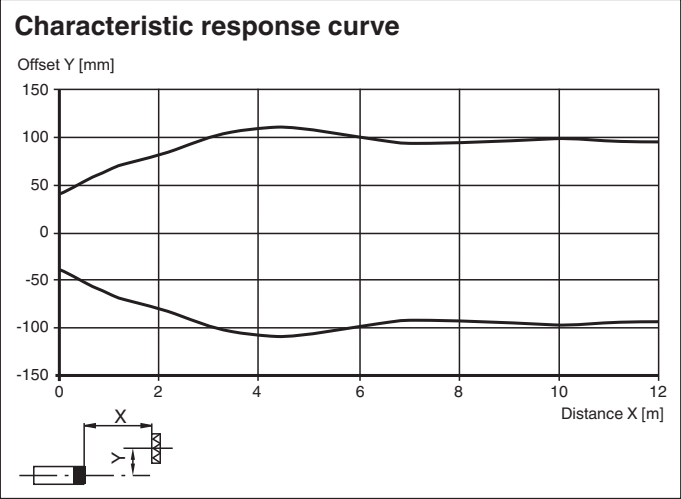
**Assembly**



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

Release date: 2023-11-08 Date of issue: 2023-11-08 Filename: 221551\_eng.pdf

**Characteristic Curve**



Release date: 2023-11-08 Date of issue: 2023-11-08 Filename: 221551\_eng.pdf

**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**