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Electronic Engineering Ltd
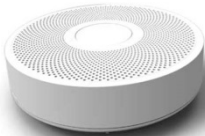
FW2-SMK-N-8F/9F

WIRELESS SMOKE DETECTOR

INSTALLATION INSTRUCTIONS
P/N 7102316_D

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INTRODUCTION

The FW2-SMK is an advanced, fully supervised low-current wireless smoke detector that includes a two-way wireless transceiver for reliable system operation.

The FW2-SMK is built with an advanced optical sensing photoelectric chamber and offer more than 10 years battery life.

FW2-SMK cutting edge in fire safety featuring an on-board horn, and send alerts to the CMS or your mobile device if an alarm occurs (if connected to a control panel – please refer to your installer).

The FW2-SMK Smoke detector includes series of messages for full communication administration: Keep Alive, Tamper protection, Battery Status, Alert, etc...

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FEATURES

- Photoelectric optical smoke chamber
- Freewave2™ two-way ISM
- GFSK with 5 frequencies & LBT
- Low current Technology
- Powered by a pack of 2 Lithium batteries 1.5V (Energizer L91)
- Battery life: ≥ 10 years
- Audible Warning by a built-in horn beeps once test mode, battery low or Alarm
- Frequencies Bands: 868 MHz or 916MHz
- Tamper Open/Close transmission.
- Keep Alive transmission
- Battery status transmission
- Bi-Color LED indications for monitoring & Pairing
- Range up to 500m open space

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OPERATION

The FW2-SMK Smoke detector transmits the following events:

KEEP ALIVE – A periodical transmission (configurable) indicating detector's connection.
ALARM – Alarm transmission triggered by the device indicating Smoke detection.
Horn activated and Red LED blinking.
LOW BAT – Whenever the battery reaches its low level (2.9 V), a Battery Low signal will be sent to the control panel.
Horn will beep and Red LED will blink every minute.
When Battery level drops below Cut Off level (2.5 V) the device will stop functioning and the Red LED will blink for 10 seconds and then turned Off.
TAMPER – Whenever device is tear off from the ceiling (bracket removal), a Tamper signal will be transmitted to the control panel and the Green LED will blink for 15 seconds. Replace the device in its bracket, cancel the tamper signal on the panel and wait 15 sec until the Green LED stops blinking.

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LEDs AND AUDIO INDICATIONS

Detector State	Horn	LED
Power Up	Bip 3 times	Green/Red blinking until ready
Pairing process	OFF	Green blinks
Pairing success	OFF	Green constant for 3 seconds
Pairing fail	OFF	Green blinks 250ms on 750ms off for 10 sec
Normal Mode	OFF	Green LED every minute
Alarm	ON	Red blinking
Trouble	Long beep every minute	Red blinks every 1 minute
Battery Low	short beep every 1 minute	Red short blink every 1 minute
self test ok	3 Beeps	Green 250ms on
Self test fail	1 short beep	Red 250ms on

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INSTALLATION LOCATIONS

Here are few useful tips for complete coverage in residential units:

- Install a smoke detector on every floor of multi-floor home or apartment.
- Install smoke detectors at both ends of bedroom hallway if hallway is more than 12m long.
- Install a smoke detector inside every room where one sleeps with the door partly or completely closed, since smoke could be blocked by the closed door 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 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 away from any wall or corner.

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WRONG INSTALLATION LOCATIONS

- 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 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 meters away from places where combustion particles are normally present. If a 6 meters distance is not possible 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.

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## WRONG INSTALLATION LOCATIONS
(Continue)

- The path of fresh air intake. The flow of fresh air in and out can drive smoke away from the smoke detector 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 meters 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.
- 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.

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WRONG INSTALLATION LOCATIONS
(Continue)

- 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 installing the detector.
- Near fluorescent lights, electrical "noise" from fluorescent lights may cause nuisance alarms. Install smoke detectors at least 1.5 meter from such lights.

Protection against reinstallation
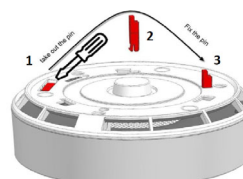
Feature:.the red pin prevents the device to be re-mounted back to the bracket, in case of replacing new smoke device.

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PAIRING PROCESS

For pairing process, please refer to your control panel instructions.

For Crow's Shepherd™ control panel:

1. Log into installer mode via the secured web installer interface.

2. Go to "Zones", select the zone # you want to learn , ADD ZONE -insert Link Type "ISM" , device's ID, Device Type "Smoke Detector".) and save configuration.

3. Press the pairing button to power up and start the pairing process of the device (fig. 1).

4. Please notice that the detector working mode should be " 24 hour fire alarm" automatically.

5. When registration process is successfully completed, the Green LED will constantly light ON for 3 seconds and then turn OFF.

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TESTING THE DEVICE

Make sure that the device is activated and eventualy paired to your control panel.
**Alarm test:**
Press shortly the "Test" button (Figure 2) - the smoke detector shall activate 3 beeps, indicating that the device is in the normal mode. Go to overview level from installer webpage and see the "**zone 24H alarm**" in the STATE column,If the test fails, stop using the detector immediately.

WARNING – DON'T TEST IT WITH FIRE !!!
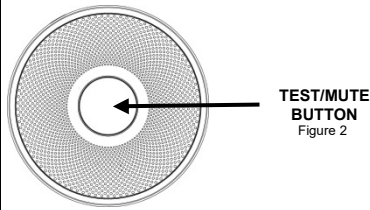
Tamper transmission test:
Attaching/Removing the device to/from its bracket will cause tamper transmissions. Verify log events or/and notification on your Application/control panel.

