



## Model Number

**LA28/LK28-FC-Z/31/116**

Fire protection thru-beam sensor  
with terminal compartment

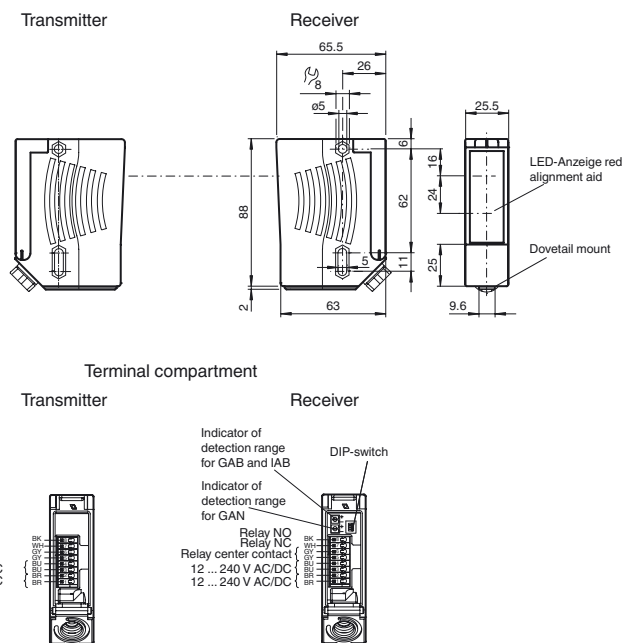
## Features

- Compact fire protection photoelectric sensor for safety devices on fire barriers
- Approval in accordance with VdS Test Report FSA and externally monitored manufacture (Ü Symbol)
- Not sensitive to ambient light, even with switched energy saving lamps

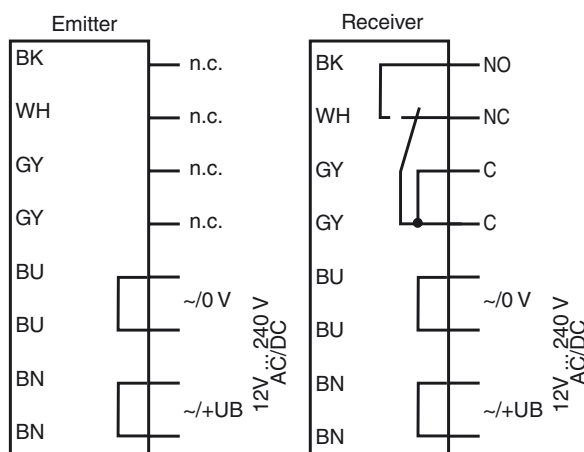
## Product information

It is essential that fire is not allowed to spread in buildings should it break out. Fire protection regulations therefore prescribe fire barriers. These include fire doors, industrial fire doors and fire dampers, which are generally kept closed at all times. In areas where doors are left open, such as heavily traveled passageways and corridors, a self-closing mechanism must be automatically triggered in case of fire. However, the door must not close when persons or objects are in the closing area. Legislation consequently requires monitoring with appropriate safety devices. The technical challenge is to ignore the smoke and at the same time reliably detect objects in it. These certified photoelectric sensors fulfill this function.

## Dimensions

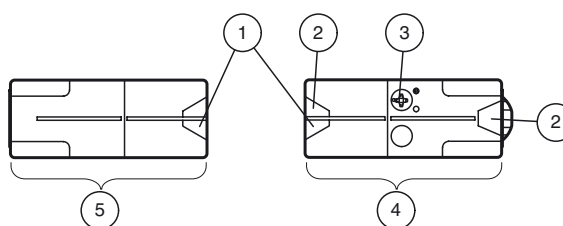


## Electrical connection



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	Schaltanzeige	yellow
3	Bright/dark switch	
4	Receiver	
5	Transmitter	

## Technical data

### General specifications

Effective detection range	0 ... 10 m
Threshold detection range	10 m
Light source	LED, 660 nm and IRED, 880 nm
Light type	modulated visible red light and modulated infrared light
Alignment aid	LED red (in receiver lens) illuminated constantly: beam is interrupted, flashes: reaching switching point, off: sufficient stability control
Diameter of the light spot	approx. 0.2 m at 10 m
Angle of divergence	Emitter 1.2°, Receiver 5°
Ambient light limit	50000 Lux

### Functional safety related parameters

MTTF <sub>d</sub>	490 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Indicators/operating means

Operation indicator	LED green
Function indicator	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
Control elements	Light-on/dark-on changeover switch ; Time adjuster

