



## Freeko II Photoelectric Smoke & Heat Detector

### Installation Instructions

REV 2 (June 2012). Item: 4777\_SMK (A4BKE)



#### INTRODUCTION

The FR2\_SMK is an advanced, fully supervised Smoke Detector transmitter.

- Photoelectric Smoke & Heat detector
- State-of-the-art wireless security system
- Low current Technology
- Powered by a 3 Volt Lithium battery
- Battery life: at least 3 years
- Frequency Band: 868MHz
- Supervision transmission
- Battery condition signal transmission
- Tamper protected
- Unique ID number

Compatible with Freeko II receivers are designed to "Learn" the specific ID of FR2\_SMK detectors and respond only to them.

Alarm and other data are forwarded to the control panel for specific event indication.

A periodic test transmission for supervision purposes takes place automatically once in ~7 -10 min.

The receiver is informed that the FR2\_SMK detector is taking an active part in the wireless security system.

#### Smoke - Drift Compensation

The detector automatically compensates for long-term environmentally induced changes to maintain a constant smoke sensitivity. When the drift compensation has reached its high or low limit of adjustment, the detector will go into the trouble state.

#### Heat Alarm

The heat detector will go into alarm when the heat signal level exceeds the heat alarm threshold (135°F/57°C); and will automatically restore when the heat signal level falls below the heat alarm threshold (restore).

#### Tamper

The removal of the detector from the mounting plate initiates a "tamper" transmission. The tamper condition is restored after the detector is mounted on the plate.

**WARNING:** This smoke detector is designed for use in a single residential unit only, which means that it should be used inside a single-family home or apartment. Smoke detectors, placed in common areas outside the individual living unit, such as on porches or in hallways, may not provide early warning to residents

**WARNING:** This detector, if used as a stand-alone unit, will not alert people who have hearing problems.

#### WHERE TO INSTALL SMOKE DETECTORS

Smoke detectors should be installed in accordance with the NFPA Standard 74. For complete coverage in residential units, smoke detectors should be installed in all rooms, halls, storage areas, basements and attics in each family living unit. Minimum coverage is one detector on each floor and one in each sleeping area. Here are a few useful tips for you:

- Install a smoke detector in the hallway outside every separate bedroom area.
- Two detectors are required in homes with two bedroom areas.
- Install a smoke detector on every floor of multi-floor home or apartment.
- Install a minimum of two detectors in any household.
- Install a smoke detector inside every bedroom.
- Install smoke detectors at both ends of bedroom hallway if the hallway is more than 12m (40ft) long.
- Install a smoke detector inside every room where one sleeps with the door partly or completely closed, since the closed door could block smoke and a hallway alarm may not wake up the sleeper if the door is closed.
- Install basement detectors at the bottom of the basement stairwell.
- Install second-floor detectors at the top of the first-to-second floor stairwell.
- Be sure no door or other obstruction blocks the path of smoke to the detector.
- Install additional detectors in your living room, dining room, family room, attic, utility and storage rooms.
- Install smoke detectors as close to the center of the ceiling as possible. If this is not practical, put the detector on the ceiling, at least 10 cm (4 inch) away from any wall or corner.
- If ceiling mounting is not possible and wall mounting is permitted by your local and state codes, put wall-mounted detectors between 10-15 cm (4 - 6 inches) from the ceiling.
- If some of your rooms have sloped, peaked, or gabled ceilings, try to mount detectors 0.9 m (3 feet) measured horizontally from the highest point of the ceiling.

## WHERE TO INSTALL SMOKE DETECTORS IN MOBILE HOMES AND RVs

Mobile homes and RVs built after about 1978 were designed and insulated to be energy-efficient. In mobile homes and RVs built after 1978, smoke detectors should be installed as described above. Older mobile homes and RVs may have little or no insulation compared to current standards. Outside walls and roofs are often made of non-insulated metal, which can transfer thermal energy flow from outdoors. This makes the air right next to them hotter or colder than the rest of the inside air. These layers of hotter or colder air can keep smoke from reaching a smoke detector. Therefore, install smoke detectors in such units only on inside walls. Place them 10 - 15 cm (4 - 6 inches) from the ceiling. If you are not sure how much insulation is in your mobile home or RV, then install the detector on an inside wall. If the walls or ceiling are unusually hot or cold, then install the detector on an inside wall. Install one detector as close to the sleeping area as possible for minimum security, or install one detector in each room for more security. Before you install any detector, please read the following section on "Where Not to Install Smoke Detectors".

