



## Diffuse mode sensor ML7-8-200/25/102/115



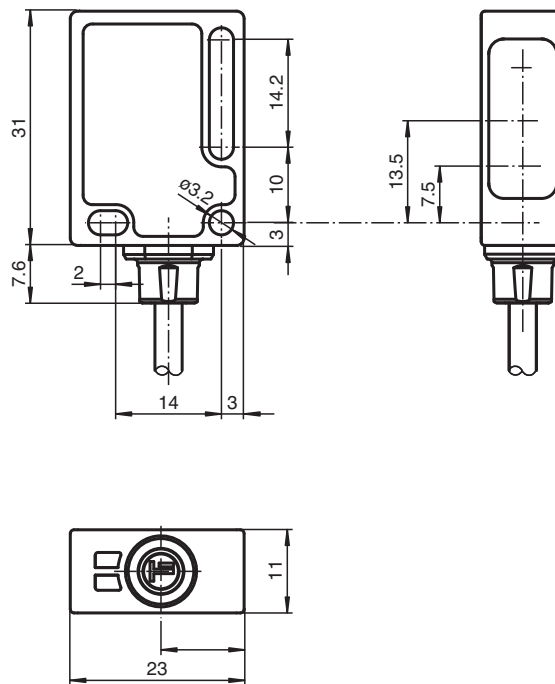
- Miniature design
- Automatic adjustment of sensitivity via TEACH-IN
- Clearly visible function indicators
- Flashing power on LED in case of short-circuit
- Not sensitive to ambient light
- Protected against mutual interference (no cross-talk)

Diffuse mode sensor, miniature design, 200 mm adjustable detection range, red light, light on, NPN output, fixed cable



### Function

## Dimensions



## Technical Data

### General specifications

Detection range	20 ... 200 mm
Adjustment range	60 ... 200 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light
Diameter of the light spot	approx. 15 mm at a distance of 200 mm
Angle of divergence	approx. 4.5 °
Ambient light limit	40000 Lux

### Functional safety related parameters

MTTF <sub>d</sub>	1610 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Indicators/operating means

Operation indicator	LED green, flashes in case of short-circuit
Function indicator	LED yellow, lights up with receiver lit
Control elements	Teach-In key

### Electrical specifications

Operating voltage	U <sub>B</sub>	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	< 20 mA

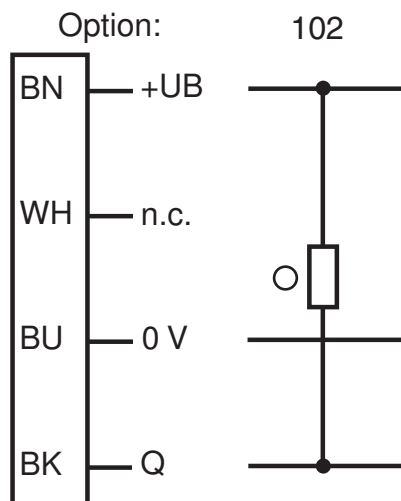
### Output

Release date: 2021-09-29 Date of issue: 2021-09-29 Filename: 127475\_eng.pdf

## Technical Data

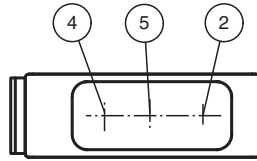
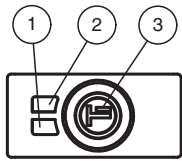
Switching type		light-on
Signal output		1 NPN output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	$U_d$	$\leq 1.5$ V DC
Switching frequency	$f$	1000 Hz
Response time		0.5 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
Protection class		II, rated voltage $\leq 250$ V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus
CCC approval		CCC approval / marking not required for products rated $\leq 36$ V
<b>Ambient conditions</b>		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
<b>Mechanical specifications</b>		
Housing width		23 mm
Housing height		31 mm
Housing depth		11 mm
Degree of protection		IP67 / IP69K
Connection		2 m fixed cable
Material		
Housing		PC (glass-fiber-reinforced Makrolon)
Optical face		PMMA
Mass		approx. 50 g

## Connection Assignment



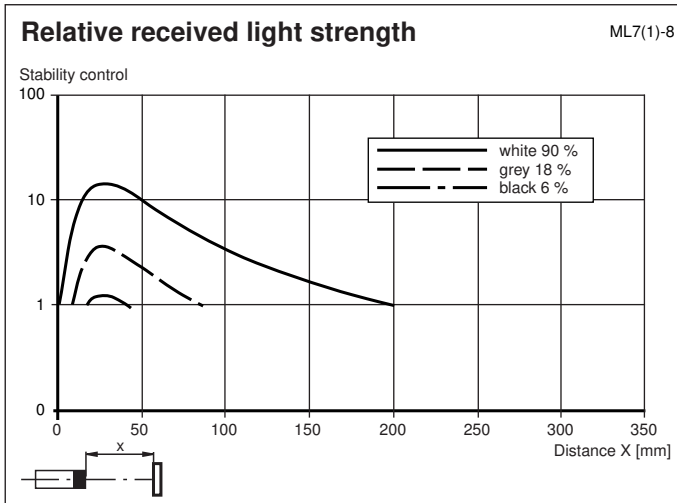
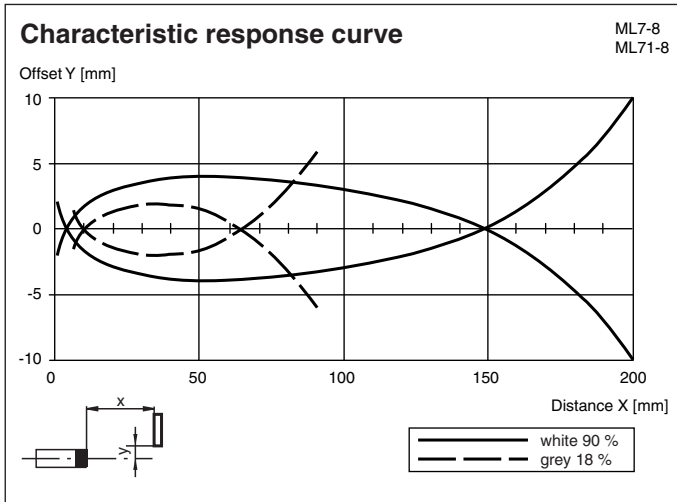
○ = Light on  
● = Dark on

## Assembly



1	Operating display	green
2	Signal display	yellow
3	TEACH-IN button	
4	Emitter	
5	Receiver	

## Characteristic Curve



## Accessories

	<b>OMH-ML7-01</b>	Mounting aid for ML7 and ML8 series, Mounting bracket
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**TEACH-IN**

Connect the sensor to operating voltage, the LED green lights up constantly. The sensor operates at max. sensitivity (delivery status) or with the last taught values.

- Adjust the unit to the target.
- Press the TEACH-IN button - as an acknowledge the green LED will switch off shortly for one time.
- Press the TEACH-IN button until both LED's green and yellow are blinking in parallel (2Hz). Release the TEACH-IN button now.
- While the green and yellow LEDs are blinking alternating (2Hz) the unit is in the internal set up procedure.
- **TEACH-IN successful:** Both LEDs green and yellow are on. The unit is ready to use and in switching mode now.
- **TEACH-IN not successful:** Both LEDs are flashing alternating (4Hz) for approx. 5 seconds. Afterwards the sensor returns to max. sensitivity setting. Please retry the TEACH-IN procedure beginning by step 1.