Dimensions

Model Number

ML7-55-3419

Retroreflective sensor

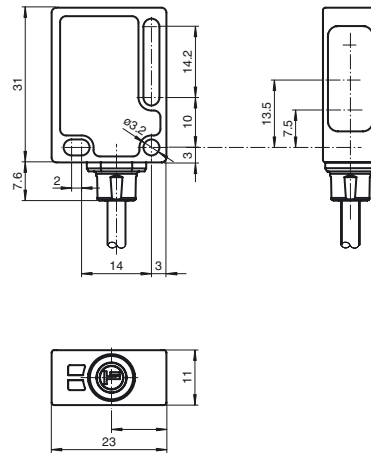1200 mm fixed cable with Mate-N-Lok connector

Features

- Reliable sensor for standard applications

- Miniature design with versatile mounting options

- Automatic adjustment of sensitivity via TEACH-IN

- Resistant against noise: reliable operation under all conditions

- Clear and functional display concept for the operating modes
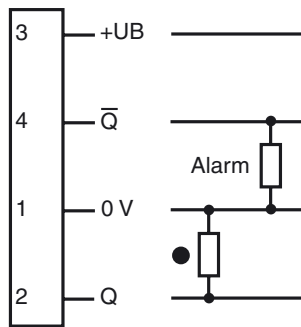
- Certified by ECOLAB

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

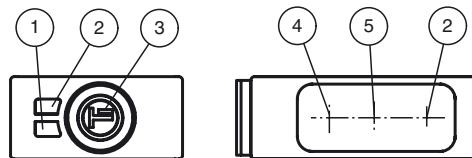○ = Light on
● = Dark on

Pinout

Indicators/operating means

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

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com | USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com | Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com | Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com | **PEPPERL+FUCHS** **1**

Technical data

General specifications

Effective detection range	0 ... 3 m
Reflector distance	0.03 ... 3 m
Threshold detection range	3.5 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light
Polarization filter	yes
Diameter of the light spot	approx. 180 mm at a distance of 3.5 m
Angle of divergence	approx. 3 °
Ambient light limit	40000 Lux

Functional safety related parameters

$MTTF_d$	1530 a
Mission Time (T_M)	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 when light beam is free, flashes when falling short of the stability control
Control elements	Teach-In key

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I_0	< 20 mA

Output

Pre-fault indication output	1 PNP, active when level falls below function reserve after approx. 5 s. Immediately active if the beam is interrupted 4 times during the flashtime.
Switching type	dark on
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_d ≤ 1.5 V DC
Switching frequency	f 1000 Hz
Response time	0.5 ms

Conformity

Product standard	EN 60947-5-2

Ambient conditions

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

Mechanical specifications

Housing width	23 mm
Housing height	31 mm
Housing depth	11 mm
Degree of protection	IP65
Connection	1200 mm fixed cable with Mate-N-Lok connector
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	PMMA
Mass	approx. 50 g

Approvals and certificates

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 aid for ML7 and ML8 series, Mounting bracket
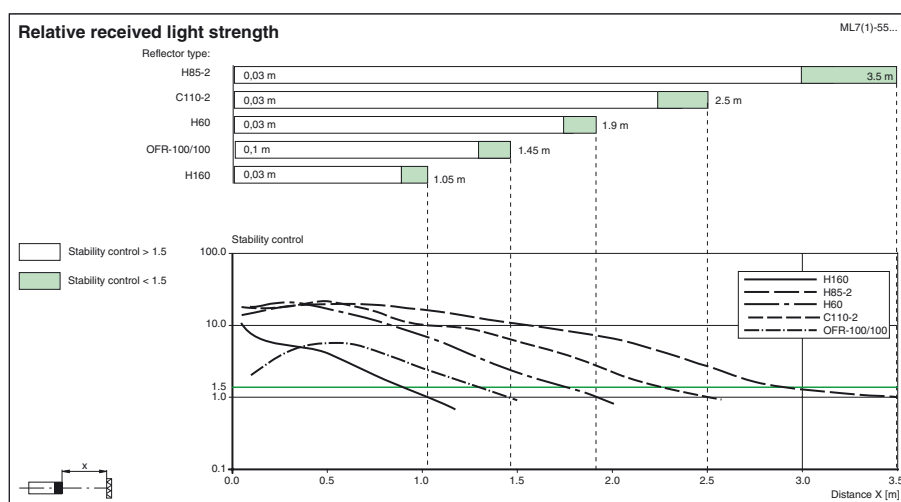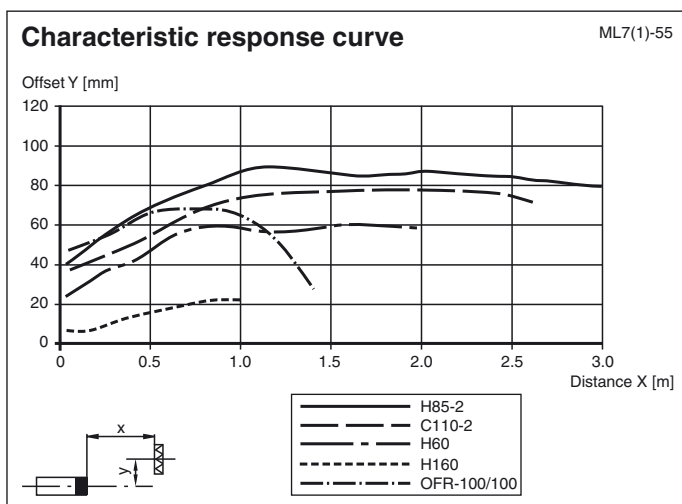
OMH-ML7-02
Mounting aid for ML7 and ML8 series, Mounting bracket

OMH-ML7-03
Mounting aid for ML7 and ML8 series, Fixing plate

Suitable reflectors and cable sockets can be found in the Internet

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

2

Curves/Diagrams

Characteristic response curve ML7(1)-55

Offset Y [mm]

Legend:
- H85-2
- C110-2
- H60
- H160
- OFR-100/100

Distance X [m]

Relative received light strength ML7(1)-55...

Reflector type:

H85-2	0,03 m	3.5 m
C110-2	0,03 m	2.5 m
H60	0,03 m	1.9 m
OFR-100/100	0,1 m	1.45 m
H160	0,03 m	1.05 m

Stability control > 1.5
Stability control < 1.5

Stability control

Legend:
- H160
- H85-2
- H60
- C110-2
- OFR-100/100

Distance X [m]

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 teached values.

Mount suitable reflector opposite light beam switch.

- Adjust the unit to the reflector.
- Press the Teach-In button - as an acknowledgement the green LED will quickly turn off one time.
- Press the Teach-In button until both LEDs green and yellow are blinking in parallel (2Hz). Release the Teach-In button now.
- While the green and yellow LEDs are blinking alternating (2 Hz) 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 (4 Hz) for approx. 5 seconds. Afterwards the sensor returns to max. sensitivity setting. Please retry the Teach-In procedure beginning by step 1.

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

Pepperl+Fuchs Group	USA: +1 330 486 0001	Germany: +49 621 776 1111	Singapore: +65 6779 9091	
www.pepperl-fuchs.com	fa-info@us.pepperl-fuchs.com	fa-info@de.pepperl-fuchs.com	fa-info@sg.pepperl-fuchs.com	**PEPPERL+FUCHS** 3