



## Background suppression sensor

RL28-8-H-700-IR/105/110

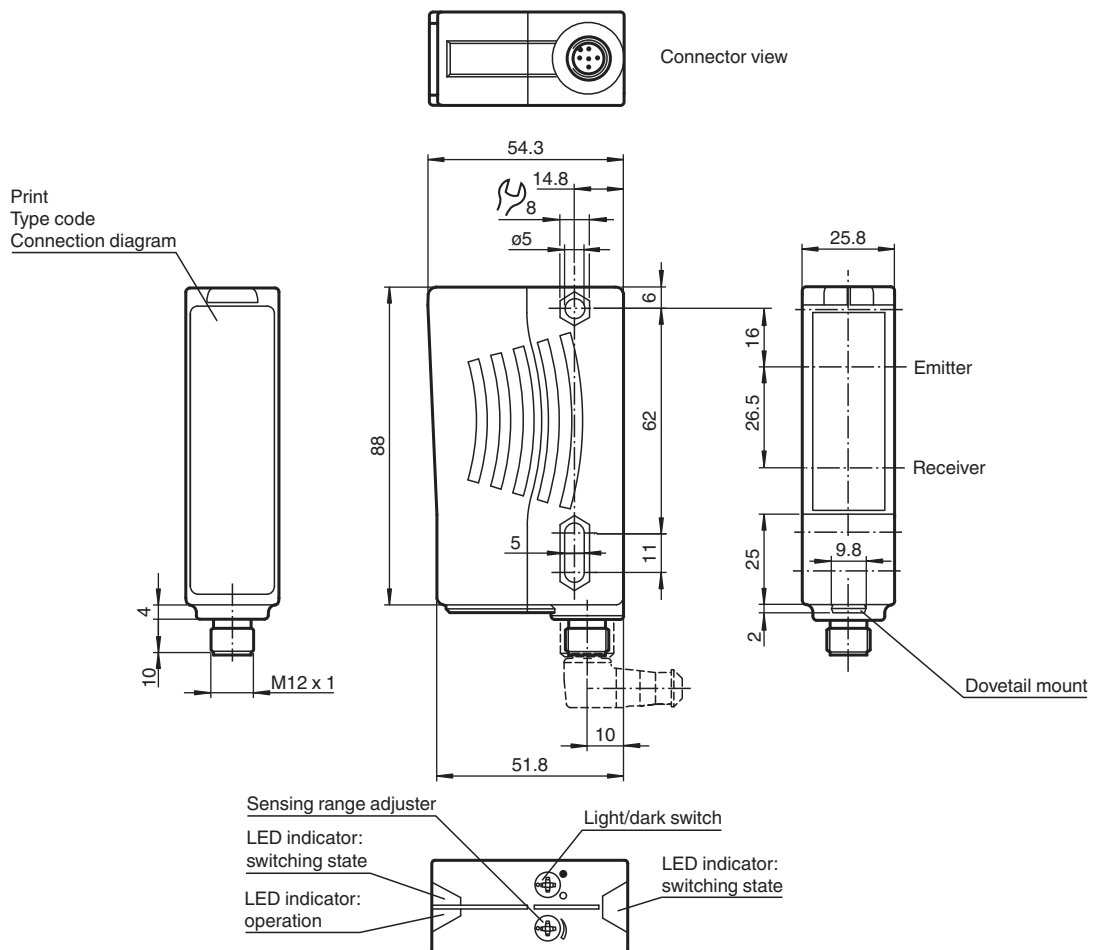


- Ultra bright LEDs for power on and switching state
- Minimal black-white difference through the infrared transmission LED
- Not sensitive to ambient light, even with energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Background suppression sensor



### Dimensions



### Technical Data

#### General specifications

Detection range	20 ... 700 mm
Detection range min.	20 ... 200 mm

Release date: 2021-11-11 Date of issue: 2021-11-11 Filename: 419617\_eng.pdf

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

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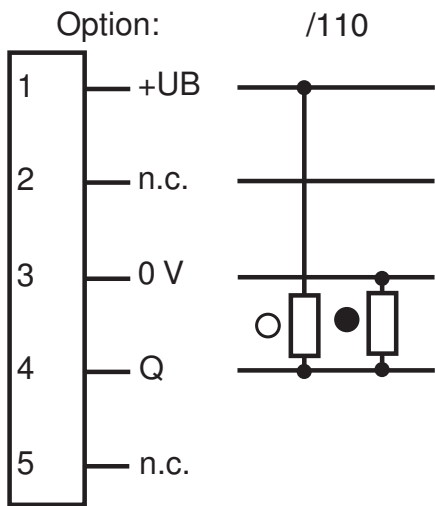
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## Technical Data

