



Background suppression sensor RL28-8-H-400-FFP-RT/47/105

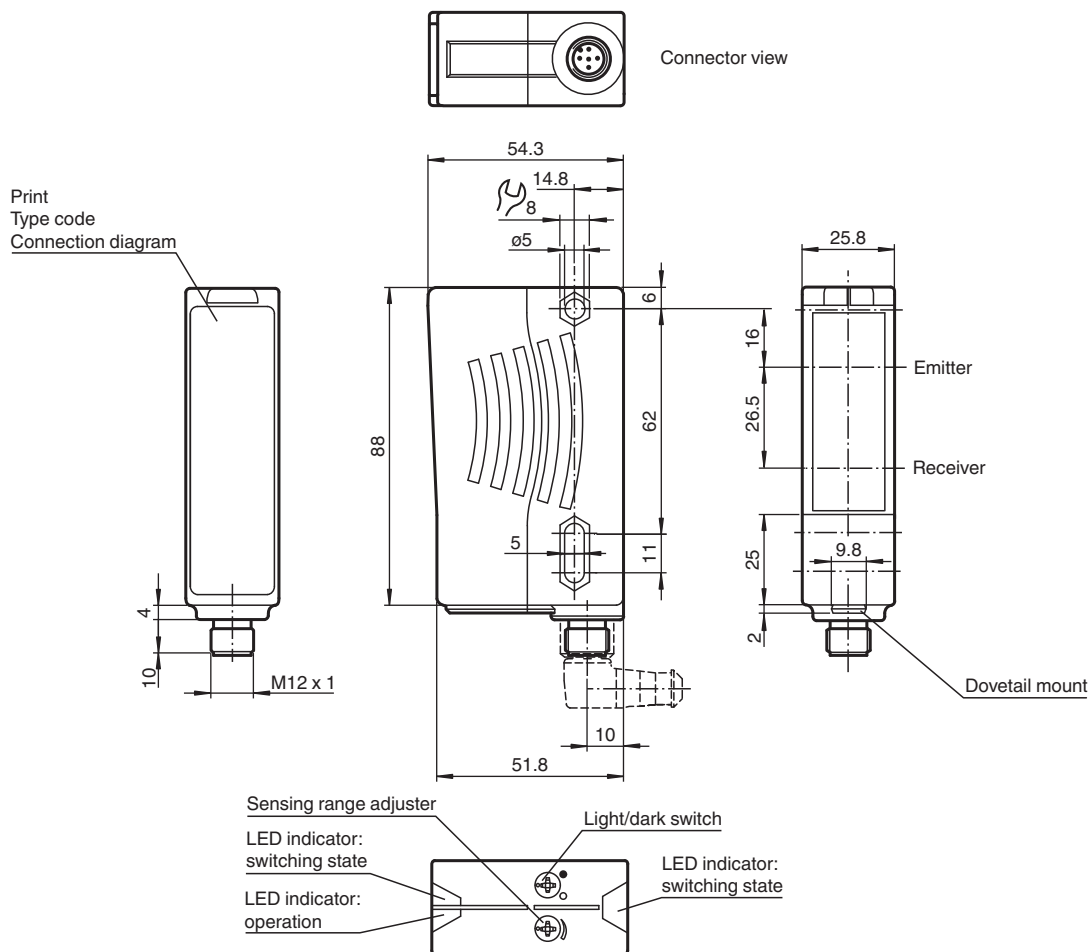


- Special range of application: Specialised fine positioning
- Ultra bright LEDs for power on and switching state
- Good alignability due to red transmission LED
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Background suppression sensor



Dimensions



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

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PEPPERL+FUCHS

Technical Data

General specifications

Detection range	20 ... 400 mm
Detection range min.	20 ... 150 mm
Detection range max.	20 ... 400 mm
Adjustment range	150 ... 400 mm
Background suppression	max. + 10 % of the upper limit of the detection range
Light source	LED
Light type	modulated visible red light , 660 nm
Black-white difference (6 %/90 %)	< 15 %
Diameter of the light spot	4 mm x 4 mm at a distance of 250 mm
Opening angle	Emitter 1.2°, Receiver 2°
Ambient light limit	50000 Lux

Functional safety related parameters

MTTF _d	720 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green
Function indicator	2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range
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	≤ 40 mA

Output

Switching type	light/dark on switchable	
Signal output		2 PNP, complementary, short-circuit protected, reverse polarity protected , open collectors
Switching voltage	max. 30 V DC	
Switching current		max. 200 mA
Switching frequency	f	250 Hz
Response time		2 ms

Conformity

Product standard	EN 60947-5-2
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Approvals and certificates

