# Diffuse mode sensor
RL39-8-800/32/40a/73c/82a
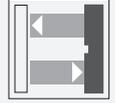
- Infrared light
- Light-on/dark-on, switchable
- Degree of protection IP54
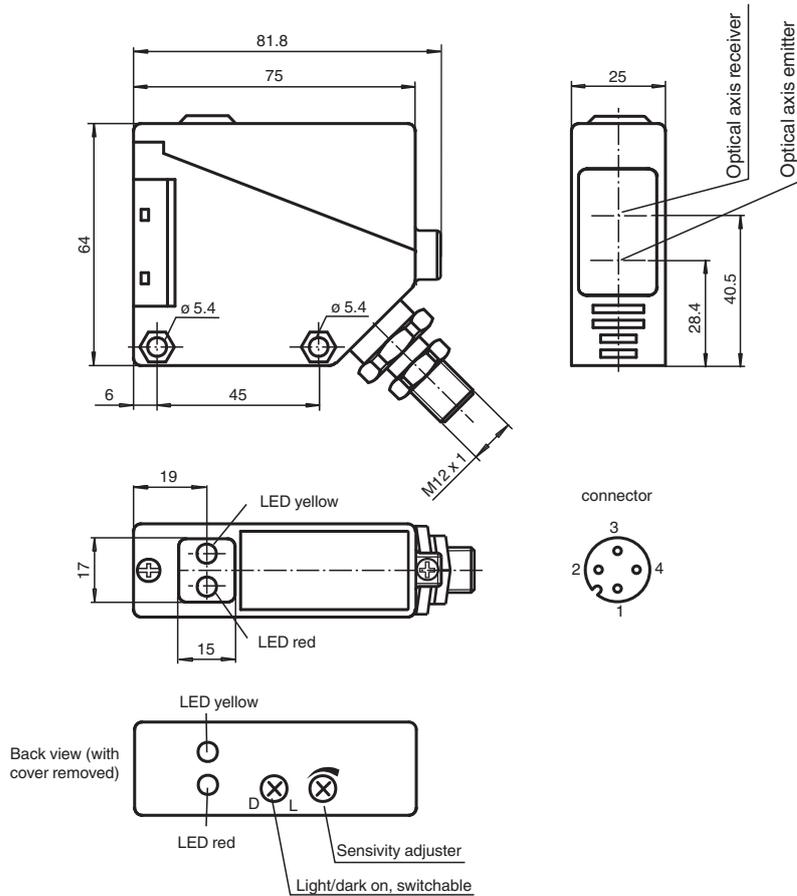
CE UK CA

Dimensions

81.8
75
64
ø 5.4
ø 5.4
6
45
M12 × 1

25
Optical axis receiver
Optical axis emitter
40.5
28.4

19
17
15
LED yellow
LED red

connector

3
2   4
1

Back view (with cover removed)
LED yellow
LED red
D   L
Light/dark on, switchable
Sensivity adjuster

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   1

Technical Data

General specifications

Detection range	0 ... 800 mm
Adjustment range	150 ... 800 mm
Reference target	standard white 200 mm x 200 mm
Light source	IRED
Light type	modulated infrared light
Ambient light limit	IEC / EN 60947-5-2 , 10000 Lux

Functional safety related parameters

$MTTF_d$		916 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 PNP, active when falling short of the stability control
Switching type		light/dark on
Signal output		1 PNP 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

Approvals and certificates

Approvals	CE

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	4-pin, M12 x 1 connector
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

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

2

Connection Assignment

Option: 32/40a/82a

1	+UB
3	Alarm
4	Q
2	0 V
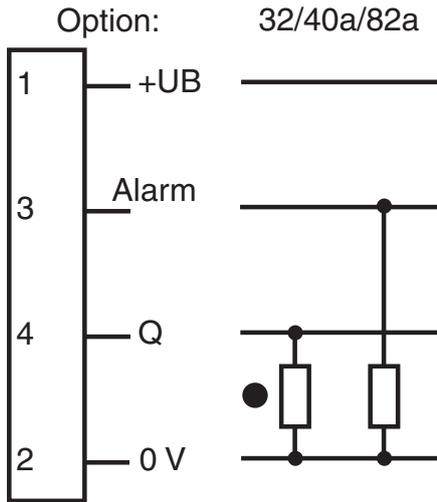
○ = Light on
● = Dark on

Connection Assignment
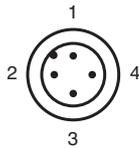
Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve
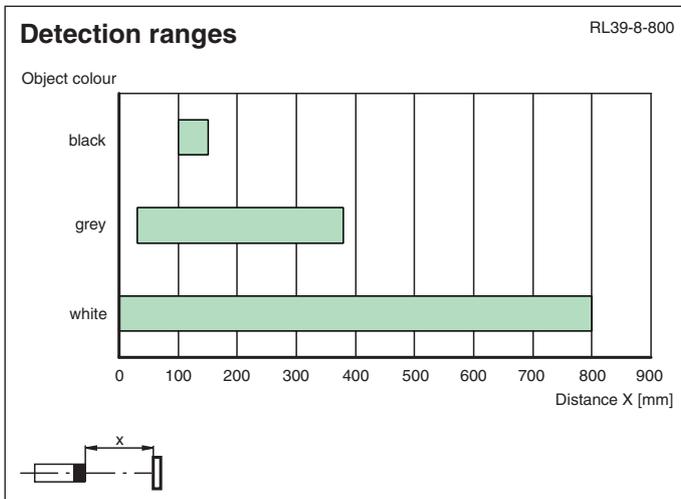
Detection ranges

RL39-8-800

Object colour

Distance X [mm]

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

Additional Information

System Description
A retroreflective sensor contains both an emitter and a receiver in a single housing. The light of the emitter ist reflected by the detected object, returned to, and evaluated by the receiver. The sensing range depends on the object color. For dark or very small objects, the sensing range is reduced.

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.

Aligning the sensor: Align the sensor with the background.
Yellow signal indicator lights up continuously: Use the sensing range adjuster to set the sensing range correctly. When the sensing range is right, the yellow signal indicator goes out.

Commissioning
Check Object Detection: Check as follows if the sensor detects objects as intended.
Position the object in the required sensing range of the sensor and align the light spot towards the object.
The yellow signal indicator is off. The indicator lights up only when the object is detected.
Troubleshooting: If the sensor does not respond as expected, change the sensing range setting until the signal indicator lights up during object detection.

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.

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

4