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FIGURE 1 – PAIRING & TEST BUTTONS

Pairing Button

Tamper Switch
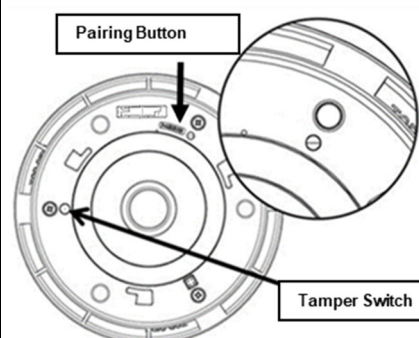
MOUNTING THE DETECTOR

1. Hold the mounting bracket against the ceiling and mark the center of each slot.
   Drill 2 holes and install the bracket with the screws (see Figure 3-A).
2. Verify the Smoke detector is paired to the control panel by pressing the TEST button (see below Figure) and verify receiving suitable message on the Application / Base.
3. Push the Smoke detector toward the bracket and turn it clockwise to adjust the detector to the bracket (see Figure 3-B).

TEST/MUTE BUTTON
Figure 2

MOUNTING THE DETECTOR – Figure 3

- Turn the detector clockwise till the click
- For gypsum ceiling use appropriate dibbles

A

B

REGULAR MAINTENANCE – CLEANING

Never use water, cleaners or solvents to clean your Smoke detector since they may damage the unit. Use a soft brush only.
Remove the device from its bracket (by turn it counterclockwise) and carefully remove any dust from the Smoke's openings around the device (see below Figure) at least once a year.

OPENINGS

LIMITATIONS OF SMOKE ALARMS

1. The fire systems help half of residents escape. Help to old people, women and children shall be given since they are always the victims.
2. Smoke alarms detectors 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 firefighting 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.

MUTING AN ALARM ON FW2-SMK

The sound alert of the FW2-SMK could be muted for five minutes. After five minutes, if the FW2-SMK continues to detect smoke, the alarm resumes.

To mute the alarm, press the TEST/MUTE button

REGULATORY APPROVALS

The FW2-SMK conforms to the essential requirements set out by:

- EMC directive:1999/05/EC
- LVD directive: 2014/35/EU
- RoHS2 directive: 2011/65/EU

Harmonized Standards applicable to these products are:

- EN 301 489-3: V2.1.1
- EN 301 489-1: V2.1.1
- EN 300 220-2: V3.1.1
- EN 60950-1:2006 / A11(09) / A1(10) / A12(11) / A2(13)
- IEC 60950-1:2005/A1(09)/A2(13)
- EN 14604:2005/A1(08)
- EN 62368-1:2014+A11:2017
- IEC 62368-1:2014

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RoHS

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DOP No: CPR-DOP-001
EN14604:2005

TECHNICAL SPECIFICATIONS

Detection Method	Photoelectric smoke chamber
RF Protocol	FREEWAVE2™ two-way ISM
Modulation Type	GFSK with 5 frequencies & LBT
Available Frequencies	868 MHz or 916MHz
Events Transmission	Alarm, Tamper, Keep Alive, Batery status
Detection Sensitivity:	0.1 ± 0.02 dB/m
Alarm Sound Level:	≥85 db at 3 m
Range in open space	>500m
Batteries	Pack of 2 Lithium 1.5V, Size: AA
Batteries Model	Energizer L91
Battery life	≥ 10 years

Current Consumptions:

Standby	5μA (Keep Alive every 7min)
Alarm	400mA
Low Battery	2.9VDC
Cut Off Battery	2.5VDC
Transmit Power	up to 14 dBm
Tamper Switch	Bracket removal
Operating temperature	-10°C to +55°C
Dimensions	125mm diameter x 38mm deep
Weight (incl. batteries)	235 gr.

⚠ WARNING ⚠

1. 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 button accurately tests all detector functions. This is the only correct way to test the unit.
2. 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.
3. Do not stand close to the detector when the alarm is sounding. The alarm is loud in order to wake you up in an emergency. Too much exposure to the horn at close range may be harmful to your hearing.
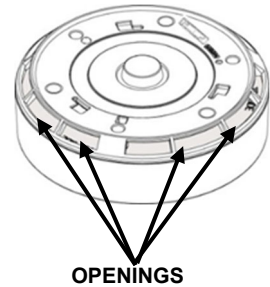4. Never try to avoid false alarms by disabling the detector.

⚠ WARNING ⚠

5. Dust can damage the smoke detector's sensitivity. The detector needs to be cleaned at least once a year as described in this manual.
6. 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.
7. 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 clear.

⚠ WARNING ⚠

8. 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.
9. This smoke detector, if used as a stand-alone unit, will not alert people who are hard of hearing.
10. Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Crow Electronic Engineering Ltd.) could void the user's authority to operate the equipment.
11. **Batteries of this device are not replaceable**. Recommanded date for device replacement ≥10 years from first operation date.

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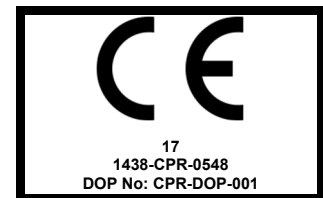
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These instructions supersede all previous issues in circulation prior to December 2018