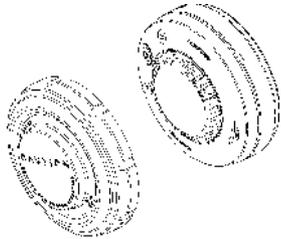
## WHERE NOT TO INSTALL SMOKE DETECTORS

False alarms occur when smoke detectors are installed where they will not work properly. To avoid false alarms, do not install smoke detectors in the following situations:

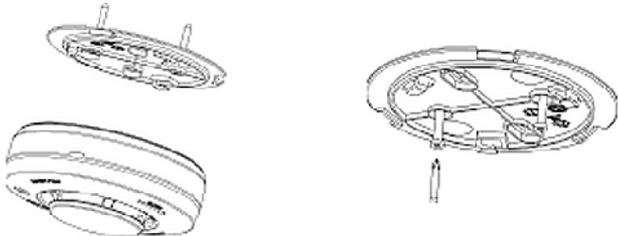
- Combustion particles are by-products of something burning. Do not install smoke detectors in or near areas where combustion particles are present, such as kitchens with few windows or poor ventilation, garages where there may be vehicle exhaust, near furnaces, hot water heaters and space heaters.
- Do not install smoke detectors less than 6 m (20 feet) away from places where combustion particles are normally present, like kitchens. If a 20-foot distance is not possible, e.g. in a mobile home, try to install the detector as far away from the combustion particles as possible, preferably on the wall. To prevent false alarms, provide good ventilation in such places.

## HOW TO INSTALL SMOKE DETECTORS

- Remove the Red protection cover from detector body.



- Hold mounting base firmly and turn it anti-clockwise to release it from the detector body.
- Hold the mounting base against the ceiling and mark the center of each slot. Drill 2 holes and install the mounting base with the screws.



- On the base open the battery case cover, Insert the battery according to the polarity marked on the battery housing, refer to page 8 drawing.
- Hold the detector against the mounting base and turn it clockwise until it fix.

## PREPARE YOUR SMOKE DETECTOR FOR INSTALLATION

### Battery Connection

1. Hold mounting base firmly and push the hinge, turn anti-clockwise to release the base down.
2. The FR2\_SMK comes with special mechanism within the battery holder that prevents the cover from closing if there is no battery inside.
3. The smoke detector is supplied with a 3V lithium battery.
4. Insert the battery into the battery compartment with the flexible contacts on the detector.

### ID Registration - "LEARN" Procedure

In order to learn the FR2\_SMK detector by the Freeko II receiver, please refer to the *Installer Manual*.

NOTE: It is recommended to power up the detector and let the target receiver "learn" the transmitter's ID before actual installation. Refer to the target receiver's installation instructions and follow the procedure given there for "learning" transmitter IDs. Make sure that the receiver is at learning mode - according to control panel installation instruction. Use the Back Tamper in order to enroll the unit into the Control Panel.

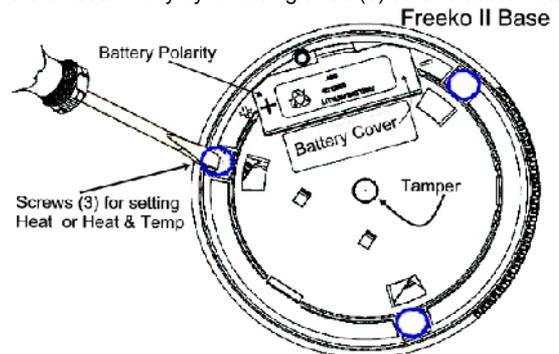
### Enroll the detector

Hold mounting base firmly and push the hinge, turn anti-clockwise to release the base down.

The tamper switch will be activated and issue a tamper event transmission that is used to enroll the smoke detector.

## SETTING UP DETECTION – HEAT OR HEAT & SMOKE (Option)

- The FR2\_SMK Detector can be set to detect Smoke and Heat or Heat only.
- The default setting is on Smoke & Heat.
- If change setting from default is not required - skip this paragraph!**
- Remove the battery
- Open the detector body by releasing three (3) screws at the bottom.

