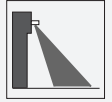




## Passive infrared motion sensor

### PIR20/31 sw



- Door activation sensor
- One of the smallest sensors for person detection
- Reliable detection through change in the thermal image from  $\pm 0.5^\circ\text{C}$
- Accurate and seamless field adjustment through aperture and zoom function
- Function only in case of movement

Presence detector using infrared heat radiation for detecting people, detection range 1.8 m x 2.6 m, max. installation height 5 m, black housing, relay contact output, screw terminals

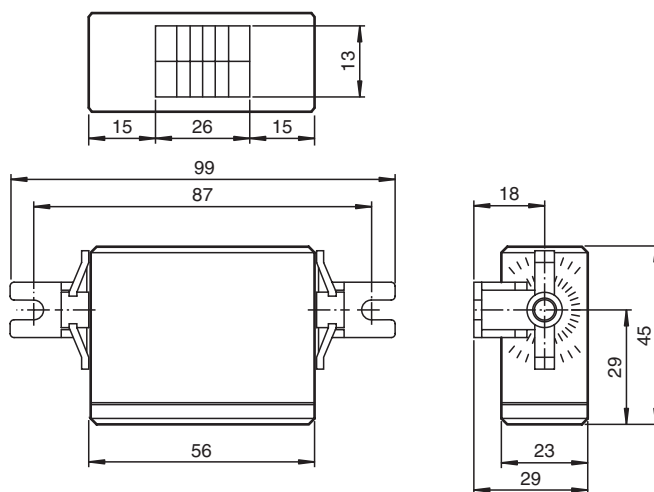


## Function

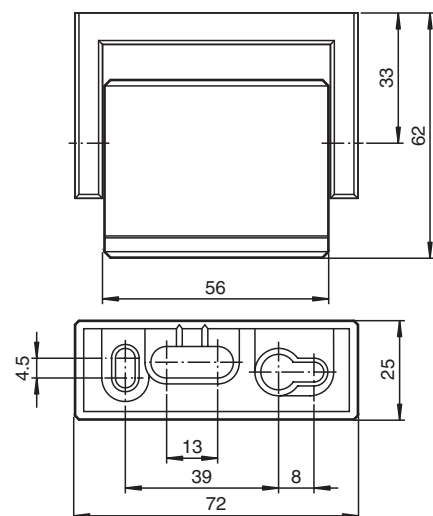
The PIR20 passive infrared scanner enables problem-free detection of people. It detects movement as soon as the temperature differential between an object and its environment is greater than  $\pm 0.5^\circ\text{C}$ . The detection range can be accurately set by means of zoom adjustment and lens apertures. The PIR20 detects people approaching as a door.

## Dimensions

Mounting dimensions with mounting bracket



Mounting dimensions for swivel



## Technical Data

### General specifications

|                           |                                                         |
|---------------------------|---------------------------------------------------------|
| Effective detection range | max. 12 m (frontal)                                     |
| Detection field           | max. 1800 mm x 2600 mm for a mounting height of 2500 mm |

### Functional safety related parameters

|                   |                                                                                                                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MTTF <sub>d</sub> | Relay load 12 V/10 mA: 500 a*<br>Relay load 24 V/10 mA: 350 a*<br>Relay load 6 V/100 mA: 100 a*<br>Relay load 30 V/1 A: 0.1 a*<br>*For 200,000 switching cycles/year in each case |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Indicators/operating means

|                     |                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------|
| Operation indicator | LED green                                                                                                 |
| Function indicator  | LED red: illuminates upon detection                                                                       |
| Control elements    | Zoom screw for adjusting the detection field , sensitivity adjustment , changeover switch, active/passive |

### Electrical specifications

|                        |                |                                 |
|------------------------|----------------|---------------------------------|
| Operating voltage      | U <sub>B</sub> | 12 ... 24 V AC / 12 ... 30 V DC |
| No-load supply current | I <sub>0</sub> | approx. 15 mA                   |
| Power consumption      | P <sub>0</sub> | approx. 350 mW at 24 V          |

### Output

|                    |                  |                                     |
|--------------------|------------------|-------------------------------------|
| Switching type     |                  | Output active/passive, programmable |
| Signal output      |                  | Relay, 1 alternator                 |
| Switching voltage  |                  | 48 V AC/DC                          |
| Switching current  |                  | 1 A                                 |
| Switching power    |                  | max. 30 W / 60 VA                   |
| De-energized delay | t <sub>off</sub> | 0.5 s (preset)                      |

### Compliance with standards and directives

|                     |            |
|---------------------|------------|
| Standard conformity |            |
| Standards           | 89/336 EWG |

### Approvals and certificates

|               |     |
|---------------|-----|
| CE conformity | yes |
|---------------|-----|

### Ambient conditions

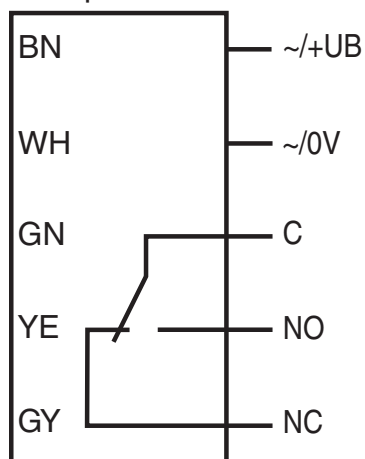
|                     |                               |
|---------------------|-------------------------------|
| Ambient temperature | -20 ... 60 °C (-4 ... 140 °F) |
|---------------------|-------------------------------|

