Dimensions

DIP-switch

Indicator of detection range for Off delay and one shot
Indicator of detection range for On delay
Relay NO
Relay NC
Relay center contact
12 ... 240 V AC/DC
12 ... 240 V AC/DC

Name plate

65.5
26
ø5
8
25.8
6
16
26.5
62
88
5
11
25
63
2
9.6

Transmitter

Receiver

Dovetail mount

DIP-switch

ON   OFF
4
3
2
1

Light/dark switch
LED-switch status
LED-switch status
LED-operating display
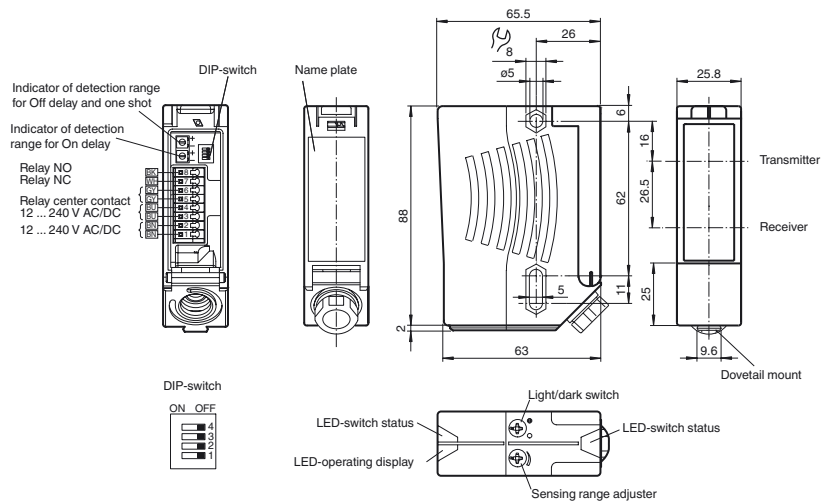Sensing range adjuster

Model Number

RLK28-8-H-400-RT-Z/31/116

Background suppression sensor
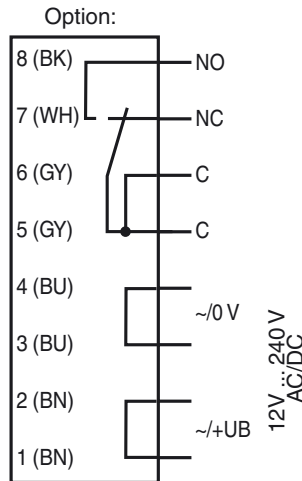with terminal compartment

Features

- Universal series with highly versatile fields of use

- Resistant against noise: reliable operation under all conditions

- Good alignability due to red transmission LED

- Programmable time function GAN, GAB, IAB and GAN-IAB as double function

- Version for universal voltages

Electrical connection

Option:

8 (BK) — NO
7 (WH) — NC
6 (GY) — C
5 (GY) — C
4 (BU) — ~/0 V
3 (BU)
2 (BN) — ~/+UB
1 (BN)

12V ...240 V AC/DC

The relay-functions "NC" and "NO" bear on the switching mode "Light-ON". This complies to the default setting of the light/dark switch, located on top of the housing (factory setting).

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

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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 %)	< 10 %
Diameter of the light spot	approx. 12 mm at a distance of 400 mm
Angle of divergence	Emitter 1.2°, Receiver 2°
Ambient light limit	50000 Lux

Functional safety related parameters

$MTTF_d$	620 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	12 ... 240 V AC/DC
Power consumption	P_0	≤ 3.5 VA

Output

Switching type		light/dark on, switchable (selectable, light/dark switching is only activated if the receiver has 'dark on' selected.)
Signal output		Relay, 1 alternator
Switching voltage		max. 250 V AC/DC
Switching current		max. 2 A
Switching power		DC: max. 50 W AC: max. 500 VA
Switching frequency	f	25 Hz
Response time		20 ms
Timer function		ON delay (GAN), OFF delay (GAB), one shot (IAB), ON delay-one shot (GAN-IAB), ON delay-OFF delay (GAN-GAB), programmable adjustment interval 0.1 ... 10 s

Conformity

Product standard	EN 60947-5-2

Ambient conditions

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)

Mechanical specifications

Housing width	25.8 mm
Housing height	88 mm
Housing depth	65.5 mm
Degree of protection	IP67
Connection	terminal compartment with 8 spring-loaded terminals for wire cross section 0.5 ... 1.5 mm^2, insulation stripping 7.5 ... 8.5 mm, M16 x 1.5 cable gland
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	112 g

Approvals and certificates

EAC conformity	TR CU 020/2011 TR CU 004/2011
Protection class	II, rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit insulated from control circuit in accordance with IEC 61140. Caution! The protection class 2 is only valid when the terminal compartment is closed.
UL approval	E87056 , cULus Listed **Caution:** This equipment is considered as open-type equipment. It must be mounted within an enclosure, that is suitably designed for protection against internal fire and personal injury resulting from accessibility to live parts according UL 508.
CCC approval	Certified by China Compulsory Certification (CCC)

Accessories

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

OMH-07
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-21
Mounting bracket

OMH-22
Mounting bracket

OMH-MLV11-K
dove tail mounting clamp
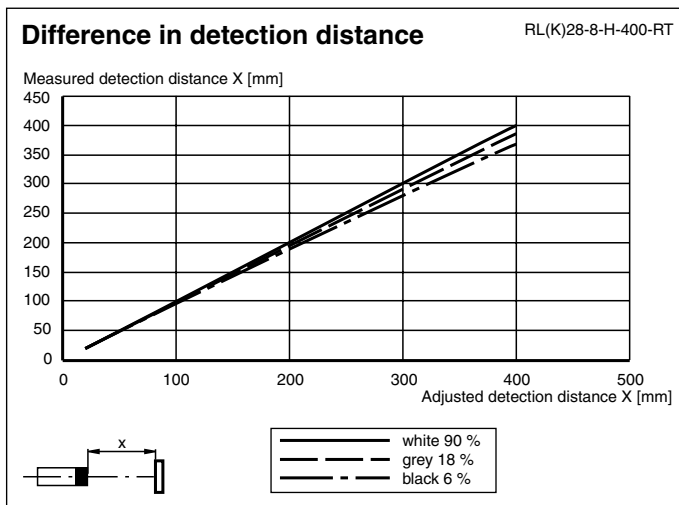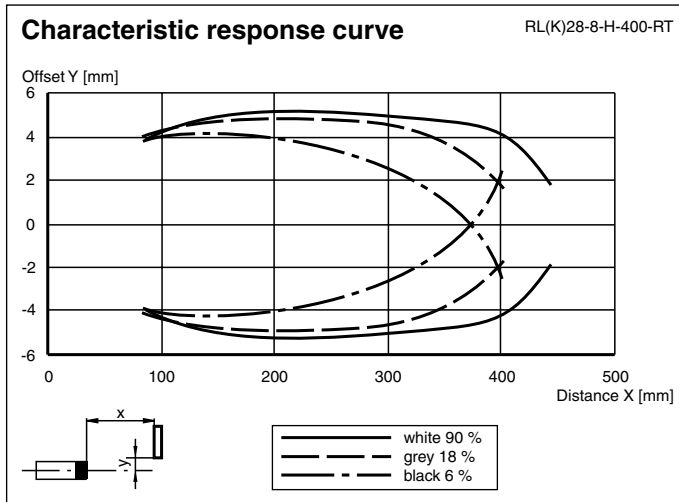
OMH-RLK29
Mounting bracket

OMH-RLK29-HW
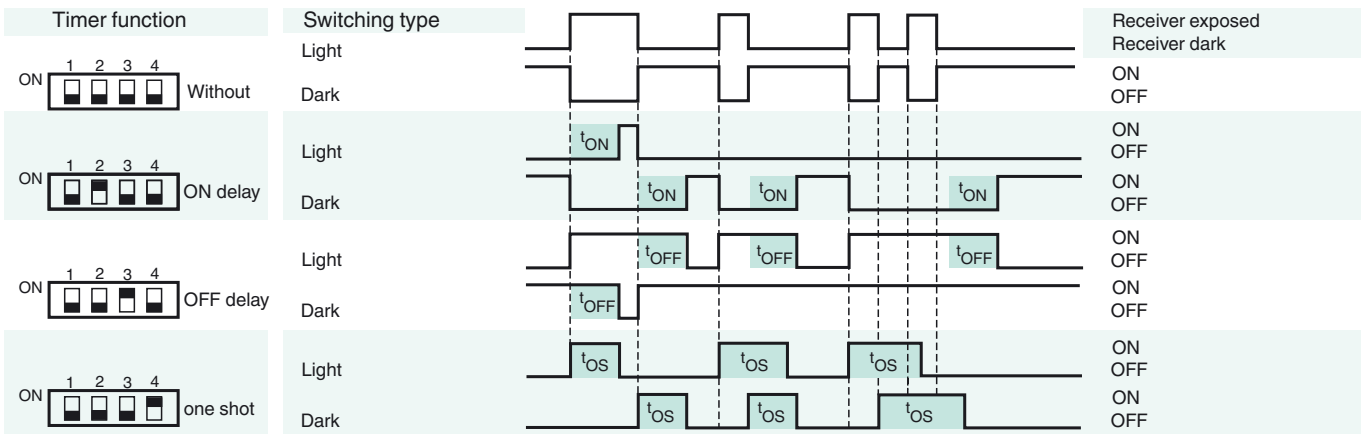Mounting bracket for rear wall mounting

OMH-RL28-C
Weld slag cover model

Other suitable accessories can be found at www.pepperl-fuchs.com

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

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Curves/Diagrams

Characteristic response curve RL(K)28-8-H-400-RT

Offset Y [mm] vs Distance X [mm]

- white 90 %
- grey 18 %
- black 6 %

Difference in detection distance RL(K)28-8-H-400-RT

Measured detection distance X [mm] vs Adjusted detection distance X [mm]

- white 90 %
- grey 18 %
- black 6 %

Timer functions

Timer function	Switching type		Receiver exposed / Receiver dark
Without	Light		ON
	Dark		OFF
ON delay	Light	t_{ON}	ON / OFF
	Dark	t_{ON}	ON / OFF
OFF delay	Light	t_{OFF}	ON / OFF
	Dark	t_{OFF}	ON / OFF
one shot	Light	t_{OS}	ON / OFF
	Dark	t_{OS}	ON / OFF

Time t_{ON}, t_{OFF} and t_{OS} are adjustable from 0.1 to 10 seconds.
The Light-/Dark-Switch (Left, outer switch) is shown in the "Dark ON" position.

Type	Description	Notes
-Z	OFF delay timer	Adjustable time interval (0.1 s - 10 s)
	one shot timer	
	ON delay timer	
	ON delay timer / OFF delay timer	
	ON delay timer / one shot timer	

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

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