RF940U Pet Friendly Passive-infrared (PIR) Detector

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BOSCH
Invented for life

- Space for an OEM RF module
- Wall and cover tampers
- Walk-Test LED
- Dynamic temperature compensation
- Wall or corner mount; optional swivel or ceiling bracket

The RF940U is a high performance PIR motion detector with a field of view divided into 77 zones and two optional lookdown zones. The detector uses advanced signal processing to provide outstanding catch performance and false alarm immunity. With Bosch's Pet Friendly® pet immunity, the RF940U tolerates pets and animals such as a dog up to 13.6 kg (30 lb), two cats, or numerous rodents.
The unit is designed to accept an OEM RF module.

Functions

Battery Life
The battery life depends on the actual installation and RF transmitter characteristics. The RF940U is designed to operate below 0.025 mA average current except in Walk Test mode. Assuming a daily average of 100 alarm activations and restorals and a supervisory transmission every 15 min, a 3 to 5 year battery life is possible depending on the amount of RF transmitter current consumption.

The designed operating input voltage for the RF940U is 2.5 VDC to 3.1 DC measured at the battery holder. The end of life for the battery is determined by the attached RF transmitter and should be at or above 2.5 VDC as measured during an RF transmission.

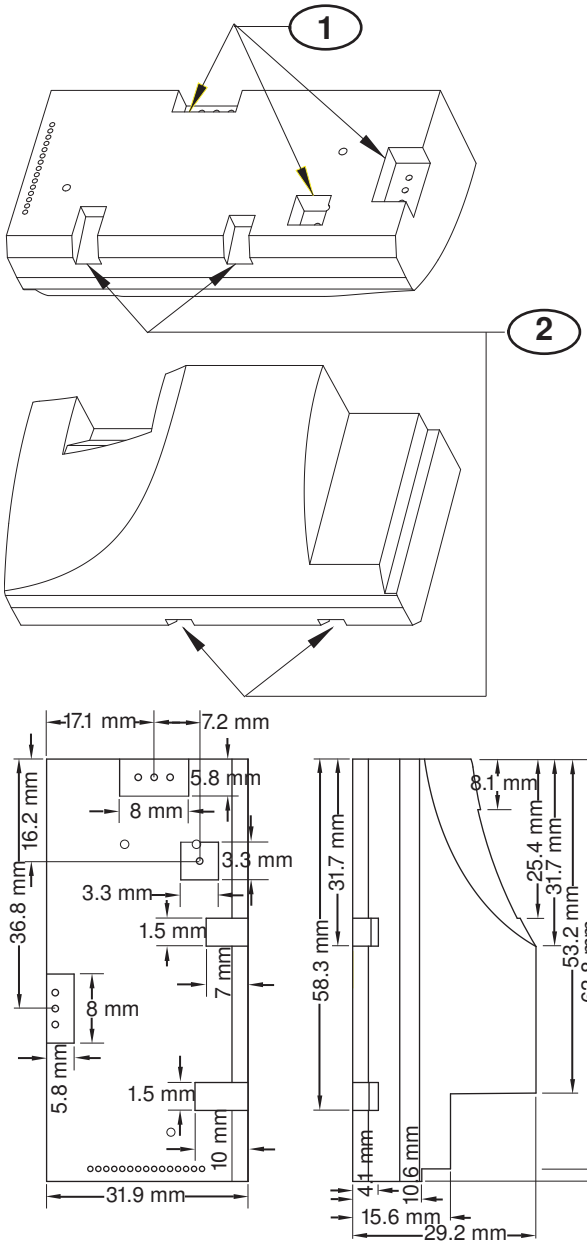
Dynamic Temperature Compensation
The RF940U automatically monitors the ambient temperature and adjusts the signal processing to maintain proper catch performance in critical temperature ranges.

Lockout Timer
To maximize battery life, the RF940U has a 3-minute lockout timer. If activity is detected, the first alarm signal is sent immediately; no further signal is sent for 3 minutes. Under continuous activity, an alarm signal is sent every 3 minutes rather than continuously, preventing rapid battery drain.

Pet Immunity
The detector distinguishes between signals caused by humans and signals caused by pets with a combined weight up to 13.6 kg (30 lb). The detector's look-down

zones are masked, and there are mounting height requirements for pet applications. Refer to the *RF940U Installation Instructions* (P/N: 41651).

