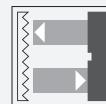


Retroreflective sensor



MLV41-55-IO/95/136



- 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

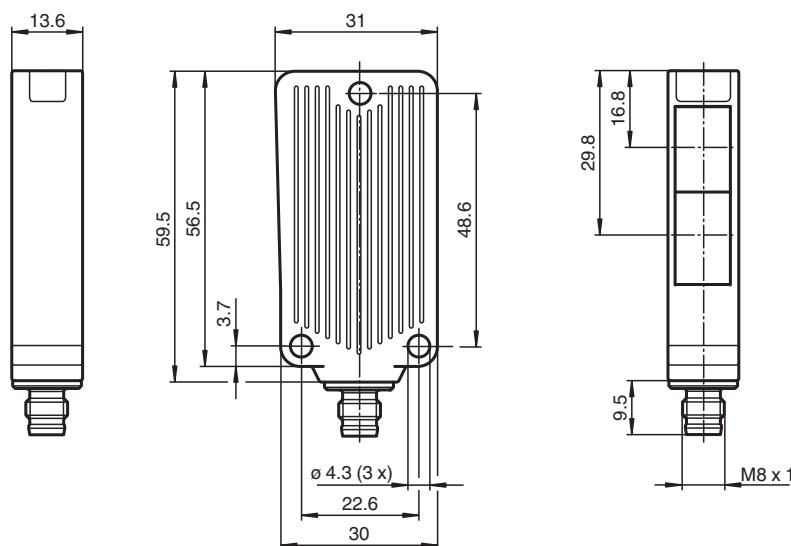
Robust retroreflective sensor with polarization filter, compact housing design, IO-Link interface, 8 m detection range, red light, 2 push-pull outputs, M8 plug



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 phototransistor 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

Technical Data

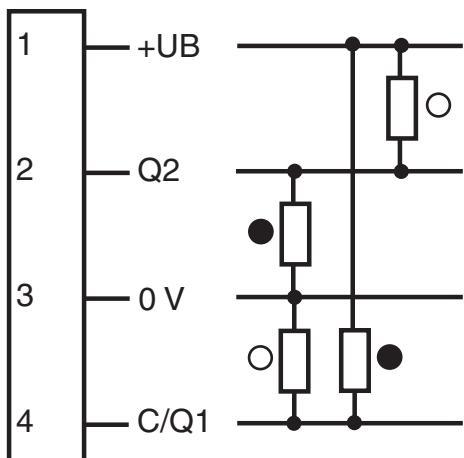
Threshold detection range	10 m	
Reference target		H85-2 reflector
Light source		LED
Light type		modulated visible red light , 625 nm
Polarization filter		yes
Angle deviation		max. $\pm 1.5^\circ$
Diameter of the light spot	approx. 300 mm at detection range 8.5 m	
Opening angle		1.5 $^\circ$
Optical face		frontal
Ambient light limit		20000 Lux
Functional safety related parameters		
MTTF _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		2 LEDs yellow for switching state , Operating reserve
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		COM2 (38.4 kBIt/s)
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
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
Ambient conditions		
Ambient temperature		-40 ... 60 $^\circ$ C (-40 ... 140 $^{\circ}$ F)
Storage temperature		-40 ... 75 $^\circ$ C (-40 ... 167 $^{\circ}$ 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, 4-pin
Material		
Housing		Aluminum , Delta-Seal coated
Optical face		glass pane

Technical Data

Connector	metal
Mass	50 g

Connection Assignment

Option:



○ = Light on
 ● = Dark on

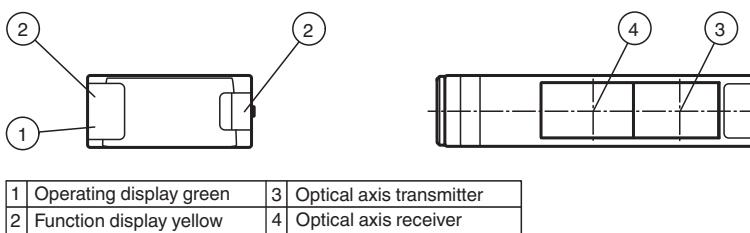
Connection Assignment



Wire colors in accordance with EN 60947-5-2

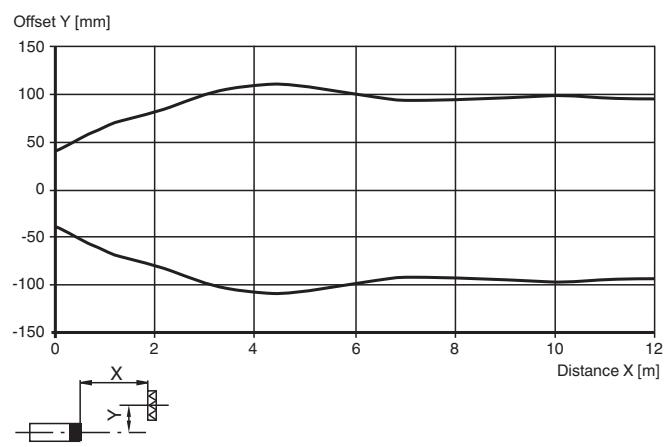
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Assembly



Characteristic Curve

Characteristic response curve



Relative received light strength

Reflector type: H85-2 0.5 m 10.2 m

C110-2 0.5 m 6.9 m

H60 0.5 m 6.6 m

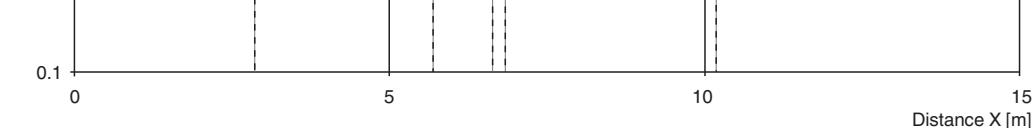
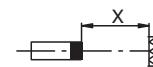
ORR50 0.5 m 5.6 m

VR10 0.5 m 3 m

Stability control > 2
Stability control < 2

Stability control

H85-2
H60
C110-2
ORR50
VR10



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