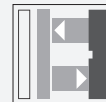




Background suppression sensor

RL28-8-H-2000-IR-3974/47/112

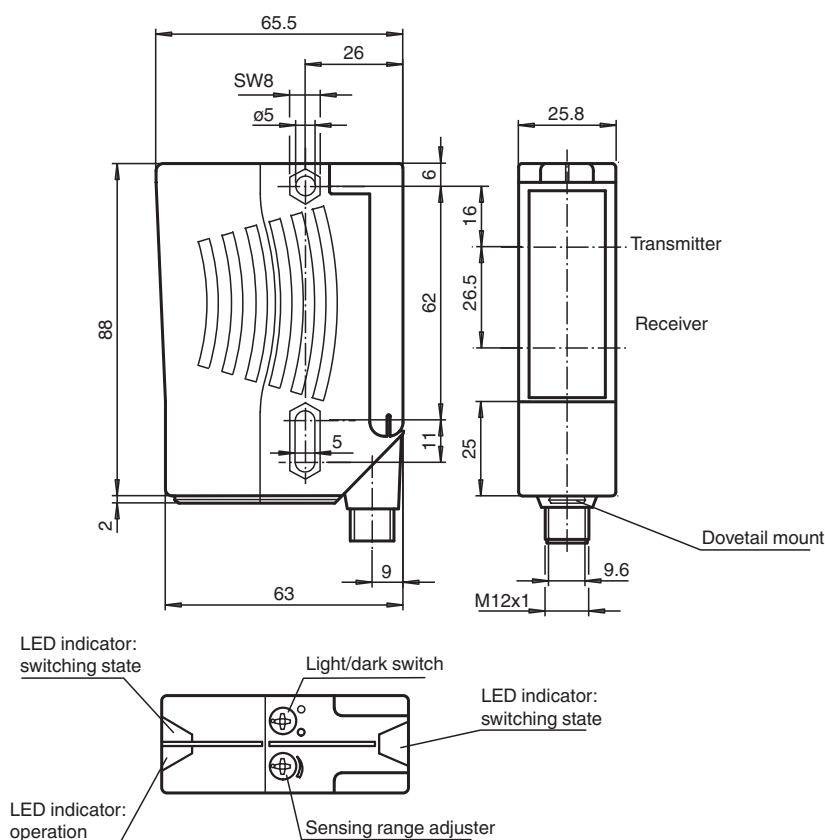


- Ultra bright LEDs for power on and switching state
- Minimal black-white difference through the infrared transmission LED
- Not sensitive to ambient light, even with energy saving lamps
- Waterproof, degree of protection IP67
- Extra vibration proof version
- Protection class II

Background suppression sensor



Dimensions



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

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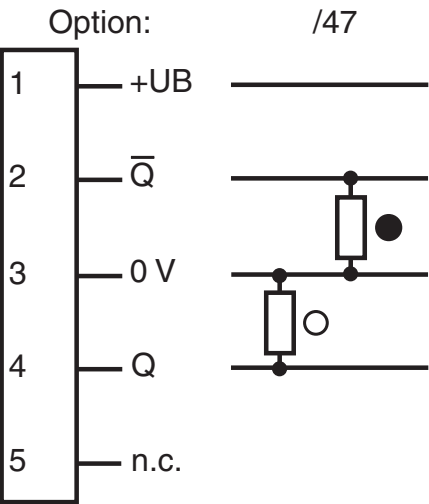
Singapore: +65 6779 9091
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PEPPERL+FUCHS

Technical Data

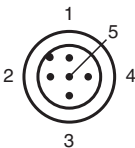
General specifications			
Detection range			20 ... 2000 mm
Detection range min.			20 ... 200 mm
Detection range max.			20 ... 2000 mm
Background suppression			max. + 10 % of the upper limit of the detection range
Light source			IREd
Light type			modulated infrared light , 880 nm
Black-white difference (6 %/90 %)			< 40 %
Diameter of the light spot			approx. 70 mm at a distance of 2000 mm
Opening angle			transmitter 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
Approvals and certificates			
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			65.5 mm
Degree of protection			IP67
Connection			5-pin, M12 x 1 connector, 90° rotatable
Material			
Housing			Plastic ABS
Optical face			plastic
Connector			metal
Mass			approx. 100 g

