Dimensions

Transmitter   Receiver   Terminal compartment

Transmitter   Receiver

65.5

26

8

ø5

25.5

6

16

24

62

88

11

25

2

63

9.6

LED-Anzeige red
alignment aid

Dovetail mount

Indicator of
detection range
for OFF delay and one shot

DIP-switch

Indicator of
detection range
for ON delay

Relay NO
Relay NC
Relay center contact
12 ... 240 V AC/DC
12 ... 240 V AC/DC

12 ... 240 V
AC/DC
12 ... 240 V
AC/DC

LED indicator:
switching state

Light/dark switch

LED indicator:
switching state

LED indicator:
operation

Sensitivity adjuster

Model Number

LA29/LK29-Z-F2/31/116-SET

Thru-beam sensor

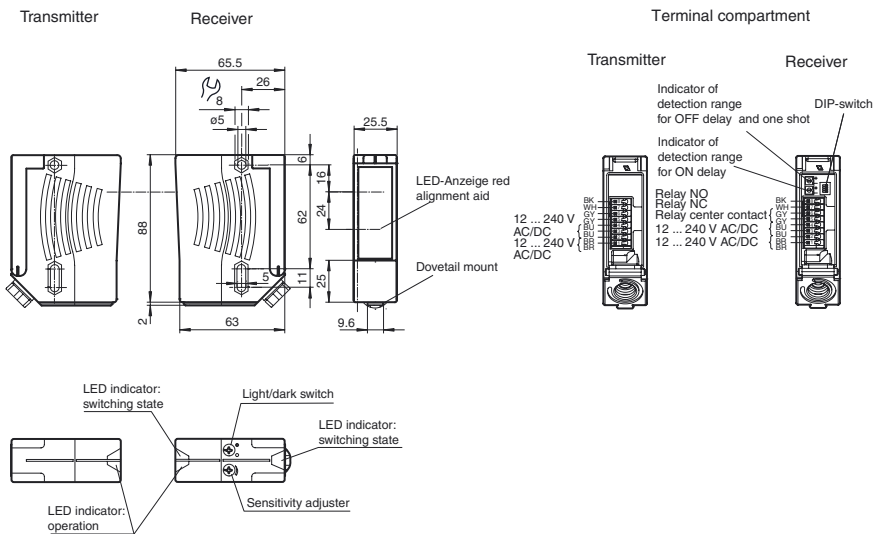With OMH-RLK29-HW mounting bracket

Features

- Robust, compact photoelectric sensor for single-beam gate protection
- Very high detection range
- No measurable emitted interference on all frequencies
- Not sensitive to ambient light, even with energy saving lamps
- Adjustable timer functions
- Version with accessories in scope of delivery
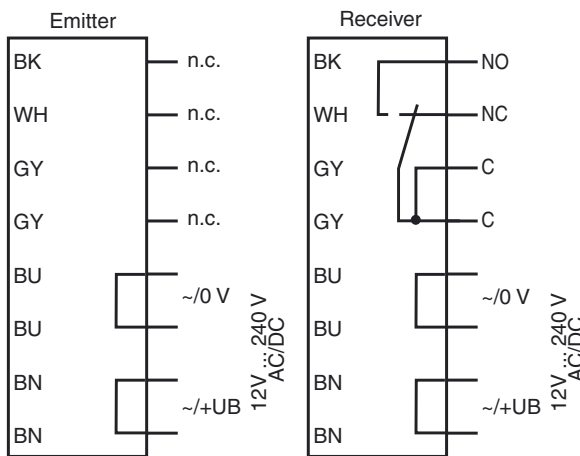
Product information

Series 29 is a range of low-cost and, most importantly, reliable photoelectric sensors for monitoring industrial doors, elevators, and automatic gates. Their high degree of protection makes them the ideal solution for tasks outdoors and at thresholds, and in harsh environments. These "universal-voltage sensors" can be operated with any supply voltage from 24 V to 240 V, and with direct current or alternating current.

Electrical connection

Emitter

BK — n.c.
WH — n.c.
GY — n.c.
GY — n.c.
BU — ~/0 V
BU —
BN — ~/+UB
BN —

12V ... 240 V
AC/DC

Receiver

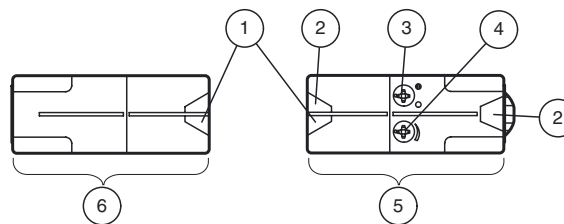BK — NO
WH — NC
GY — C
GY — C
BU — ~/0 V
BU —
BN — ~/+UB
BN —

12V ... 240 V
AC/DC

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

Indicators/operating means

1	Operating display green
2	Switch state yellow
3	Bright/dark switch
4	Sensitivity adjustment
5	Receiver
6	Transmitter

Release date: 2013-01-14   Date of issue: 2013-01-14   244082_eng.xml
Release date: 2013-01-14 12:53

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Technical data

System components

Emitter	LA29-F2/116
Receiver	LK29-Z-F2/31/116

General specifications

Effective detection range	0 ... 65 m
Threshold detection range	90 m
Light source	LED
Light type	modulated visible red light , 660 nm
Alignment aid	LED red (in receiver lens) illuminated constantly: beam is interrupted, flashes: reaching switching point, off: sufficient stability control
Transmitter frequency	F2 = 30 kHz
Diameter of the light spot	approx. 1.3 m at 65 m
Angle of divergence	Emitter 1.2°, Receiver 5°
Ambient light limit	50000 Lux

Functional safety related parameters

$MTTF_d$	490 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operating display	LED green
Function display	LED yellow: 1. LED lit constantly: signal > 2 x switching point (function reserve) 2. LED flashes: signal between 1 x switching point and 2 x switching point 3. LED off: signal < switching point
Controls	sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light/Dark 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-OFF delay (GAN-GAB), programmable adjustment range 0.1 ...10 s

Ambient conditions

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

Mechanical specifications

Protection degree	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	200 g (emitter and receiver)

Compliance with standards and directives

Directive conformity	Low Voltage Directive 2006/95/EC EMC Directive 2004/108/EC
Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 230 V AC Caution! The protection class 2 is only valid when the terminal compartment is closed.
CCC approval	Certified by China Compulsory Certification (CCC)

Typical applications

- Monitoring closing edges of automatic industrial doors and elevators
- Monitoring the swing range of automatic gates
- Detecting and tracking objects in material handling

Detection area

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-RLK29
Mounting bracket

OMH-MLV11-K
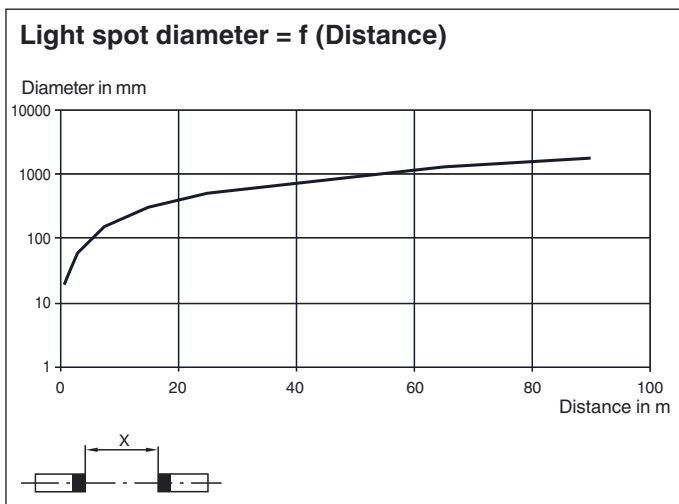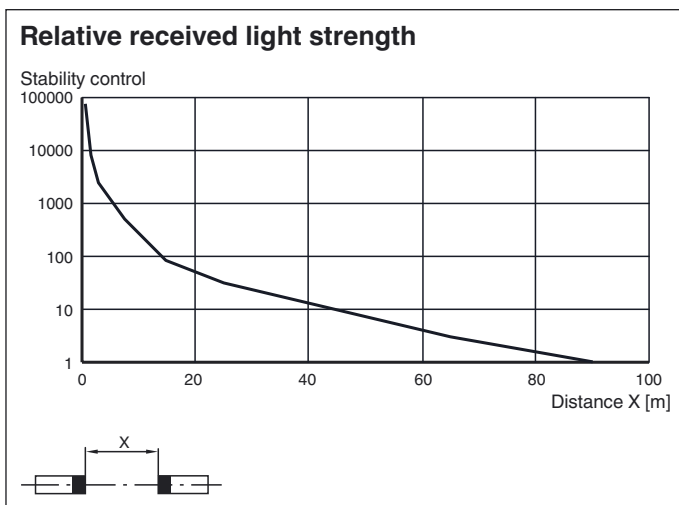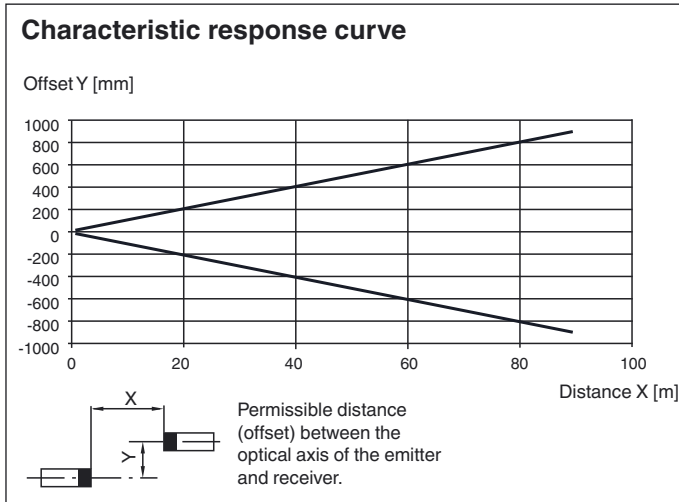dove tail mounting clamp

OMH-RLK29-HW
Mounting bracket for rear wall mounting

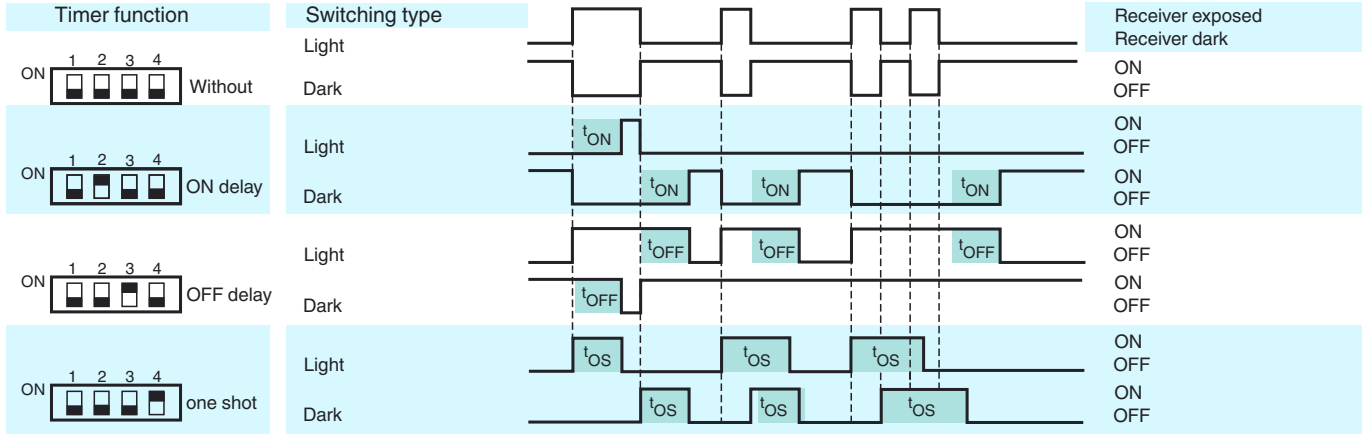**OMH-RL28-C**
Weld slag cover model

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

Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Permissible distance (offset) between the optical axis of the emitter and receiver.

Relative received light strength

Stability control

Light spot diameter = f (Distance)

Diameter in mm

Timer functions

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Timer function	Switching type		Receiver exposed Receiver dark

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	