



# Background suppression sensor RL31-8-H-800-IR/73c/136

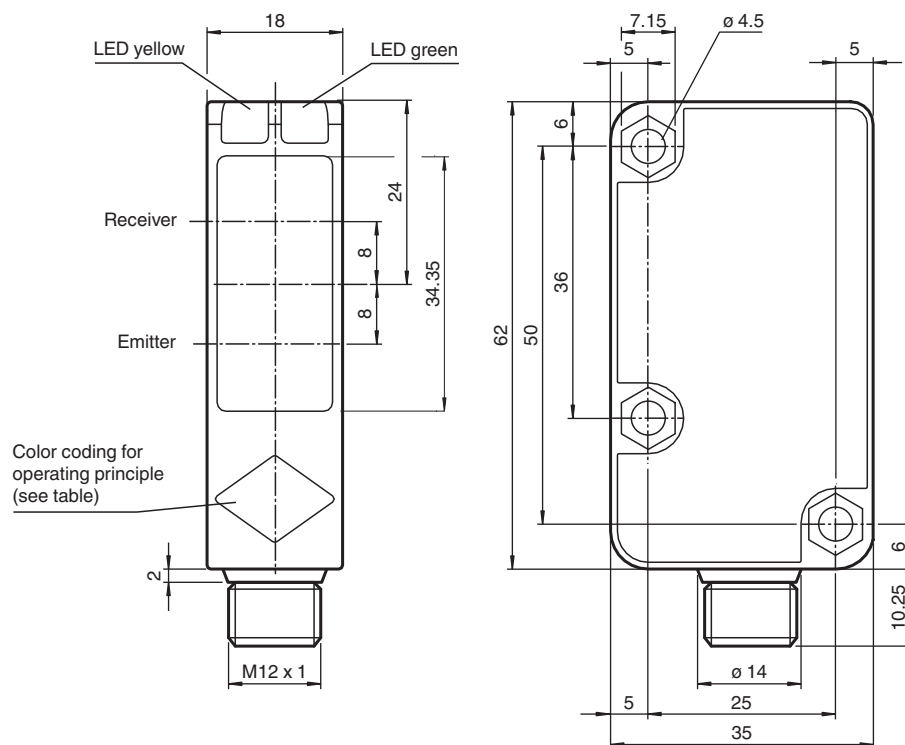


- Cost-optimized series for standard tasks
- Large construction with small housing
- High-visibility indicator LEDs
- Low sensitivity to target color

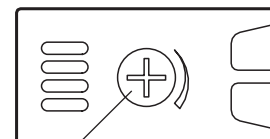
Triangulation sensor with background suppression for standard applications, large housing design, 800 mm adjustable detection range, infrared, dark on, push-pull output, M12 plug



## Dimensions



Operating principle	color
Retroreflective sensor with polarisation filter	green
Retroreflective sensor	blue
Diffusive mode sensor	white
Thru-beam sensor	grey
Diffusive mode sensor with background suppression	red



Sensing range adjuster

## Technical Data

### General specifications

Detection range 50 ... 800 mm

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 277837\_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

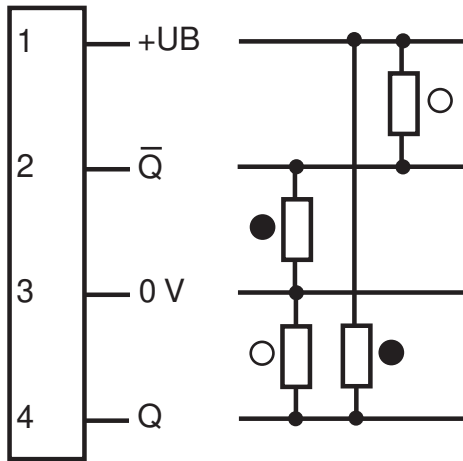
**PF** PEPPERL+FUCHS

## Technical Data

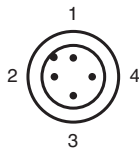
Detection range min.		50 ... 100 mm
Detection range max.		50 ... 800 mm
Adjustment range		100 ... 800 mm
Reference target		standard white, 100 mm x 100 mm
Light source		LED
Light type		modulated infrared light
Black-white difference (6 %/90 %)		< 5 %
Diameter of the light spot		approx. 30 mm at a distance of 800 mm
Opening angle		approx. 2.5 °
Ambient light limit		20000 Lux
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		580 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
Operation indicator		LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator		LED yellow ; ON: object inside the sensing range ; OFF: object outside the sensing range
Control elements		Sensing range adjuster
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	max. 25 mA at 24 V supply voltage
<b>Output</b>		
Switching type		dark-on
Signal output		2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U <sub>d</sub>	≤ 2 V DC
Switching frequency	f	200 Hz
Response time		2.5 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
Protection class		II , rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)
<b>Ambient conditions</b>		
Ambient temperature		-30 ... 55 °C (-22 ... 131 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
<b>Mechanical specifications</b>		
Housing width		18 mm
Housing height		62 mm
Housing depth		35 mm
Degree of protection		IP67
Connection		4-pin, M12 x 1 connector
Material		
Housing		Polycarbonate
Optical face		PMMA
Mass		25 g

**Connection Assignment**

Option:



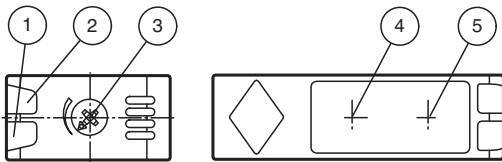
**Connection Assignment**



Wire colors in accordance with EN 60947-5-2

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

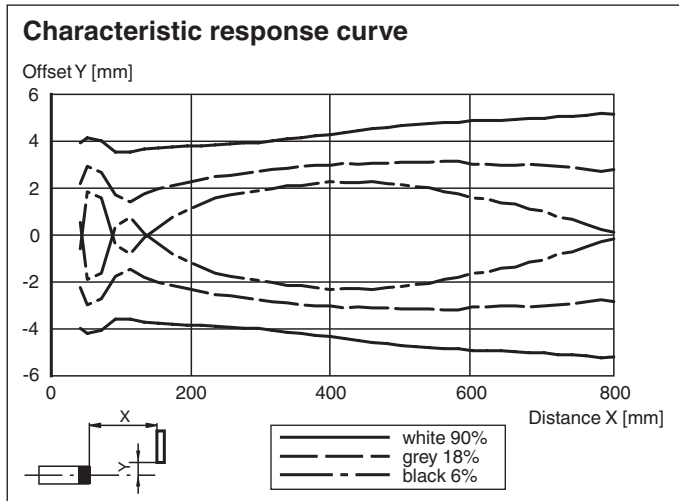
**Assembly**











1	Operating display	green
2	Signal display	yellow
3	Sensing range adjuster	
4	Emitter	
5	Receiver	

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## Accessories

	<b>OMH-RL31-01</b>	Mounting bracket
	<b>OMH-RL31-02</b>	Mounting bracket narrow
	<b>OMH-RL31-03</b>	Mounting bracket narrow
	<b>OMH-RL31-04</b>	Mounting aid for round steel $\varnothing$ 12 mm or sheet 1.5 mm ... 3 mm
	<b>OMH-RL31-05</b>	Mounting bracket for mounting on flat surfaces with 2 M4 screws
	<b>OMH-RL31-06</b>	Stainless steel mounting bracket with adjustable half clamp on the side
	<b>V1-G-2M-PUR</b>	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	<b>V1-W-2M-PUR</b>	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey