



**Model Number**

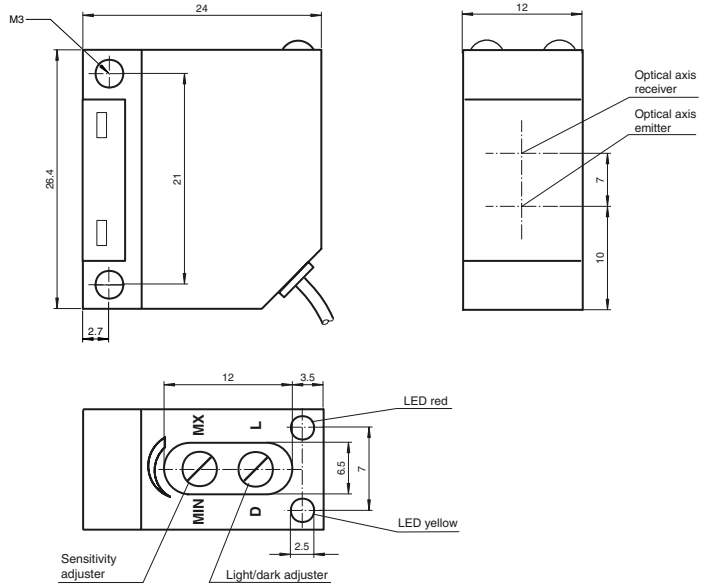
**ML5-8-400/32/33/115**

Diffuse mode sensor  
with fixed cable

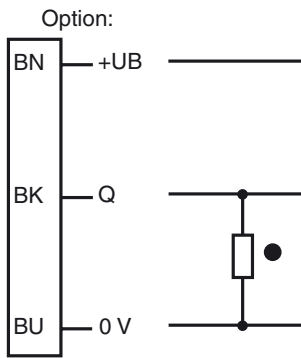
**Features**

- Miniature design
- Infrared light design
- Light/dark ON, switchable
- Pre-fault indication
- Protection degree IP67
- Thru-holes for screw mounting

**Dimensions**



**Electrical connection**



- Option:
- = Light on
  - = Dark on

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## Technical data

### General specifications

Detection range	0 ... 400 mm
Adjustment range	150 ... 400 mm
Reference target	standard white 100 mm X 100 mm
Light source	LED, infrared 950 nm
Light type	modulated infrared light
Approvals	CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)
Ambient light limit	≤ 20000 Lux sun light ≤ 5000 Lux halogen light

### Indicators/operating means

Function display	LED yellow: switching state LED red: pre-fault indication
Controls	Light/Dark switch, sensitivity adjuster

### Electrical specifications

Operating voltage	$U_B$	10 ... 30 V DC
Ripple		10 %
No-load supply current	$I_0$	≤ 30 mA

### Output

Switching type	light/dark on, switchable	
Signal output	1 PNP output, short-circuit protected, reverse polarity protected, open collector	
Switching voltage	max. 30 V DC	
Switching current	max. 200 mA	
Voltage drop	$U_d$	≤ 2.5 V
Switching frequency	$f$	≤ 500 Hz
Response time		1 ms

### Standard conformity

Standards	EN 60947-5-2
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### Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-25 ... 70 °C (-13 ... 158 °F)

### Mechanical specifications

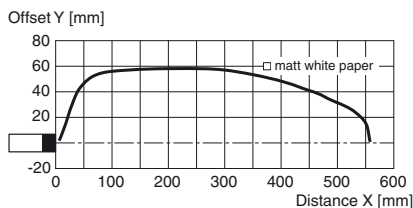
Protection degree	IP67 according to EN 60529
Connection	5 m PUR cable, 3 x 0.14 mm <sup>2</sup>
Material	
Housing	Polycarbonate
Optical face	PMMA
Mass	approx. 45 g

### Approvals and certificates

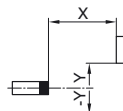
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.
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## Curves/Diagrams

### Characteristic response curve



Permissible distance (offset) between optical axis and object.



## Additional Information

### Conventional use:

The reflex light scanner contains the emitter and receiver in a single housing. The light from transmitter is beamed back from the recorded object is evaluated by the receiver. The detection range depends on the object colour. With dark or very small objects the detection range reduces.

**Mounting instructions:**

The sensor can be fastened over the through-holes directly or with a mounting bracket (not included in scope of supply). The base surface must be flat to avoid distorting the housing during mounting. It is advisable to secure the bolts and screws with washers so that the sensor does not become misaligned.

**Instructions for adjustment:**

Adjust the sensor to the background. If the yellow LED is on now, the detection range needs to be reduced with the detection range adjuster, until the yellow LED goes off.

**Object detection check:**

Position the object into the light beam. Position light spot on object. If the object is detected, the yellow LED is illuminated. If not, adjust the detection range with the potentiometer, until the yellow LED lights up. The red LED flashes if reception deteriorates (e.g. soiled lenses or by maladjustment) and when falling short of the stability control.

**Illustration:**

We recommend that you clean the optical interfaces and check the plug-in connections and screw connections at regular intervals.