Rf360

Advanced Ceiling Mount Quad PIR

INSTALLATION INSTRUCTIONS

WINNER — THE PREMIER AWARDS 2002 & 2001 — CATEGORY WINNER INTRUDER ALARM MANUFACTURER — EXCELLENCE IN CUSTOMER CARE & SERVICE

INTRUDER ALARM MANUFACTURER NO.1 CLUB — OF THE YEAR 2000

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1 INTRODUCTION

The *Rf360*™ state-of-the-art Ceiling Mount Quad PIR from Texecom features an omni-directional quad-element pyro for true 360° pickup. Advanced microprocessor based signal analysis maintains the highest false alarm immunity in all environmental conditions. The *Rf360* allows maximum flexibility yet remains simple to install.

Outstanding features of the *Rf360* include:

- ✓ **Quad element pyro for true 360° pickup**
- ✓ **200V/m immunity to digital mobile phones**
- ✓ **70V/m advanced RF protection up to 1GHz**
- ✓ **Fuzzy logic signal analysis**
- ✓ **Neural based environment learning**
- ✓ **True temperature compensation**
- ✓ **Multi-mode pulse count**
- ✓ **Sealed optics**
- ✓ **Latch input**
- ✓ **First to alarm indication**
- ✓ **Remote LED disable**

2 QUALITY ASSURANCE

All Texecom products are designed and manufactured for reliable, trouble-free operation. Quality is carefully monitored by extensive computerised testing.

A member of both the British Security Industry Association (BSIA) and the European Association of Security Equipment Manufacturers (EASEM), Texecom is also a quality assured company to ISO 9002.

European standards: conforms to European Union (EU) Electro-Magnetic Compatibility (EMC) Directive 89/336/EEC.

Rf360 is a trademark of Texecom Ltd.

Exclusive worldwide patents.

BSI REGISTERED — UKAS QUALITY MANAGEMENT 003

Certificate Number: FM 35285

CE

BSIA British Security Industry Association

3 WARRANTY

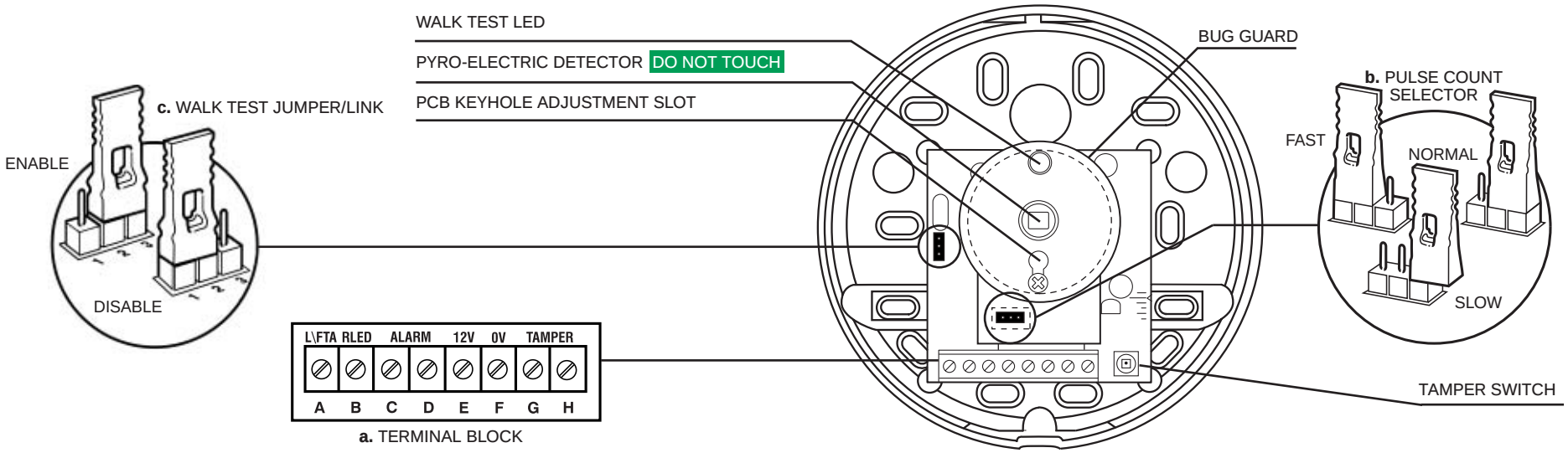
All Texecom products are designed for reliable, trouble-free operation. Quality is carefully monitored by extensive computerised testing. As a result, the *Rf360* is covered by a ten year replacement warranty against defects in materials or workmanship (details on request).

The *Rf360* is designed to detect the movement of an intruder and activate an alarm control panel. As the *Rf360* is not a complete alarm system, but only a part thereof, Texecom cannot accept responsibility or liability for any damages whatsoever based on a claim that the *Rf360* failed to function correctly.

Due to our policy of continuous improvement Texecom reserves the right to change specification without prior notice. All specifications are measured at 20˚C (68˚F).

Document Ref: Rf360/EU/1.0-3

Figure 1



4 Rf360 SPECIFICATION

4.1 Coverage

Directionality:	Omni-directional true 360° coverage.
Lens Facets:	31 lens facets, each with a 4 element zone projection.
Coverage Angle:	112° conical.
Protection Area:	7.0m (23ft) diameter when mounted at 2.4m (8ft). 10.5m (35ft) diameter when mounted at 3.6m (12ft).

4.2 Electrical

Voltage:	9 - 16VDC.
Current:	16mA typical at 12VDC.
Maximum Ripple:	2Vpp at 12VDC (50 - 120Hz sinusoidal).
Alarm Output:	Normally closed (failsafe) voltage free relay contacts. Rated at 24VDC, 50mA protected by 18Ω series resistor.
Tamper Output:	Normally closed voltage free switch contacts. Rated at 24VDC, 50mA.
Alarm Period:	2 - 3 seconds typical.
Walk Test LED:	Internal link to enable/disable.
Remote LED Disable:	Switched input between 0VDC and 12VDC, (16VDC max).
Latch Input:	Switched input between 0VDC and 12VDC, (16VDC max).
Detection Method:	Passive Infrared.
Pyro-electric Detector:	Quad element, omni-directional, low noise.

4.3 False Alarm Protection

Design:	Fuzzy logic signal analysis. Neural based environment learning. Noise reduction circuits with maximum ground plane.
RF Immunity:	No false alarms at 200V/m due to digital telephone disturbances, tested to DD ENV 50204 : 1996, at 900MHz. No false alarms from 80MHz to 1GHz at 70V/m modulated, equivalent to a 1400W uniform transmitter at 3m (10ft). Complies with BS EN 61000-4-3 : 1997.
Electrostatic Discharge:	No false alarms up to 8kV. Complies with BS EN 61000-4-2 : 1995.
Fast Transient Immunity:	No false alarms up to ±4kV. Complies with BS EN 61000-4-4 : 1995.

4.3 False Alarm Protection (continued)

High Energy Transient Immunity:	No false alarms up to ±2kV. Complies with BS EN 61000-4-5 : 1995.
Conducted RF Susceptibility:	No false alarms at 10Vrms. Complies with BS EN 61000-4-6 : 1996.
Conducted Emissions:	Complies with EN 55022 Class B.
Radiated Emissions:	Complies with EN 55022 Class B. Complies with DD ENV 50204 : 1996.
EMC:	Independently certified to EN 50130-4 : 1996.
Pulse Count:	Multi-mode Pulse Count. Internal link to select.

4 (continued)

4.4 Environmental

Operating Temperature: -35°C (-31°F) to +55°C (+131°F).

Temperature Compensation: Microprocessor controlled true temperature compensation.

Temperature Tolerance: No false alarms up to 1.7°C/minute (3°F/minute).

Maximum Humidity: 95% non-condensing.

Storage Temperature: -35°C (-31°F) to +60°C (+140°F).

EMC Environment: Residential/Commercial/Light Industrial or Industrial.

4.5 Physical

Casing: 2.5mm (0.1") wall thickness in flame retardant ABS. Designer white with super-white lens.

Dimensions: 113mm diameter x 30mm (4.4" x 1.2").

Packed Weight: 125g (4.5oz) approx.

5 CHOOSING A LOCATION

Select a suitable location for the *Rf360* according to the following criteria:

- **Do not mount the unit where it could be affected by:**
  - Glass areas (e.g. windows, patio doors)
  - Hot or cold objects (e.g. heaters, air conditioning units)
  - Light sources (e.g. filament lamps, fluorescent tubes)
- **Avoid exposing the unit to:**
  - Condensation or high humidity (e.g. near kettle)
  - Hot or cold air circulation (e.g. above radiator or vent)
  - Direct sunlight (e.g. near window)
- The mounting surface should be stable and vibration-free
- Do not mount on false ceilings
- Suitable for internal use only

6 MOUNTING THE Rf360

The recommended mounting height for the *Rf360* is 2.4m (8ft). The detection range diameter will increase if mounted higher than 2.4m and decrease if mounted lower (see Figure 2).

To open the *Rf360* partially undo the retaining screw then insert a flat-head screw driver into opening slot and twist (see Figure 3). The front cover may now be eased off from the underside of the casing.

Refer to Figures 4 and 5 to select suitable knockouts for mounting the back on the ceiling.

In normal use it will not be necessary to remove the PCB when mounting the *Rf360*, however the PCB may be removed by gently easing off the bug guard (see Figure 1), slackening the PCB retaining screw and easing out the PCB by sliding it forwards. Care should be taken not to strain or damage any of the sensitive components during this procedure. When replacing the PCB follow the reverse of the above procedure making sure the PCB is correctly located within the four PCB location corners of the plastic.

Figure 2

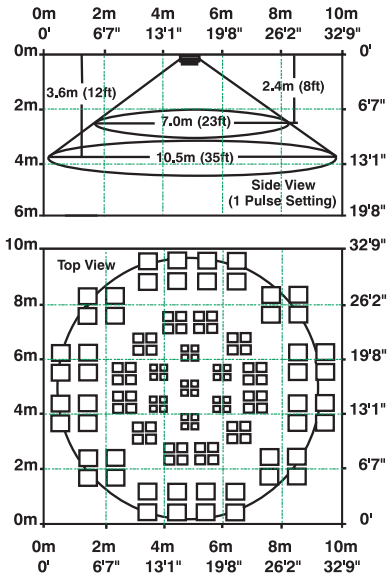


Figure 3

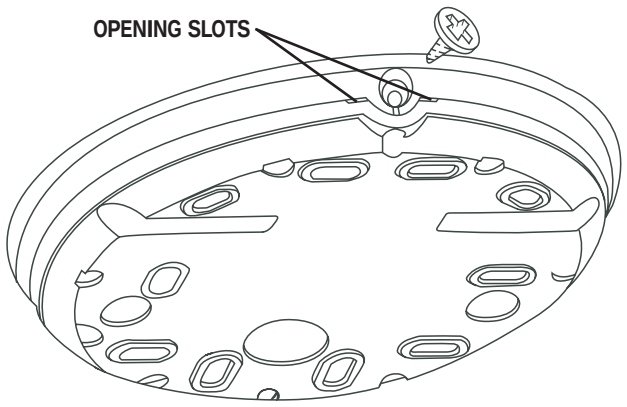


Figure 4

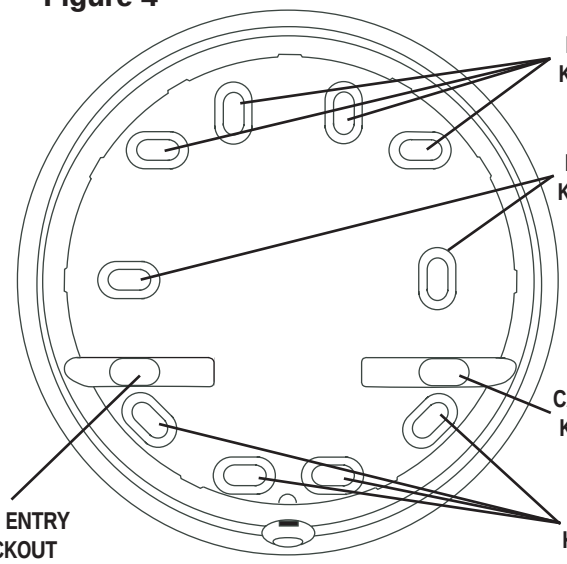
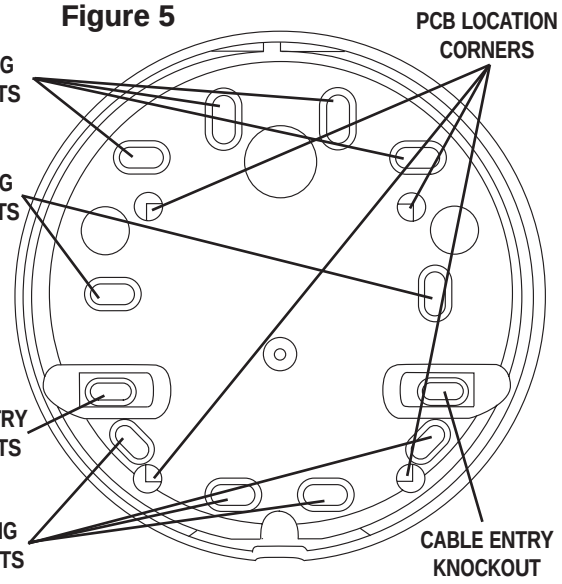


Figure 5



7 WIRING

Refer to Figures 4 and 5 to select knockouts for chosen cable entry route. Connect wires to the terminal block in the following order (see Figure 1a).

Terminal

L/FTA Latch/First to Alarm input. Connect to "Set Positive" or "Alarm Positive" on alarm control panel. (Not suitable for use on entry/exit or intermediate (inhibited entry) zones).

RLED Remote LED disable input. Connect to 12VDC to disable LED, 0VDC to enable LED.

ALARM Alarm relay contacts. Connect to a normally closed intruder zone on the alarm control panel.
- normally closed relay contacts protected by an 18Ω series resistor
- open on intruder detection or power failure

12V Connect to auxiliary +12VDC on the alarm control panel.

0V Connect to auxiliary 0VDC on the alarm control panel.

TAMPER Connect to a normally closed tamper zone on the alarm control panel.
- normally closed switch contacts
- open on removal of front cover

Note
- Alarm cable should not be run alongside/parallel to mains wiring
- To comply with EU Directives the *Rf360* must be connected to a power source supplied from an isolating transformer

8 USER SELECTABLE FUNCTIONS

8.1 Pulse Count

The *Rf360* utilises a unique multi-mode pulse count technique. This analyses the size and speed of the target as well as digitally counting pulses. The design allows the greatest flexibility between fast catch performance and maximum false alarm immunity. Three pulse count settings are available (see Figure 1b):

Fast **Maximum sensitivity** when fast detection performance is a priority for high security installations. One zone edge crossing will cause an alarm activation.

Normal **(Factory Set).** Two zone edge crossings are required for an alarm activation.

Slow **Maximum immunity** to false alarms. Three zone edge crossings are required for an alarm activation.

8.2 Latch Input Functions

The latch terminal (see Figure 1a) can perform several different functions depending on how it is connected:

Latch Connected to Set Positive (SW+, Set+): The LED will be disabled while the system is set. Any detectors triggered while the system is set will indicate this by permanently lighting the LED (upon unsetting the system). Detectors can be reset by taking the latch line high and then low again.

Latch Connected to Alarm Positive (AL+, A+Ve): The first detector activated while the system is set will indicate this with a slowly flashing LED (upon unsetting the system). Detectors which had activated subsequently will indicate this by permanently lighting the LED. Detectors can be reset by taking the latch line high and then low again.

The latch input is not suitable for use on entry/exit or walk through zones.

9 WALK TEST

Check the detector operation by powering up the *Rf360* and ensure that between 9VDC and 16VDC is supplied to the detector (see Figure 1a).

Replace the front cover by hooking it on at the top and then clip it closed at the bottom. Allow three minutes for the *Rf360* to warm up and stabilise before walk testing. With the Walk Test LED enabled (factory-set, see Figure 1c), walk test the area. Detection is indicated by the Walk Test LED lighting up, allowing coverage to be checked. Allow five seconds between each test for the *Rf360* to stabilise. Walk test at least once a year.

Remember
- Always instruct the user not to obstruct the field of view
- Large objects near the *Rf360* will reduce coverage

There are several ways that the Walk Test LED can be disabled to prevent unauthorised persons from tracing the coverage pattern (see Figure 1c):

LED Disable Jumper:
Enable **Link upper two pins** to enable the Walk Test LED
Disable **Link lower two pins** to disable the Walk Test LED

RLED Terminal: may additionally be used to enable (0VDC) or disable (12VDC) the LED - connect to a suitable output on the alarm control panel.

The front cover may now be permanently secured using the short screw supplied.