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 +/- 0.5 °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

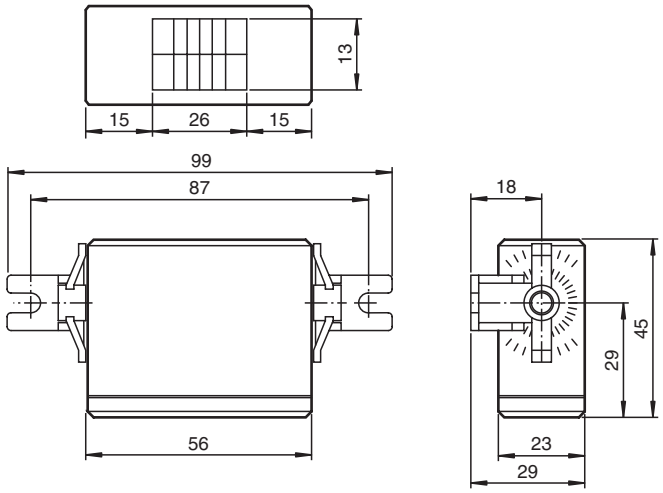
CE

Function

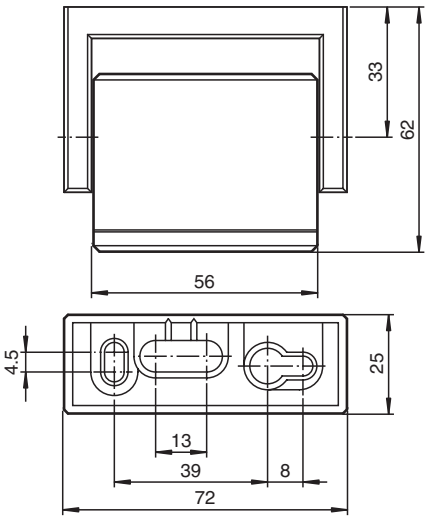
The PIR20 passive infrared scanner enables problem-free detection of people. It detects movement as soon as the temperature differential between an object and its environment is greater than ± 0.5°C. The detection range can be accurately set by means of zoom adjustment and lens apertures. The PIR20 detects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

Dimensions

Mounting dimensions with mounting bracket



Mounting dimensions for swivel



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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		
$MTTF_d$		Relay load 12 V/10 mA: 500 a* Relay load 24 V/10 mA: 350 a* Relay load 6 V/100 mA: 100 a* Relay load 30 V/1 A: 0.1 a* *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_B	12 ... 24 V AC / 12 ... 30 V DC
No-load supply current	I_0	approx. 15 mA
Power consumption	P_0	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_{off}	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

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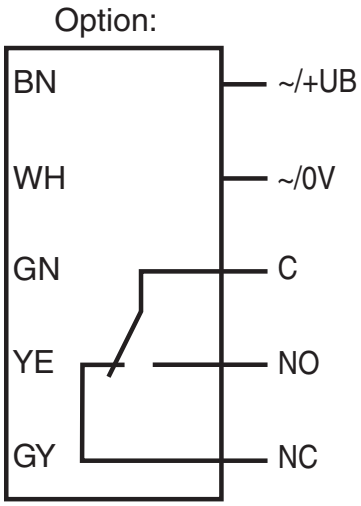
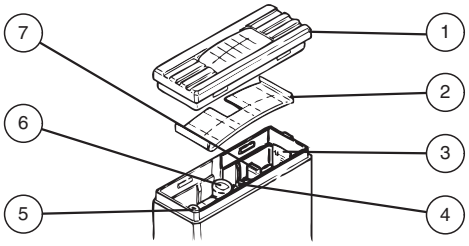
Connection Assignment



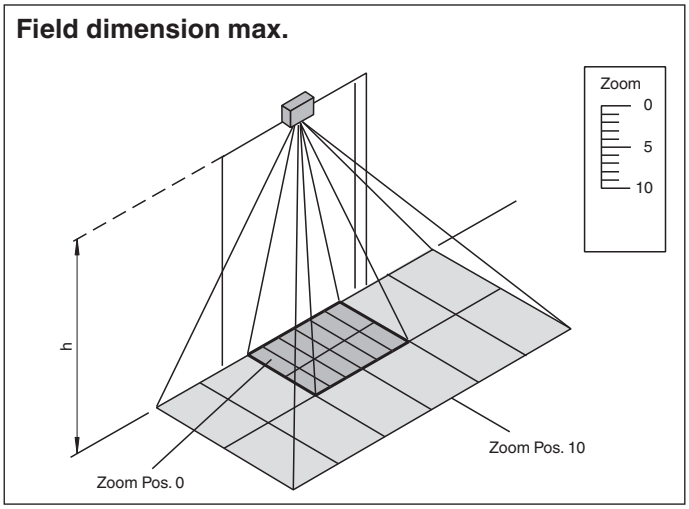
Assembly



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

Characteristic Curve

Field dimension max.



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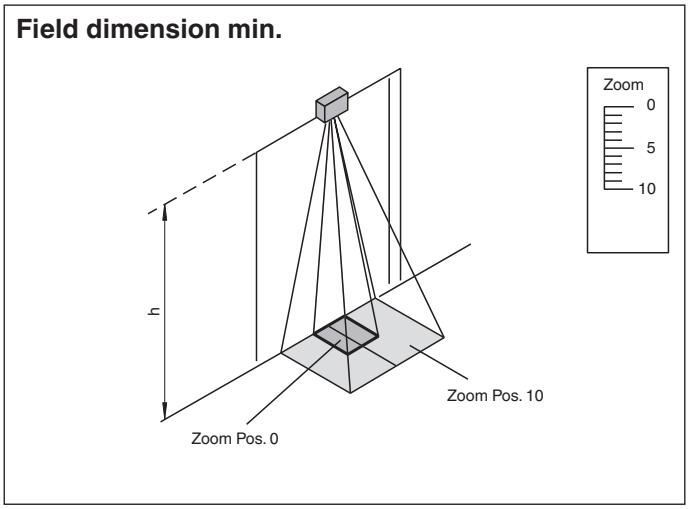
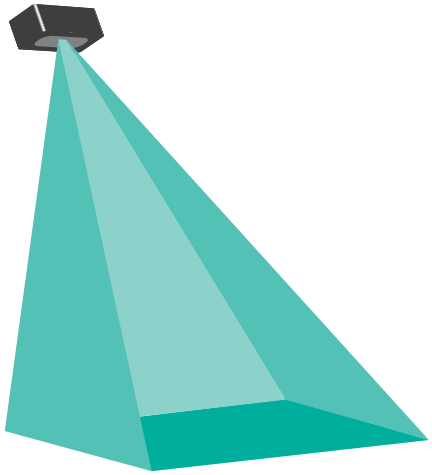
Field dimension min.



Application



Accessories

	**Wetterschutzhaube PIR 20**	Weather hood for series PIR20
	**Flush Mounting PIR20**	Flush-mounted frame for sensors in the PIR20

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Accessories

Other suitable accessories can be found at 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 ± 0.5ºC.
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

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