



Retroreflective sensor RL39-54/30/40a/116/126a

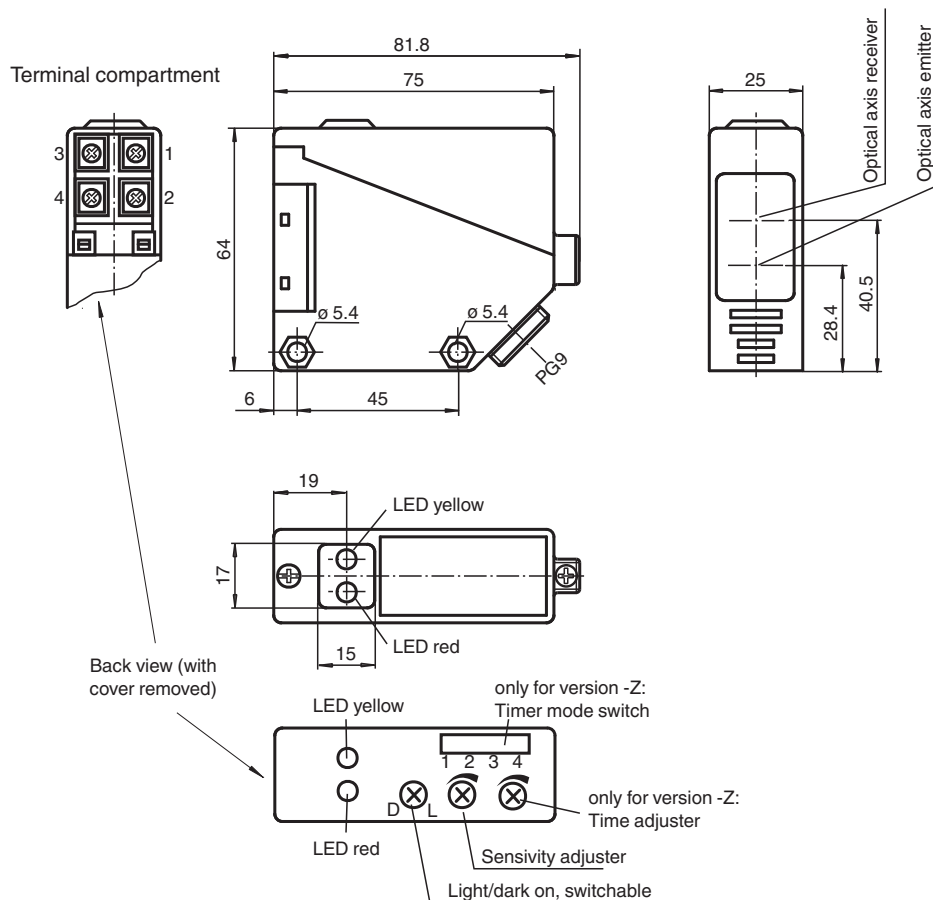


- Glare protected with polarization filter
- Visible red light
- Light-on/dark-on, switchable
- Degree of protection IP54

Retroreflective sensor for standard applications, polarization filter, detection range 12 m, red light, sensitivity adjuster, light/dark on, prefault output, NPN output, terminal compartment



Dimensions



Release date: 2024-03-28 Date of issue: 2024-03-28 Filename: 088818_eng.pdf

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

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Technical Data

General specifications

Effective detection range	0 ... 5 m
Reflector distance	0.1 ... 5 m
Threshold detection range	6 m
Reference target	H50 reflector
Light source	LED red
Light type	modulated visible red light
Polarization filter	yes
Ambient light limit	IEC / EN 60947-5-2 , 10000 Lux

Functional safety related parameters

MTTF _d	800 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function indicator	LED yellow: switching state LED red: pre-fault indication
Control elements	Sensing range adjuster, light-on/dark-on changeover switch

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I ₀	≤ 20 mA
Time delay before availability	t _v	≤ 300 ms

Output

Stability alarm output		1 NPN, active when falling short of the stability control
Switching type		light/dark on
Signal output		1 NPN output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 200 mA , resistive load
Voltage drop	U _d	≤ 3 V
Switching frequency	f	≤ 300 Hz
Response time		≤ 1.5 ms

Conformity

Product standard	EN 60947-5-2
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Approvals and certificates