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1

Ambient conditions

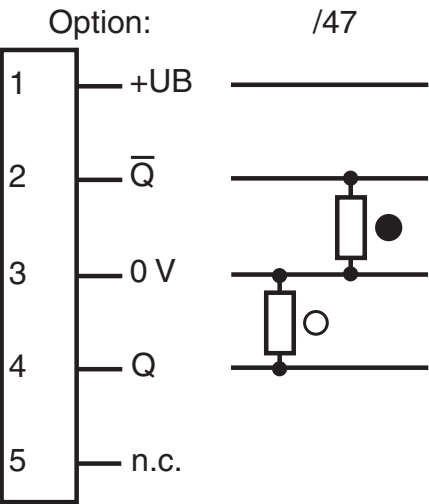
Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 60 °C (-40 ... 140 °F)

Mechanical specifications

Housing width	25.8 mm
Housing height	88 mm
Housing depth	54.3 mm
Degree of protection	IP67
Connection	5-pin, M12 x 1 connector
Material	
Housing	Plastic ABS
Optical face	plastic
Connector	plastic
Mass	70 g

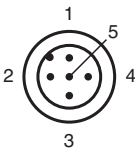
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Connection Assignment



○ = Light on
● = Dark on

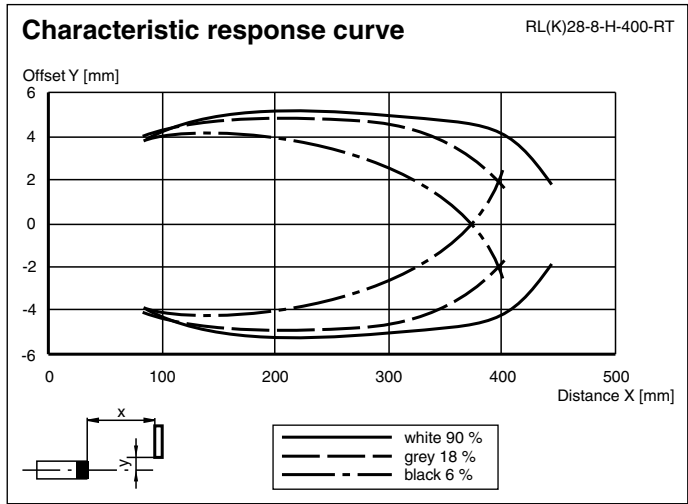
Connection Assignment



Wire colors in accordance with EN 60947-5-2

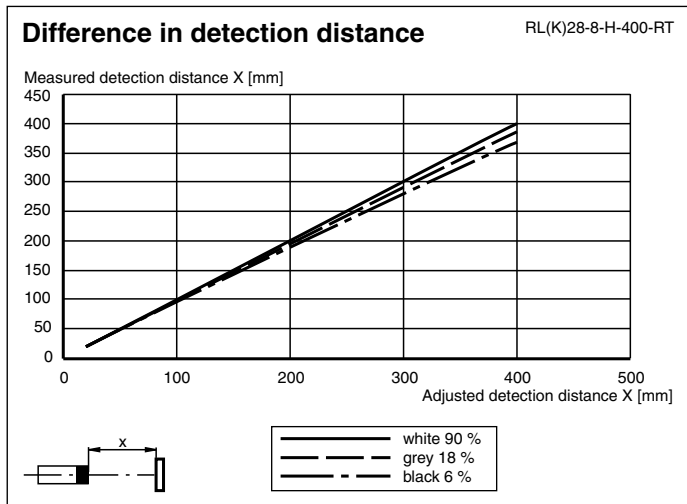
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Characteristic Curve



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Characteristic Curve



Application



Additional Information

System Description
The triangulation sensor with background suppression (BGS) contains both an emitter and a receiver in a single housing. Targeted blanking of objects outside the scanning range is made possible by a corresponding angle arrangement between emitter and receiver (2 receiver elements). The triangulation sensor (BGS) detects objects regardless of their surface structure, brightness and color, as well as the brightness of the background.

Mounting
The sensors can be mounted directly with fixing screws or by using a mounting bracket. Mounting brackets are available as accessories. Ensure that the surface is flat to avoid housing distortion during mounting and fixing. Secure nut and bolt with spring washers to prevent misalignment of the sensor.

Adjusting the Sensor: Apply the operating voltage to the sensor. The power indicator lights green. Adjust the sensor to the background. Yellow signal indicator permanently lights up: Use the sensing range adjuster to adjust the sensor to correct sensing range. Once the correct sensing range is set, 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: Clean the optical interfaces of the sensor (e.g., lenses) at regular intervals.
Maintenance: Check the mounting fittings and the electrical connections regularly.

Accessories

	OMH-05	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
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Accessories

	OMH-21	Mounting bracket: mounting aid for sensors in the RL* series
	OMH-22	Mounting aid for RL* series
	OMH-RLK29-HW	Mounting bracket for rear wall mounting
	OMH-RL28-C	Weld slag cover model

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