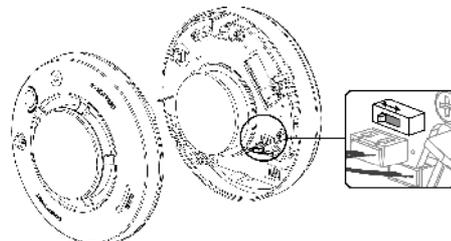


Reassemble the body cover on the base by aligning the snaps against their holders and pressing them together.

### Mode Setting:

Set the Slide switch according the printed on board.

**SMK**-Smoke & Heat. **TEMP**- Heat only (Continue on next page).



When reassembling the body, pay attention not to bend the Heat Sensor.

- Insert the battery
- Hold the Base against the mounting bracket and turn it clockwise until it "clicks".

### **BATTERY REPLACEMENT**

Make it a rule to replace the detector's battery once a year even if there is no indication that the battery is weak. Also be sure to replace it immediately upon reception of a low battery message via your control panel.

**The battery must be replaced only by Size 2/3 CR 17345V Lithium battery 3V Models: DL123A DURACELL Inc**

When the battery is low the detector will send warning signal to the control panel.

If the battery will not be replaced within a few days the beeper begins to beep.

Install a new battery immediately. Keep fresh batteries on hand for this purpose.

- Remove the detector body from the mounting base,
- Open the battery cover and remove the old battery,
- Install a new battery according to polarity and close the cover.
- Test the unit by pressing on the test button
- Re-mount the detector on the mounting base

**Caution: without batteries the unit cannot be mounted onto the bracket properly!**

Do not disconnect the battery from the detector. This will remove your protection from fire.

If the alarm horn begins to beep once a minute, this signal means that the detector's battery is weak. Install a new battery immediately. Keep fresh batteries on hand for this purpose.

1. Press the button and hold it till the smoke detector gives out an intermittent alarm. After 8 seconds, the alarm will convert to the rash sound like "Bi---Bi---Bi". It shows that it is in the normal condition.
2. If the test fails, stop using the detector immediately.
3. Don't test it with fire.
4. If the alarm makes low frequency sound several times, the battery is low.

### **IMPORTANT:**

- Never try to avoid false alarms by disabling the detector.
- Do not mount smoke detectors in the path of fresh air intake. The flow of fresh air in and out can drive smoke away from the smoke detector; thus reducing its efficiency.
- In damp or very humid areas or near bathrooms with showers. Moisture in humid air can enter the sensing chamber, then turns into droplets upon cooling, which can cause nuisance alarms. Install smoke detectors at least 3 m (10 feet) away from bathrooms.
- In very cold or very hot areas, including unheated buildings or outdoor rooms. If the temperature goes above or below the operating range of smoke detector, it will not work properly. The temperature range for your smoke detector is 4°C to 38°C (40°F to 100°F).
- In very dusty or dirty areas, dirt and dust can build up on the detector's sensing chamber, to make it overly sensitive. Additionally, dust or dirt can block openings to the sensing chamber and keep the detector from sensing smoke.
- Near fresh air vents or very drafty areas like air conditioners, heaters or fans. Fresh air vents and drafts can drive smoke away from smoke detectors.
- Dead air spaces are often at the top of a peaked roof, or in the corners between ceilings and walls. Dead air may prevent smoke from reaching a detector.
- In insect-infested areas. If insects enter a detector's sensing chamber, they may cause a nuisance alarm. Where bugs are a problem, get rid of them before putting up a detector.
- Near fluorescent lights, electrical "noise" from fluorescent lights may cause nuisance alarms. Install smoke detectors at least 1.5 m (5 feet) from such lights.

### **WARNING:**

Never remove batteries to stop a nuisance alarm. Open a window or fan the air around the detector to get rid of the smoke. The alarm will turn itself off when the smoke is gone. If nuisance alarms persist, attempt to clean the detector as described in this manual.

### **WARNING:**

Do not stand close to the detector when the alarm is sounding. The alarm is loud in order to wake you in an emergency. Too much exposure to the horn at close range may be harmful to your hearing.

### **TEST PROCEDURE**

**Test the detector weekly and also whenever you suspect that it does not go into alarm Walk Test.**

- Set the control panel to "Walk Test Mode" as described in the Installer Manual.
- Push the test button (fig 1d) with your finger until the beeper sounds
- Verify that the control panel responds to the transmitted smoke alarm.

**If the detector fails, have it repaired or replaced immediately, to ensure that it works properly.**

### **WARNING:**

Never use an open flame of any kind to test your detector. You may set fire to damage the detector as well as your home. The built-in test switch accurately tests all detector functions, as required by Underwriters' Laboratories. This is the only correct way to test the unit.

### **NOTE:**

If the alarm horn produces a loud continuous sound when you are not testing the unit, this means the detector has sensed smoke or combustion particles in the air. Verify that the alarm is a result of a possible serious situation, which requires your immediate attention.

The alarm could be caused by a nuisance situation. Cooking smoke or a dusty furnace, sometimes called "friendly fires" can cause the alarm to sound. If this happens, open a window or fan the air away to remove the smoke or dust. The alarm will turn off as soon as the air is completely.

**WARNING: Test this product at least once a week**

### **REGULAR MAINTENANCE**

Never use water, cleaners or solvents to clean your smoke alarm since they may damage the unit.

#### **Cleaning**

1. Open the cover and vacuum the dust off the detector's sensing chamber at least once a year. This can be done when you open the detector to change the battery. Remove the battery before cleaning. Use the soft brush attachment to your vacuum cleaner. Carefully remove any dust on detector components, especially on the openings of the sensing chamber. Replace the battery after cleaning. Test the detector to make sure that the battery is in correctly. Also make sure there is no foreign matter inside the test button.
2. NOTE: If nuisance alarms keep occurring, check whether the detector's location is adequate (see p.4.1 and 4.2). Relocate the unit if it is not located properly. Clean as described above.
3. To clean the detector's cover, first open the cover and remove the battery. Hand-wash the cover with cloth dampened with clean water. Dry it with lint-free cloth. Do not get any water on the detector components. Replace the battery, and close the cover. Test detector to make sure that battery works correctly.

**Dust reduces the smoke detector's sensitivity.**

**Clean the detector at least once a year, use air compressor or vacuum cleaner to remove dust out of unit.**

**LIMITATIONS OF SMOKE ALARMS**

1. United States NFPA72 tells that the safety of life is to be noticed by alarms before fire, to confirm the correct escape way. The fire systems help half of residents escape and we should help the old people, women and children more because they are always the victims.
2. Smoke alarms are not foolproof, they can't prevent or extinguish fires, and they are not a substitute for property or life insurance. You need buy some fire fighting facilities.
3. Sometimes the smoke is blocked by objects and can't reach the detector, and if the wind blows the smoke away from the detector, the unit won't work either.

**WARNING: Test this product at least  
once a week**

**THECNICAL SPECIFICATIONS**SMOKE DETECTOR

Detection Sensitivity:	2.3±1.2%/ft
Alarm Sound Level:	85 db at 3 m (10 feet)
Activity Indicator:	LED flashes once per 5 sec.
Audible Warning:	Built-in horn beeps ones Test mode Or Alarm

WIRELESS MODULE

Range	Up to 300 m at open space
Frequency	868.35MHZ
Identification	Unique ID serial number - 24 bit
Event Transmission	Alarm, Tamper, Supervision, Low Bat (~30 Days in advance)
Data Protocol	Freeko II
Test mode / activation	Beeper test & Alarm transmission test
EML rejection	up to 2 GHz > 10 V/m
Battery	Lithium 3 V Type: xx123 Size: 2/3 AA
Lithium battery (3V)	Life time approx. 3 years

ENVIRONMENTAL CONDITIONS

Operation temperature	-10 - +50 °C
Storage temperature	-20 - +60 °C
Humidity	< 85 % r. h. , non condensing
Housing protection	IP41 / IK02 (EN60529, EN50102)

Compiles with: EN 50130-4+A1+A2, EN301489-3, EN300220-3, EN60950-1, EN61000-6-3, EN50371

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Seller makes no other warranty, expressed or implied, and makes no warranty of merchantability or of fitness for any particular purpose.

In no Case Shall Seller Be Liable for Any Consequential or Incidental Damages for Breach of this or any Other Warranty, Expressed or Implied, or upon Any Other Basis of Liability Whatsoever.

**These instructions supersede all previous issues in circulation prior to April 2009.**

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