Approvals	CE
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Ambient conditions

Ambient temperature	-25 ... 55 °C (-13 ... 131 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

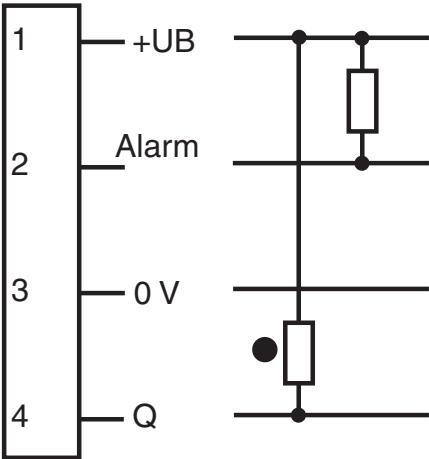
Degree of protection	IP54
Connection	terminal compartment PG9 , ≤ 0.75 mm ²
Material	
Housing	PBT
Optical face	PMMA
Mass	approx. 100 g
Dimensions	
Height	64 mm
Width	25 mm
Depth	75 mm

General information

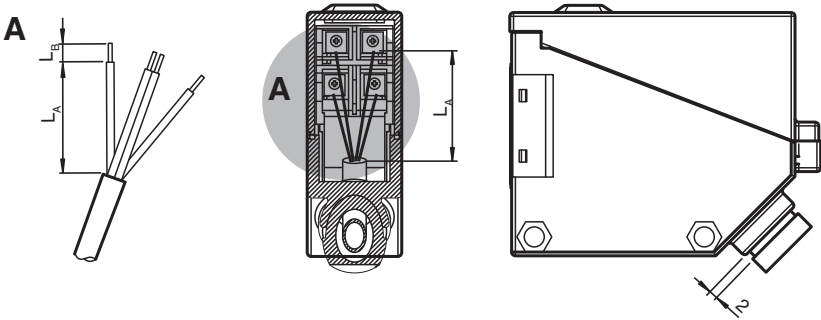
Scope of delivery	Mounting aid , Reflector
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Connection Assignment

Option:



Installation

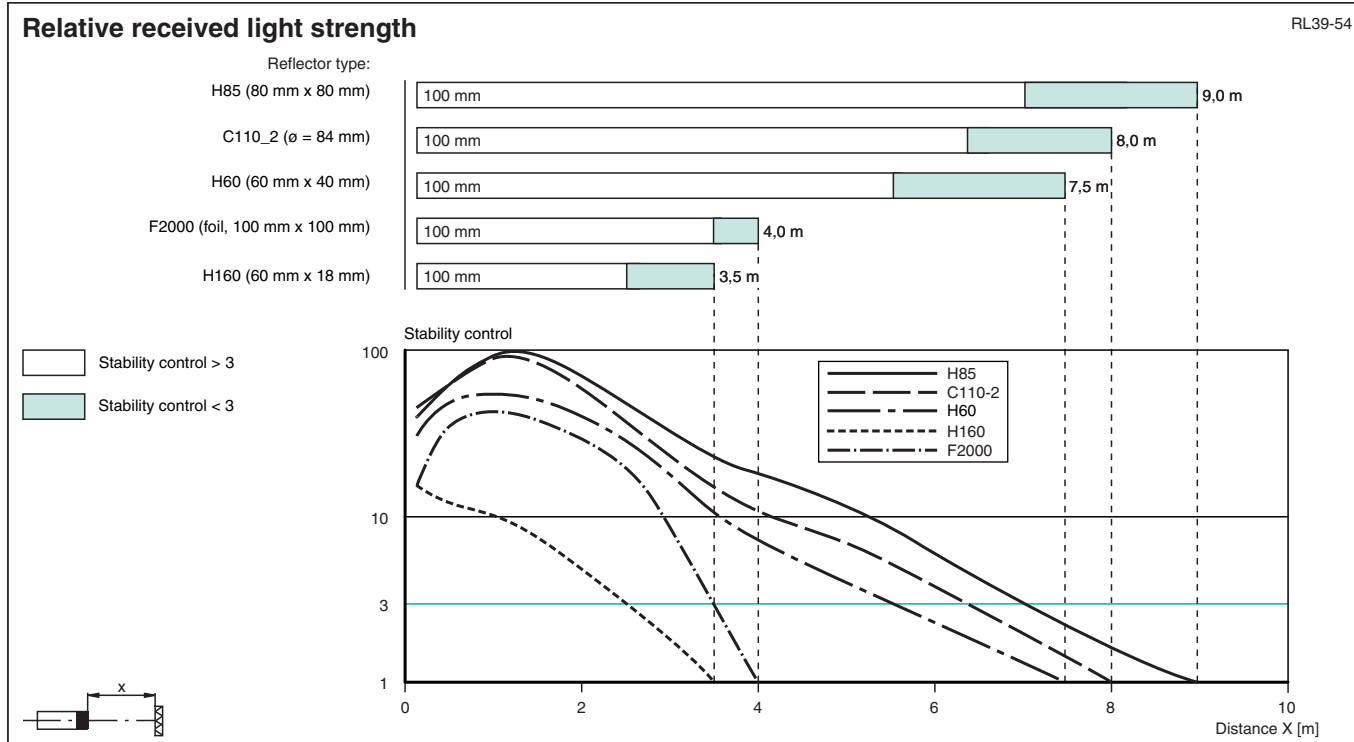
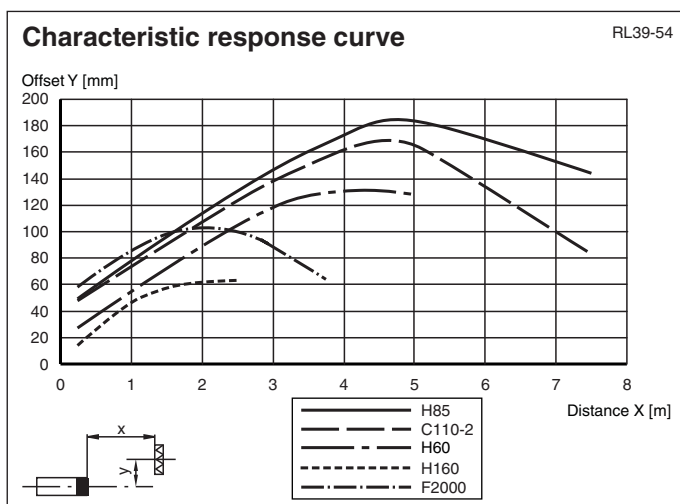


Wire length L_A [mm]	Strip length L_B [mm]
30±2	5±1

- Recommendations for cable installation:
1. Use flexible cable with a bending radius less than 5 x outer diameter.
 2. Use cable with an outer diameter of 6.2 ±0.2 mm with the provided gasket with an inner diameter of 7 mm.
 3. Cut, strip, and crimp the cable according to the dimensions in the table above.
 4. Ensure that the distance between cable gland and housing is approximately 2 mm. Do not screw in the cable gland fully.

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Characteristic Curve



Additional Information

System Description

A retroreflective sensor contains emitters and receivers integrated in a single housing. The emitted light is reflected back to the receiver by a reflector. When the light beam is interrupted by an object, the switching function is triggered.

Mounting

The sensors can be mounted directly with thru-holes or using the mounting bracket supplied. Ensure that the background is level to prevent the housing from becoming distorted when the fittings are tightened. Secure the nuts and screws with spring disks to prevent the sensor from becoming misaligned.

Mount a suitable reflector opposite the light barrier. Roughly align the sensor (without an object) with the reflector. Next, adjust the sensor to the reflector by swiveling the sensor horizontally and vertically so that the yellow signal indicator lights up continuously. In the event of misalignment, the red signal indicator lights up.

Commissioning

Checking object detection: Follow the steps below to check that the sensor detects objects as required.

Position the object in the beam path of the sensor.

When the object is detected, the yellow signal indicator goes out. If the yellow signal indicator remains lit, reduce the sensitivity of the potentiometer until the yellow signal indicator goes out.

When the object disappears from the beam path of the sensor, the yellow signal indicator lights up again continuously.

Maintenance

Cleaning: If the transmission reception deteriorates, e.g., due to dirt or misalignment, and is lower than the functional reserve, the red signal indicator on the receiver lights up. Clean the optical interfaces of the sensor (e.g., lenses) at regular intervals.

Maintenance: Check the mounting fittings and the electrical connections regularly.