Model Number

MLV41-LL-IR/70/136

Fiber optic sensor
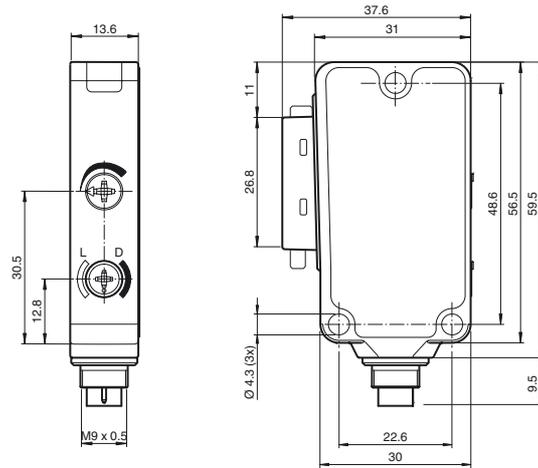
with 5-pin, M9 x 0.5 connector

Features

- Robust fiber optic sensor for reliable operation under all conditions
- Adjustable continuous sensitivity
- Easy fiber optic installation with quick-action clamping lock
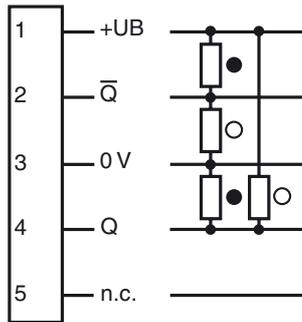- Aluminum housing with high-quality Delta Seal coating

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

1	+UB
2	$\overline{Q}$
3	0 V
4	Q
5	n.c.

Note:

In the case of replacements for MLV40, the differing pin assignment (EURO standard) must be taken into account
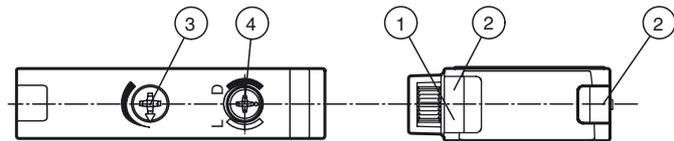
○ = Light on
● = Dark on

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	Sensing range adjuster
2	Function display yellow	4	Bright/dark switch

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical data

General specifications

Sensor range	on black (6 %): up to 55 mm on Kodak white, reflection factor 90% up to 160 mm with LLR 04-1.6-0.5-WC3 fiberoptic cable
Adjustment range	0 ... 160 mm on Kodak white, reflection factor 90%
Reference target	100 mm x 100 mm on Kodak white, reflection factor 90%
Light source	IRED
Light type	modulated infrared light , 880 nm

Functional safety related parameters

MTTF$_d$	770 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)
Function indicator	LED yellow, lights up with receiver lit ; flashes when falling short of the stability control
Control elements	Sensitivity adjuster, light/dark switch

Electrical specifications

Operating voltage	U$_B$	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I$_0$	max. 40 mA

Output

Switching type		light/dark on switchable The switching modes specified in the "Electrical Connection" section apply to L/D switches in the "D" position (dark switch)
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

Ambient conditions

Ambient temperature	-20 ... 60 °C (-4 ... 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
Fiber optic adapter	04
Degree of protection	IP67
Connection	with M9, 5-pin metal connector
Material	
Housing	Aluminum , Delta-Seal coated
Optical face	Fiber optic connection
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-41
Mounting bracket

ASK /70 KL.2000MM
Female cordset, M9, 5-pin, cable

ASK /78 KL.2000MM
Female cordset, M9, 5-pin, cable

LCR 04-1,6-0,5-Z1
Glass fiber optic - diffuse with PVC covering

LLR 04-1,6-0,5-G(M6x30)
Glass fiber optic - diffuse with metal silicone covering

LCR 04-1,6-0,5-WC 3
Glass fiber optic - diffuse with PVC covering

LLR 04-1,6-0,5-W C3
Glass fiber optic - diffuse with metal silicone covering

LCE 04-1,6-1,0-Z1
Glass fiber optic - thru-beam with PVC covering

LCE 04-1,6-1,0 G
Glass fiber optic - thru-beam with PVC covering

LLE 04-1,6-1,0-G
Glass fiber optic - thru-beam with metal silicone covering

LCE 04-1,6-1,0-W C3
Glass fiber optic - thru-beam with PVC covering

LLE 04-1,6-1,0-W C3
Glass fiber optic - thru-beam with metal silicone covering

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