Dimensions

Model Number

ML7-54-G-3349

Retroreflective sensor
with 4-pin, M8 x 1 connector

Features

- Reliable sensor for standard applications
- Miniature design with versatile mounting options
- Reliable recognition of reflective objects and clear glass
- Two machines in one: clear object detection or reflection operating mode with long range
- TEACH-IN switch for setting the contrast detection levels
- Automatic adjustment in case of soiling in contrast detection mode
- Certified by ECOLAB

Product information

Small, robust, effective, and reliable - these are the properties of the ML7 sensor series. Due to their small size, number of versions, and two different lens positions, they are particularly suited for installation in tight spaces. The robust design and high quality of Pepperl+Fuchs mean they can also be used under harsh environmental conditions. The efficient technology, switching frequencies up to 1000 Hz, high resistance to ambient light, and 4-in-1 output make the series suitable for non-contact object detection.
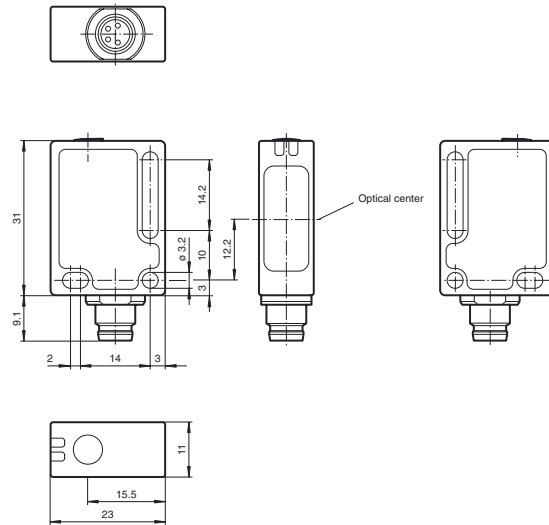
Electrical connection

Option:

○ = Light on
● = Dark on
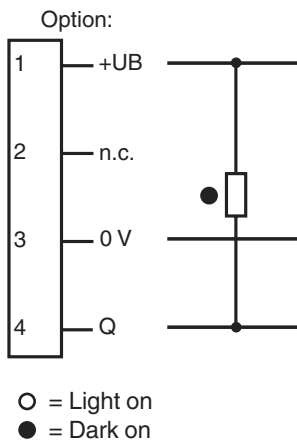
Indicators/operating means
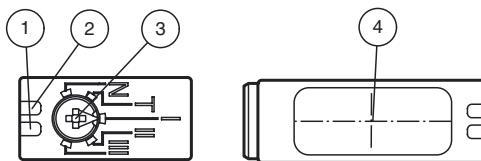
1	Operating display	green
2	Signal display	yellow
3	Teach-In	
4	Optical center	

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

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1

Technical data

General specifications

Effective detection range	0 ... 5.7 m
Reflector distance	0 ... 5.7 m
Threshold detection range	7.6 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light , 660 nm
Angle deviation	max. ± 1°
Diameter of the light spot	approx. 40 mm at detection range 1 m
Angle of divergence	1.7 °
Ambient light limit	40000 Lux

Functional safety related parameters

$MTTF_d$	980 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operating display	LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function display	LED yellow, lights up when light beam is free, flashes when falling short of the stability control

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 20 mA at 24 V DC

Output

Switching type		dark on
Signal output		1 NPN, short-circuit protected, open collector, not protected from reverse polarity
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U_d	≤ 0.3 V DC at load current ≤ 10 mA
Switching frequency	f	1 kHz
Response time		500 µs

Ambient conditions

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

Mechanical specifications

Protection degree	IP67 / IP69K
Connection	M8 x 1 connector, 4-pin
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	PMMA
Connector	plastic
Mass	10 g

Compliance with standards and directives

Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Noise immunity	The sensor must be protected from strong electromagnetic fields.
Standards	EN 50178, UL 508

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
CCC approval	CCC approval / marking not required for products rated ≤36 V

Accessories

Montagekit OMH-ML7-01
Mounting set consisting of bracket OMH-ML-01 sheet OMH-ML7-03, and fastening material

Montagekit OMH-ML7-02
Mounting set consisting of bracket OMH-ML-02 sheet OMH-ML7-03, and fastening material
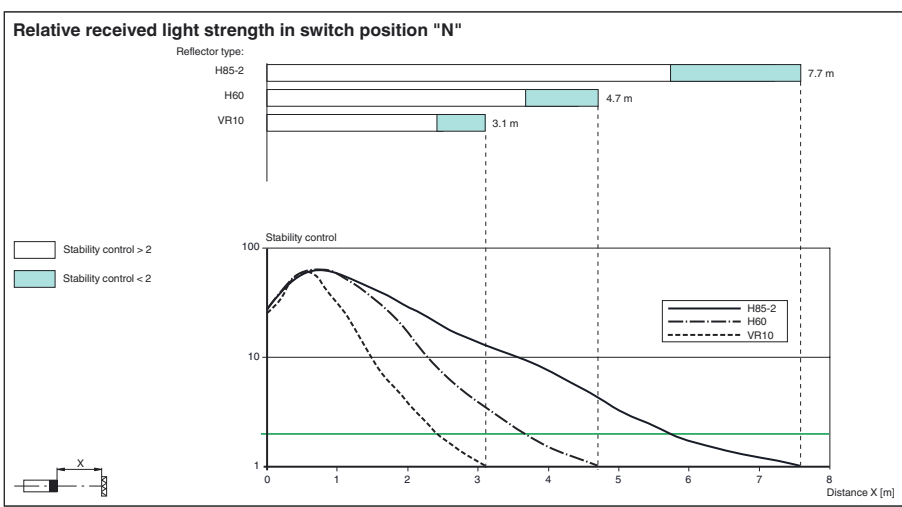
OMH-ML7-01
Mounting bracket

OMH-ML7-02
Mounting bracket

OMH-ML7-03
Fixing plate

Suitable reflectors and cable sockets can be found in the Internet

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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [m]

——	H85-2
—·—·—	H60
- - - -	VR10

Relative received light strength in switch position "N"

Reflector type:

H85-2 — 7.7 m
H60 — 4.7 m
VR10 — 3.1 m

☐ Stability control > 2
▨ Stability control < 2

Stability control

—·—·—	H85-2
—·—·—	H60
- - - -	VR10

Distance X [m]

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