Connection Assignment



○ = Light on
● = Dark on

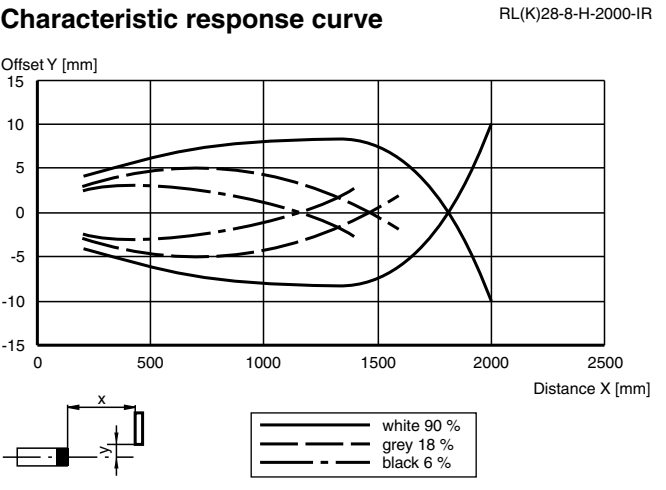
Connection Assignment



Wire colors in accordance with EN 60947-5-2

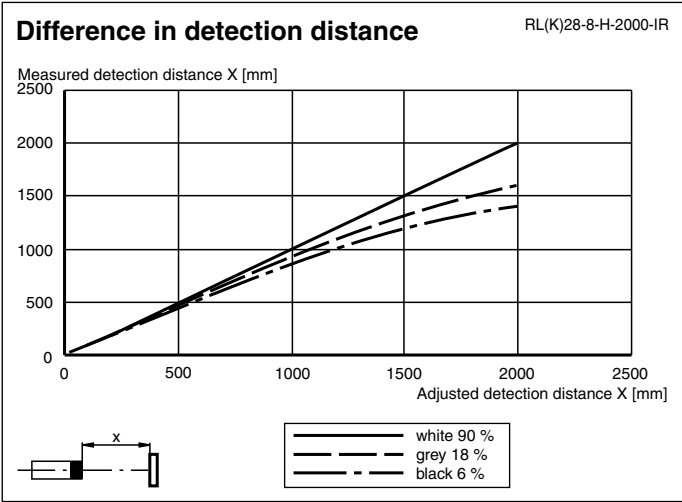
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Characteristic Curve



Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 205804_eng.pdf

Characteristic Curve



Application



Accessories

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

Additional information**Intended use:**

The transmitter and receiver are located in the same housing for direct detection sensors with background masking. Marking of objects outside the detection range is achieved by arranging the angle between the transmitter and receiver (2 receiver elements).

Objects are detected independently of their surface structures, brightness and colour, as well as the brightness of the background.

Mounting instructions:

The sensors can be fastened directly with fixing screws or with a support bracket (not included with delivery).

The surface underneath must be flat to prevent the housing from moving when it is tightened into position. We recommend securing the nut and screw in place with spring washers to prevent the sensor from going out of adjustment.

Adjustment:

After the operating voltage is applied, the LED is lit green.

Align the sensor to the background. If the yellow LED is lit, the detection range should be reduced with the detection range adjuster until the yellow LED goes out.

Object direction:

Place the object to be detected at the desired maximum detection range and align the light spot to it. If the object is detected, the yellow LED lights up.

If it does not light up, the detection range must be adjusted on the potentiometer until it lights up when an object is detected.

Cleaning:

We recommend cleaning the optical surface and checking the screwed connection and other connections at regular intervals.