



Model Number

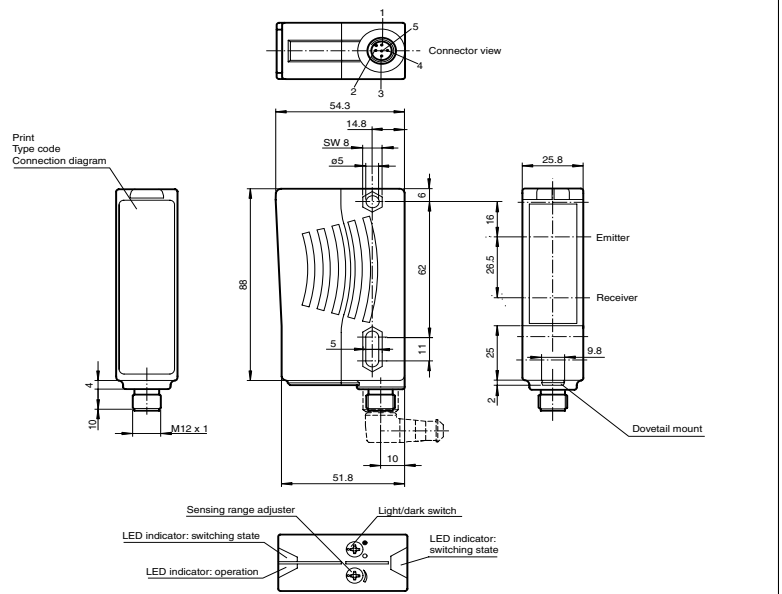
RL28-8-H-2000-IR/49/105

Background suppression sensor
with 5-pin, M12 x 1 plastic connector

Features

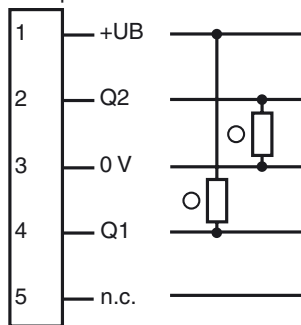
- Ultra bright LEDs for power on and switching state
- Minimal black-white difference through the infrared transmission LED
- Not sensitive to ambient light, even with energy saving lamps
- Waterproof, protection class IP67
- Protection class II

Dimensions



Electrical connection

Option: /49



○ = Light on

● = Dark on

Technical data

General specifications

Detection range	20 ... 2000 mm
Detection range min.	20 ... 200 mm
Detection range max.	20 ... 2000 mm
Light source	IRED, 880 nm
Black/White difference (6 %/90 %)	< 40 %
Approvals	CE, cULus
Background suppression	max. + 10 % of the upper limit of the detection range
Light type	infrared, modulated light
Diameter of the light spot	approx. 70 mm at a distance of 2000 mm
Angle of divergence	transmitter 2° receiver 2°
Ambient light limit	50000 Lux

Functional safety related parameters

MTTF _d	1130 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operating display	LED green
Function display	2 LEDs yellow on: object inside the scanning range off: object outside the scanning range
Operating elements	Light/dark switch
Operating elements	Detection range adjuster

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1	
Ripple		10 %
No-load supply current	I ₀	≤ 40 mA

Output

Switching type	Light/dark ON, switchable	
Signal output	1 npn, 1 pnp synchronised-switching, short-circuit proof, protected against reverse polarity , open collectors	
Switching voltage	max. 30 V DC	
Switching current	max. 200 mA	
Switching frequency	f	250 Hz
Response time	2 ms	

Standard conformity

Standards	EN 60947-5-2
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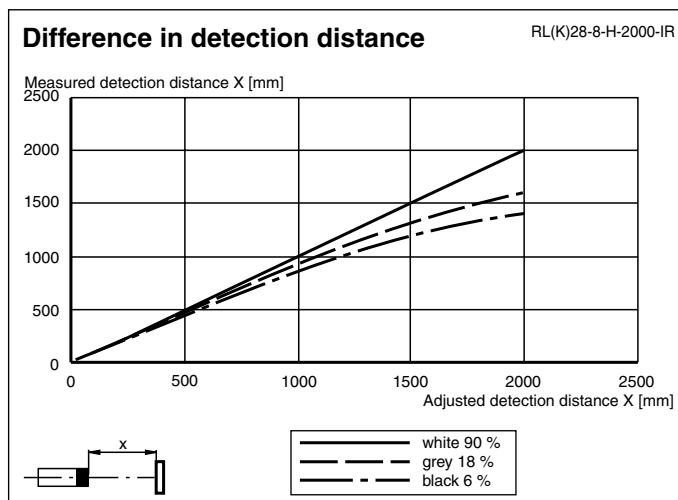
Ambient conditions

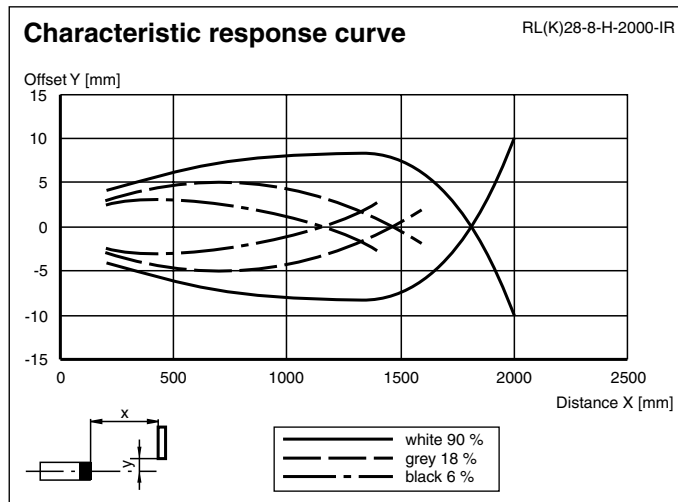
Ambient temperature	-40 ... 60 °C (233 ... 333 K)
Storage temperature	-40 ... 75 °C (233 ... 348 K)

Mechanical specifications

Protection degree	IP67
Connection	plastic connector M12 x 1, 5-pin
Material	
Housing	Plastic ABS
Optical face	plastic
Mass	70 g

Curves/Diagrams





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.