### Mechanical specifications

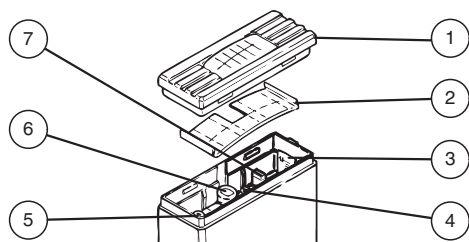
|                      |                            |
|----------------------|----------------------------|
| Mounting height      | recommended: max. 3.5 m    |
| Degree of protection | IP52                       |
| Connection           | screw terminals, removable |
| Material             |                            |
| Housing              | black ABS                  |
| Optical face         | plastic lens               |
| Mass                 | approx. 40 g               |

## Connection Assignment

Option:

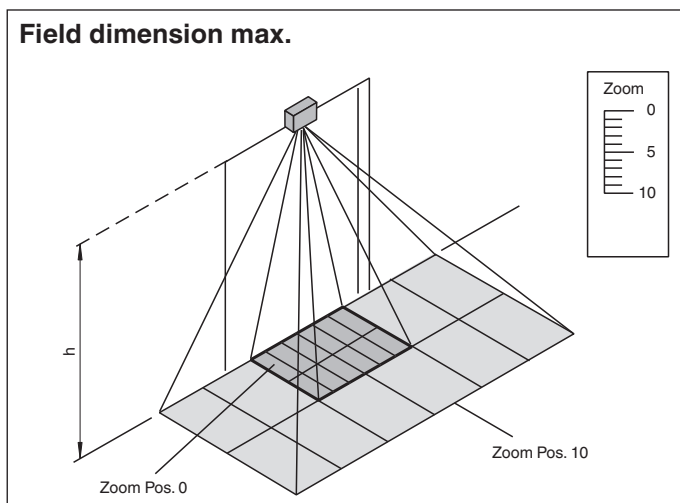


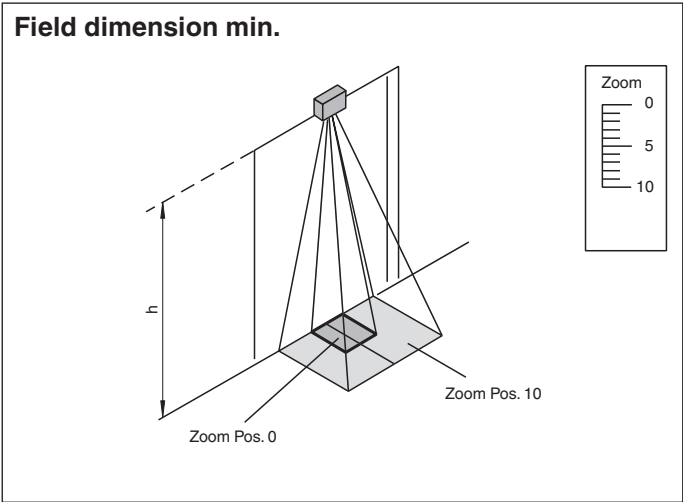
## Assembly



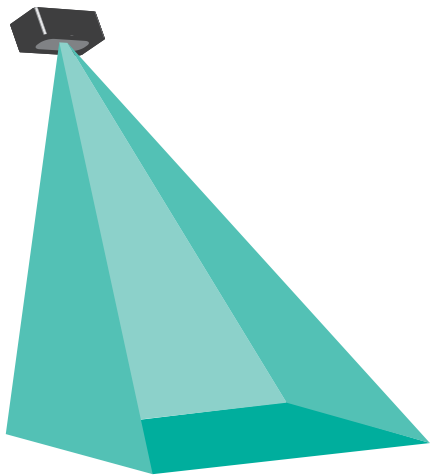
|   |                       |
|---|-----------------------|
| 1 | Housing cover         |
| 2 | Lens cover            |
| 3 | Zooming scale         |
| 4 | Zooming screw         |
| 5 | Sensitivity adjuster  |
| 6 | LED                   |
| 7 | Switch active/passive |

## Characteristic Curve





**Application**



**Accessories**

|                                                                                     |                                 |                                              |
|-------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------|
|  | <b>Wetterschutzhaube PIR 20</b> | Weather hood for series PIR20                |
|  | <b>Flush Mounting PIR20</b>     | Flush-mounted frame for sensors in the PIR20 |

Release date: 2020-10-08 Date of issue: 2020-10-08 Filename: 417999\_eng.pdf

## Accessories

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

## Function Principle

The passive infrared scanner functions differently to most optical sensors — as a passive device. A passive device is not equipped with a transmitter element, but does feature a receiver element. The receiver reacts to heat emission in the form of infrared light transmitted by the human body. This infrared light is detected by a multi-part lens system (fresnel lens), which means that the intended detection range can be fully covered by the receiver. Within 20 seconds of switching on the sensor, the receiver measures and stores the infrared image identified. A switching signal is transmitted when two conditions have been met:

1. The temperature of the object to be detected deviates from the ambient temperature by at least  $\pm 0.5^{\circ}\text{C}$ .
2. The object to be detected moves at a speed of at least 100 mm/sec.

## Application

- Detection of movement by people
- Opening impulse sensor for people at automatic doors
- Elevator entrance area monitoring