### Electrical specifications

Operating voltage	U <sub>B</sub>	12 ... 240 V AC/DC
Power consumption	P <sub>0</sub>	≤ 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

### Standard conformity

Standards	EN 60947-5-2 smoke insensitive up to 2 dB/m ( EN 54-12 )
-----------	---

### Ambient conditions

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)
Relative humidity	30% ... 85% non-condensing ; Non-icing

### Mechanical specifications

Degree of protection	IP67
Connection	terminal compartment with 8 spring-loaded terminals for wire cross section 0.5 ... 1.5 mm <sup>2</sup> , 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)

### 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.
CCC approval	Certified by China Compulsory Certification (CCC)
Approvals	VdS/DIBt certificate of compliance No. 25021

## Typical applications

- Securing hold-open devices on fire barriers in the vicinity of track-based conveyor systems
- Reliable object detection for doorway monitoring with fire barriers in the vicinity of track-based conveyor systems, even in smoky conditions

## 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

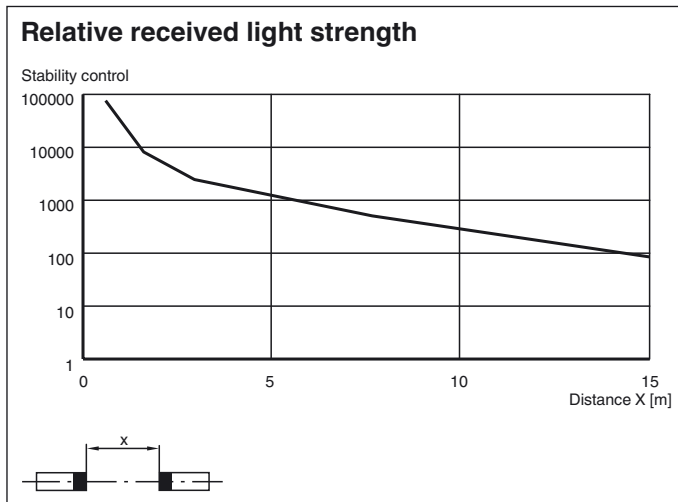
### OMH-21

Mounting bracket

### OMH-22

Mounting bracket

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)



## Functional principle

Fire protection photoelectric sensors are photoelectric sensor systems as safety devices for hold-open systems on fire barriers. The safety device is used to monitor the closing area of fire barriers for obstacles. The safety device ensures that the barrier is only closed if there are no obstacles in the closing area.

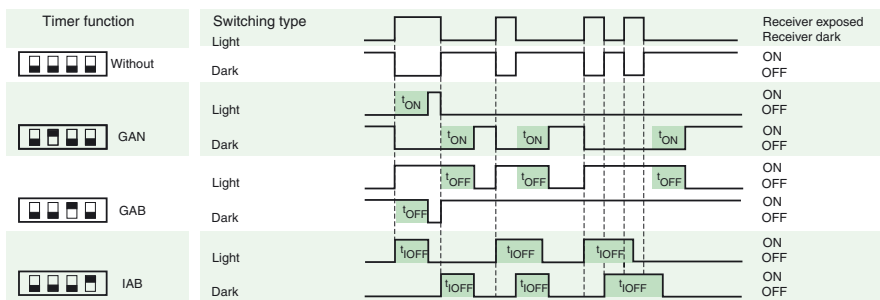
The LA28/LK28-FC is a thru-beam sensor with a power supply for 12 - 240 V AC/DC.

The thru-beam sensor contains an emitter and a receiver in separate housings. These components must be optically aligned with one another in a single line. The light emitted from the source is detected by the receiver and evaluated. When the light beam is interrupted, the switching function is triggered.

With its high excess gain at sensing ranges of up to 10 m, the thru-beam sensor is suitable as a safety device for hold-open devices on fire barriers. The photoelectric sensor is insensitive to reflective and shiny objects.

### Setting the timer functions:

The desired timer function can be set with the DIP switches.



Time t<sub>ON</sub>, t<sub>ON</sub> and t<sub>OFF</sub> are adjustable from 0.1 to 10 seconds.  
The H/D Switch (Left, outer switch) is shown in the "Dark ON" position.

Version	Description	Notes
-Z	"OFF delay" time relay, (GAB)	Time range adjustable, 0.1 s - 10 s
	Impulse-type "OFF delay" time relay, (IAB)	
	"On delay" time relay, (GAN)	
	"ON/OFF delay" double time relay (GAN/GAB)	
	"ON impulse-type/OFF delay" double time relay (GAN/IAB)	