Model Number

RL91-6-IR/49/59/73c

Retroreflective sensor
with 4-pin, M12 x 1 plastic connector

Features
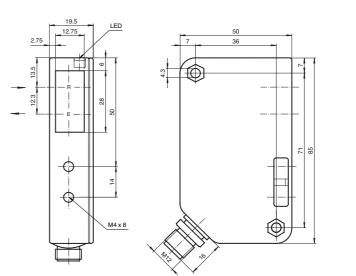
- Retroreflective sensor for single-beam closing edge protection
- Narrow housing suitable for small gaps
- Sturdy plastic housing
- Various possibilities for mounting
- Version with infrared light
- Version for supply voltage of up to 30 V DC
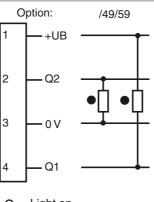- Dark on version

Product information

Concentration on the essentials is the hallmark of the 91 series. As ac/dc supply devices, these economical, reliable and easy-to-use photoelectric sensors can be used almost universally. Their narrow design means that they can be used in any environment.
The single-beam photoelectric sensors of the 91 series are suitable for closing-edge monitoring for elevators, barriers and doors, as well as for object detection and object tracking in material handling systems.
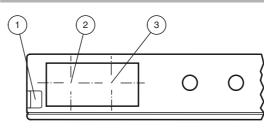
Dimensions

Electrical connection

Option: /49/59

○ = Light on
● = Dark on

Pinout

Wire colors in accordance with EN 60947-5-2

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

Indicators/operating means

1	Functional display	red
2	Optical axis Receiver	
3	Optical axis Transmitter	

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

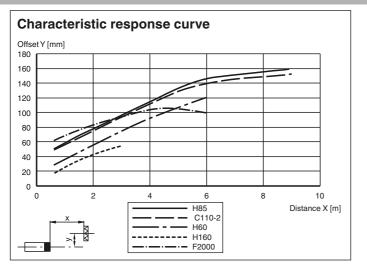USA: +1 330 486 0001
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Technical data

General specifications

Effective detection range	0 ... 6 m
Reflector distance	0 ... 6 m
Threshold detection range	9 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated infrared light
Diameter of the light spot	approx. 230 mm at a distance of 6000 mm
Angle of divergence	approx. 2.5 °
Ambient light limit	90000 Lux

Functional safety related parameters

$MTTF_d$	1083.4 a

Indicators/operating means

Function indicator	LED red, flashes when falling short of the stability control

Electrical specifications

Operating voltage	U_B	12 ... 30 V DC
No-load supply current	I_0	< 100 mA

Output

Switching type	dark on
Signal output	1 NPN, 1 PNP synchronized-switching, short-circuit protected, reverse polarity protected
Switching voltage	max. 30 V DC
Switching current	200 mA
Switching frequency	f	25 Hz
Response time	20 ms

Conformity

Product standard	EN 60947-5-2

Ambient conditions

Ambient temperature	-20 ... 55 °C (-4 ... 131 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

Mechanical specifications

Degree of protection	IP65
Connection	4-pin, M12 x 1 connector
Material	
Housing	Luran®
Optical face	Luran®
Mass	100 g

Approvals and certificates

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

Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [m]

— H85
– – C110-2
–·– H60
----- H160
–··– F2000

Typical applications

- Closing-edge monitoring for elevators, barriers and industrial doors
- Detecting and tracking objects in material handling

Detection area
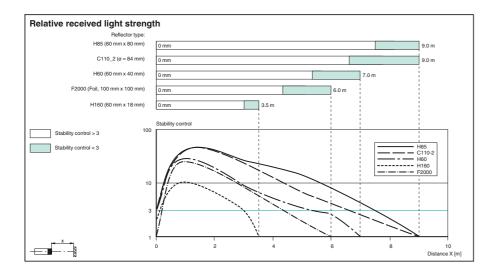

Accessories

OMH-91
Mounting bracket

Other suitable accessories can be found at www.pepperl-fuchs.com

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

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Relative received light strength

Reflector type:

H85 (80 mm x 80 mm)	0 mm	9.0 m
C110_2 (ø = 84 mm)	0 mm	9.0 m
H60 (60 mm x 40 mm)	0 mm	7.0 m
F2000 (Foil, 100 mm x 100 mm)	0 mm	6.0 m
H160 (60 mm x 18 mm)	0 mm	3.5 m

Stability control > 3

Stability control < 3

Stability control

H85
C110-2
H60
H160
F2000

Distance X [m]

Operating principle

The retroreflective sensor contains the transmitter and receiver in a single housing. The light from transmitter is beamed back from a reflector to the receiver. If an object interrupts the light beam the switching function is initiated.

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

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