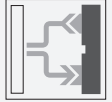




## Fiber optic sensor MLV41-LL-IR-1347



- 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

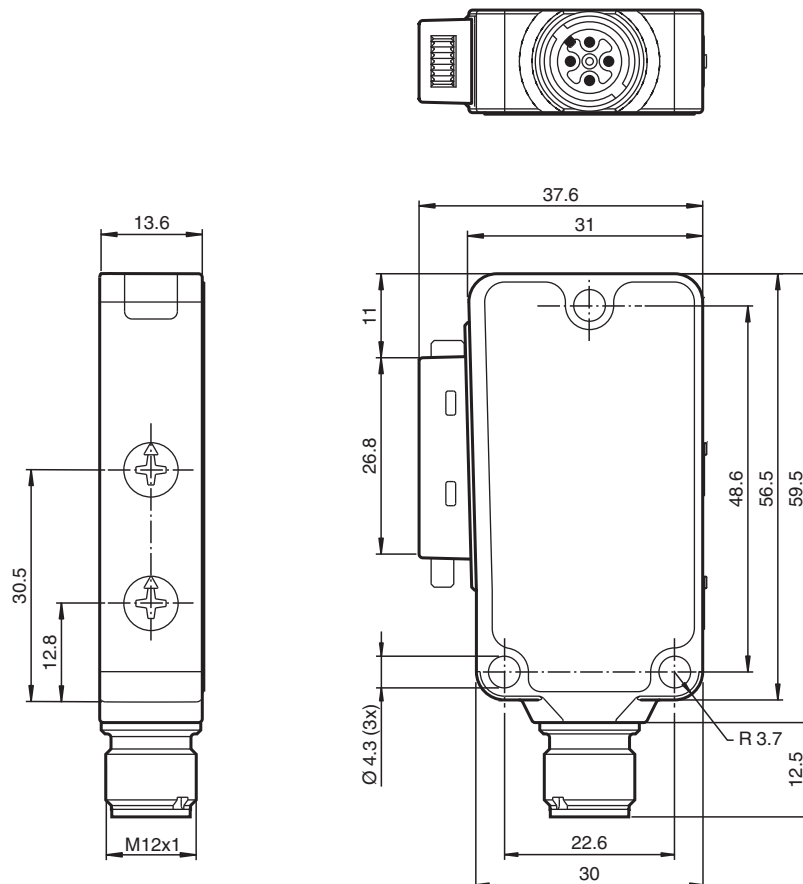
Robust fiber optic sensor for glass fiber optics, infrared light, PNP output, M12 plug



### Function

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 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



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

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**PEPPERL+FUCHS**

## Technical Data

### General specifications

|                  |                                                                                                                               |                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Sensor range     | on black (6 %): up to 55 mm<br>on Kodak white, reflection factor 90% up to 160 mm<br>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     |                                                                                                                               | IRE D                                                 |
| Light type       |                                                                                                                               | modulated infrared light , 880 nm                     |

### Functional safety related parameters

|                                |  |       |
|--------------------------------|--|-------|
| MTTF <sub>d</sub>              |  | 770 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) |                                                                                               |
| Function indicator  |                                                                                                                                                      | LED yellow, lights up with receiver lit ; flashes when falling short of the operating reserve |
| Control elements    |                                                                                                                                                      | Sensitivity adjuster, light/dark switch                                                       |

### Electrical specifications

|                        |                |                |
|------------------------|----------------|----------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC |
| Ripple                 |                | max. 10 %      |
| No-load supply current | I <sub>0</sub> | max. 40 mA     |

### Output

|                     |                                                                                                                                                           |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Switching type      | light/dark on switchable<br>The switching modes specified in the "Electrical Connection" section apply to L/D switches in the "L" position (light switch) |                                                                                   |
| 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 <sub>d</sub>                                                                                                                                            | ≤ 2.5 V DC                                                                        |
| Switching frequency | f                                                                                                                                                         | 1000 Hz                                                                           |
| Response time       |                                                                                                                                                           | 0.5 ms                                                                            |

### Conformity

|                  |  |              |
|------------------|--|--------------|
| Product standard |  | EN 60947-5-2 |
|------------------|--|--------------|