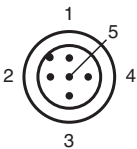
Detection range max.		20 ... 700 mm
Background suppression		max. + 10 % of the upper limit of the detection range
Light source		IREL
Light type		modulated infrared light , 880 nm
Black-white difference (6 %/90 %)		< 8 %
Diameter of the light spot		approx. 24 mm at a distance of 700 mm
Angle of divergence		transmitter 2° receiver 2°
Ambient light limit		50000 Lux
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		720 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
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
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	≤ 40 mA
<b>Output</b>		
Switching type		light/dark on switchable
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Switching frequency	f	250 Hz
Response time		2 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
EAC conformity		TR CU 020/2011
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
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
<b>Mechanical specifications</b>		
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

Connection Assignment



O = Light on  
● = Dark on

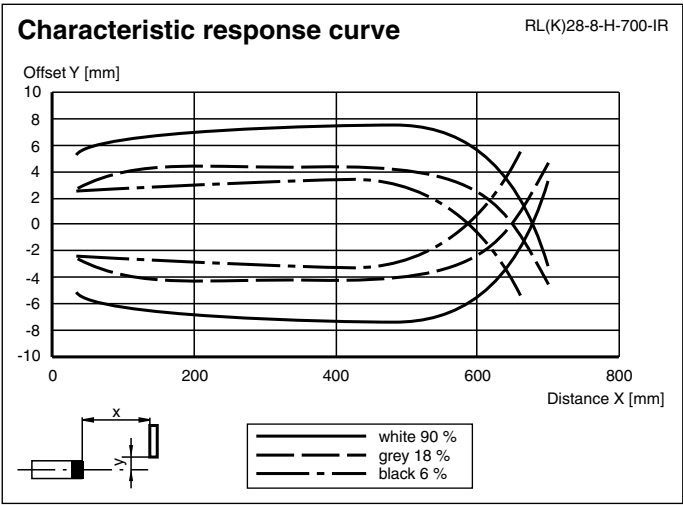
Connection Assignment



Wire colors in accordance with EN 60947-5-2

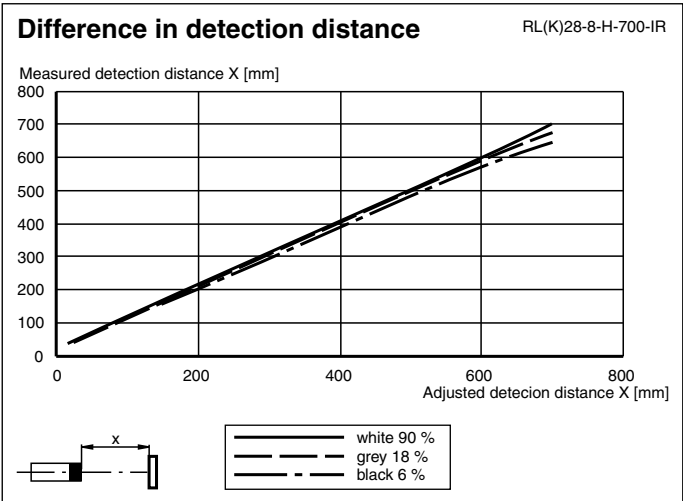
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Characteristic Curve



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Characteristic Curve



Application



Accessories

	<b>OMH-05</b>	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	<b>OMH-21</b>	Mounting bracket: mounting aid for sensors in the RL* series
	<b>OMH-22</b>	Mounting aid for RL* series
	<b>OMH-RLK29-HW</b>	Mounting bracket for rear wall mounting
	<b>OMH-RL28-C</b>	Weld slag cover model

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## Additional Information

### Mounting instructions:

There are two bore holes for mounting the sensor with M5 bolts. The base surface must be flat to avoid distorting the housing during mounting. It is advisable to secure the bolts with spring washers so that the sensor does not become misaligned.

### Outdoor installation:

The sensor must be protected against rain and splash-water, possibly must a cover be installed.

### Adjustment:

Adjust the sensor on the background. After the connecting to the power supply the green LED illuminates. In case the yellow LEDs illuminate too, the detection range needs to be reduced with the detection range adjuster, until the yellow LEDs is switched off. If the object is moved into the detection range the yellow LEDs illuminates.

### Driving inductive loads:

If the sensor are used to drive inductive loads, the following safety procedures must be carried out:

For operating voltage of 10 V DC ... 30 V DC: fit a protection diode, max. 200 mA