RF Transmitter
This detector has a transmitter interface, but is not supplied with an RF transmitter. Pins for Battery +, Ground, Alarm Logic, and Tamper Logic are provided. The RF module must fit within the volume indicated in the following diagrams:



1 Clearance for pins on RF940U circuit board

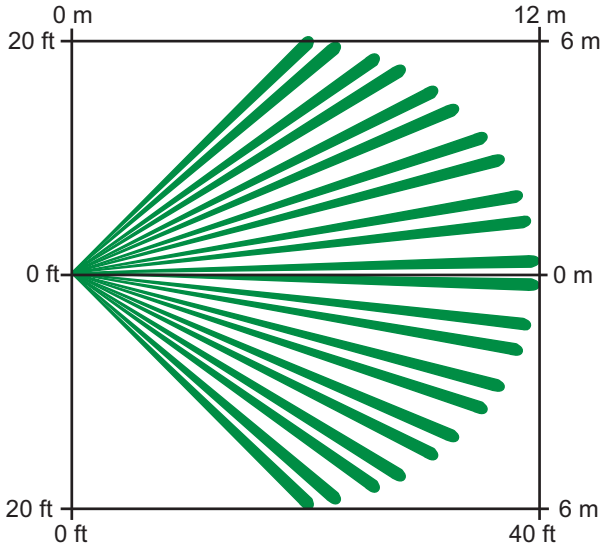
2 Clearance for ribs on RF940U enclosure base. The RF module must sit above these areas for maximum RF module circuit board size.

Tampers
To reduce the chance of sabotage, the RF940U has a cover tamper and an optional wall tamper. The cover tamper, which cannot be bypassed, sends a tamper signal to the control pin on the main circuit board when the detector's front cover is removed. When the cover is replaced, the state of the control pin is restored to normal.

Walk Test Mode
A red light-emitting diode (LED) that is only active during Walk Test Mode helps the user determine the detection area. Remove and replace the front cover to put the RF940U into Walk Test Mode for 90 sec. If activity is detected during the 90 sec Walk Test period, the timer is automatically reset for an additional 90 sec. If no activity is detected, the LED flashes during the final 10 sec of the Walk Test period. At the end of the 90 sec period, if no activity has been detected, the Walk Test Mode ends and the LED turns off.

Installation/configuration notes

Coverage Patterns
Coverage Pattern Legend



Top View: 12 m x 12 m (40 ft x 40 ft)

Side View: 12 m x 12 m (40 ft x 40 ft)

Mounting Considerations
Mount to a wall, in a corner, or with an optional bracket at a height between 2.1 m (7 ft) and 2.7 m (9 ft).

- Temporarily mount the detector using double-sided tape, and test it for both detector coverage and RF range from the desired location before mounting it permanently.
- Mount the detector where an intruder will most likely cross through the coverage pattern.
- Do not mount in areas with large metallic surfaces such as heating ducts or electrical wiring which may prevent the sensor's RF signals from reaching the RF receiver.
- Do not mount the detector outdoors or in direct sunlight.
- In pet immune applications, do not mount where pets can climb because the upper detection zones are not immune to pets.

Notice
Optional mounting brackets can reduce the range and increase dead zone areas. Do not use brackets in pet immune applications. The wall tamper can only be used in wall-mount installations; it does not work in corner or bracket installations.

Battery Recommendations
The following battery types are recommended for correct operation of your detector: Duracell® DL123A or Panasonic® CR123A.

Parts included

Quant.	Component
1	PIR detector
1	Hardware pack
1	Literature pack

Technical specifications

Environmental Considerations

Relative Humidity:	Up to 85%, non-condensing
Radio Frequency Interference (RFI) Immunity:	No alarm or setup at critical frequencies between 26 Hz and 1 GHz for field strengths less than 30 V/m
Temperature (operating):	0°C to +49°C (+32°F to +120°F)

Mechanical Properties

Dimensions:	11.4 cm x 6.4 cm x 4.1 cm (4.5 in. x 2.5 in. x 1.6 in.)

Power Requirements

Battery Power

Battery Requirements:	One 3 V, type 123A lithium battery
Current:	<0.025 mA nominal (PIR only)
Input voltage:	2.5 VDC to 3.1 VDC
Recommended Replacements:	Duracell® DL123A, Panasonic® CR123A

Transmitter Interface Characteristics

Alarm Lockout Time:	3 min
Alarm and Tamper Outputs:	Active State: High-impedance tri-state Inactive State: 1 mA current sink, V_{out}LOW = 0.25 VDC at 1 mA
Alarm Output Time:	8 sec minimum (4 sec minimum in Walk Test Mode)
Tamper Output Time:	4 sec minimum
Recommended End of Battery Signaling:	2.5 VDC
Walk Test Mode:	90 sec, retriggerable

Trademarks

Duracell® is a registered trademark of the Gillette Company, USA, in the United States and/or other countries.

Panasonic® is a registered trademark of a Matsushita Electric Industrial Co., Ltd.

Pet Friendly® is a registered trademark of Bosch Security Systems in the United States.

Ordering information

RF940U Pet Friendly Passive-infrared (PIR) Detector
Tolerates pets and animals such as a dog up to 13.6 kg (30 lb), two cats, or numerous rodents
Order number **RF940U**

Accessories

Swiveling B335-3 low-profile mount
Swiveling, low-profile, plastic mount for wall mounting. The vertical swivel range is +10° to -20°, while the horizontal swivel range is ±25°. Available in triple packs.
Order number **B335-3**

B338 Universal Ceiling-mount Bracket
Swiveling plastic mount for ceiling mounting. The vertical swivel range is +7° to -16°, while the horizontal swivel range is ±45°.
Order number **B338**

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