### Approvals and certificates

|                  |                                                                                                                           |                                                                                        |
|------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Protection class | II, rated voltage ≤ 50 V AC with pollution degree 1-2 according to IEC 60664-1 functional insulation acc. to DIN EN 50178 |                                                                                        |
| 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

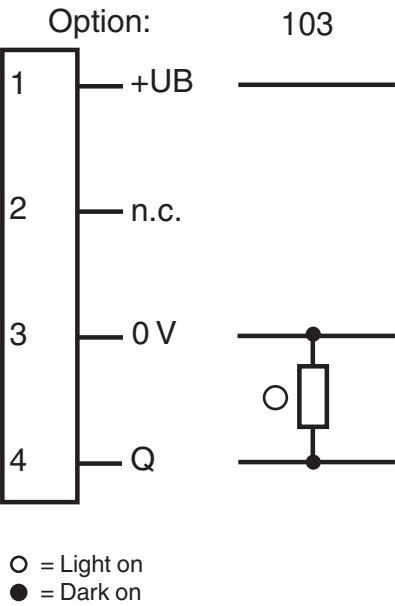
|                     |  |                                |
|---------------------|--|--------------------------------|
| Ambient temperature |  | -20 ... 60 °C (-4 ... 140 °F)  |
| Storage temperature |  | -40 ... 75 °C (-40 ... 167 °F) |

### Mechanical specifications

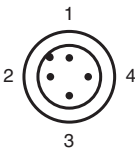
|                      |  |                              |
|----------------------|--|------------------------------|
| Housing width        |  | 31 mm                        |
| Housing height       |  | 56.5 mm                      |
| Housing depth        |  | 13.6 mm                      |
| Fiber optic adapter  |  | 04                           |
| Degree of protection |  | IP67                         |
| Connection           |  | 4-pin, M12 x 1 connector     |
| Material             |  |                              |
| Housing              |  | Aluminum , Delta-Seal coated |
| Optical face         |  | Fiber optic connection       |
| Connector            |  | metal                        |
| Mass                 |  | 50 g                         |

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Connection Assignment



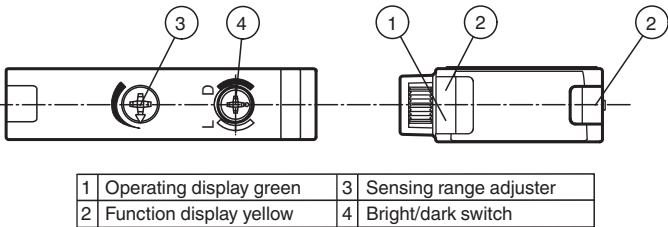
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Assembly



Accessories

|  |             |                                                                         |
|--|-------------|-------------------------------------------------------------------------|
|  | V1-G-2M-PUR | Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey |
|  | V1-W-2M-PUR | Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey   |

## Accessories

|                                                                                   |                                |                                                            |
|-----------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------|
|  | <b>LCR 04-1,6-0,5-Z1</b>       | Glass fiber optic - diffuse with PVC covering              |
|  | <b>LLR 04-1,6-0,5-G(M6x30)</b> | Glass fiber optic - diffuse with metal silicone covering   |
|  | <b>LCR 04-1,6-0,5-WC 3</b>     | Glass fiber optic - diffuse with PVC covering              |
|  | <b>LLR 04-1,6-0,5-W C3</b>     | Glass fiber optic - diffuse with metal silicone covering   |
|  | <b>LCE 04-1,6-1,0-Z1</b>       | Glass fiber optic - thru-beam with PVC covering            |
|  | <b>LCE 04-1,6-1,0 G</b>        | Glass fiber optic - thru-beam with PVC covering            |
|  | <b>LLE 04-1,6-1,0-G</b>        | Glass fiber optic - thru-beam with metal silicone covering |
|  | <b>LCE 04-1,6-1,0-W C3</b>     | Glass fiber optic - thru-beam with PVC covering            |
|  | <b>LLE 04-1,6-1,0-W C3</b>     | Glass fiber optic - thru-beam with metal silicone covering |