

DECT ULE-SMK

WIRELESS SMOKE DETECTOR

CR-DU-SMK-EU
CR-DU-SMK-USA



ELECTRONIC ENGINEERING LTD.

INSTALLATION INSTRUCTIONS
P/N 7105106 REV. B (O.Z.)
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OPERATION

This DECT ULE Smoke detector transmits the following events data:

KEEP ALIVE – A periodical transmission (configurable) indicating detector's presence.

ALARM – Alarm transmission triggered by the device indicating Smoke detection. The Red LED will blink once.

LOW BAT – Whenever the battery reaches the low level (2.5V), a Battery Low signal will be sent. When Battery level drops below Cut Off level (2.3V) the device will stop functioning and the Red LED will blink for 10 seconds and then turned Off.

TAMPER – Whenever the cover is removed from Bracket or the device is tear off from the ceiling, a message will be transmitted with "Tamper ON" signal. When the device will be returned to its place a "Tamper OFF" signal will be transmitted.

INSTALLING IN MOBILE HOMES & 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.

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; 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.
- 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.

INTRODUCTION

This DECT ULE Smoke detector is an advanced, fully supervised low-current wireless detector that includes a DECT ULE transceiver for reliable system operation.

This DECT ULE Smoke detector includes special ME structure for best smoke detection performances.

This DECT ULE Smoke detector uses smart message control, which verifies that all messages are successfully transmitted, so that no smoke or any other event will be uninformed to the base.

This DECT ULE Smoke detector includes series of messages for full communication administration (Keep Alive, Tamper Status, Battery Status, Alert, Configuration, etc.) as well as test transmission signals.

INSTALLATION LOCATIONS

Smoke detectors shall be installed in accordance with NFPA Standard 74. Here are few useful tips for complete coverage in residential units:

- 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 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 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.

INSTALLING IN MOBILE HOMES & RVs (Continue)

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".

WRONG INSTALLATION LOCATIONS (Continue)

- 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.
- In "Dead Air" spaces like 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 installing the 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.

FEATURES

- DECT ULE RF protocol.
- Low current Technology.
- Powered by 3V Lithium battery.
- Battery life: >10 years.
- Audible Warning by a built-in horn beeps once Test mode or Alarm.
- Frequency Band: All DECT Standard Bands.
- Tamper Open/Close transmission.
- Keep Alive transmission.
- Battery status transmission.
- Bi-Color LED indications for monitoring & Pairing.
- Range up to 500m on open space.
- Remotely configurable.
- Do-It-Yourself - Friendly Pairing and Installation processes.
- Software Update Over the Air.

INSTALLATION LOCATIONS (Continue)

- 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, family, 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, the wall-mounted detectors shall be installed between 10cm to 15cm (4 - 6 inches) from the ceiling.
- If some of your rooms have sloped, peaked, or gabled ceilings, try to mount detectors 0.9 m (3feet) measured horizontally from the highest point of the ceiling.

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 m (20 feet) away from places where combustion particles are normally present. If a 6 m (20 feet) 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.

TESTING THE DEVICE

Press the Pairing button shortly to connect the Battery power to its circuit – validate the Red LEDs are blinking. This activity shall be done only once during the product life time.

Alarm test -

Press shortly the "Test" button (See Figure 4) - the smoke detector shall respond with "Bip-Bip-Bip" sound, indicating that the device is in the normal mode. If the test fails, stop using the detector immediately.

WARNING – DON'T TEST IT WITH FIRE !!!

Tamper transmission test –

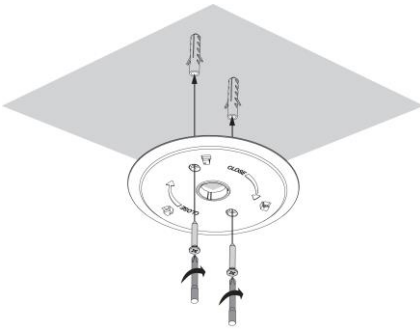
Attaching / Removing the device to / from its bracket will cause tamper transmissions. Verify receiving the indication on your Application / Base.

Identification transmission test –

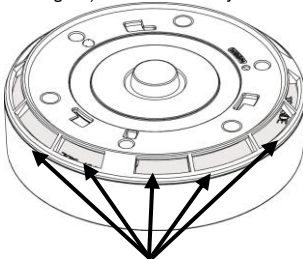
Use your Application / Base to send Identification Request to the Smoke. The Smoke will blinking the Green & Red LEDs alternately – 5 times.

PAIRING PROCESS

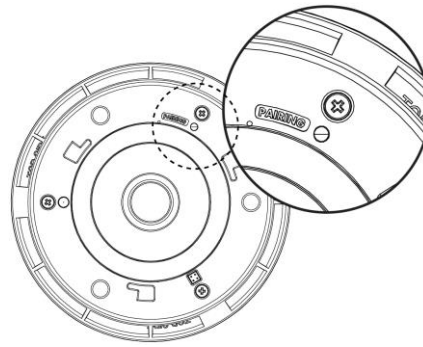
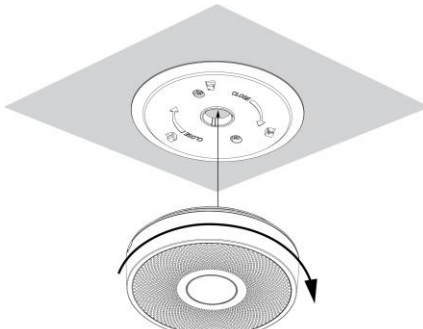
1. Separate the Smoke from its bracket by rotating the device counterclockwise.
2. If not done it before, shortly press the Pairing button to connect the Battery power to the circuit – this activity shall be done in a product life time.
3. Wait until the Red LEDs stops blinking.
4. Initiate the Base Station pairing process.
5. Initiate the Smoke pairing process by pressing and holding the pairing button pressed for 5 seconds – the pairing button is shown in Figure 1. The Green LEDs will constantly turn On. When the Green LEDs starts blinking release the pairing button.
6. The device should register to the Base Station.
7. When registration process is successfully completed the Green LEDs will constantly light On for 3 seconds and then turn Off.
8. If registration process failed the Red LEDs will blink. wait for few seconds (~10sec) and repeat the pairing process from step 4 above.

FIGURE 2 – MOUNTING THE DETECTOR**REGULAR MAINTENANCE – CLEANING**

Never use water, cleaners or solvents to clean your smoke alarm since they may damage the unit. Use a soft brush only. Remove the Smoke 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****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.

FIGURE 1 – PAIRING BUTTON**FIGURE 3 – MOUNTING THE DETECTOR****LIMITATIONS OF SMOKE ALARMS**

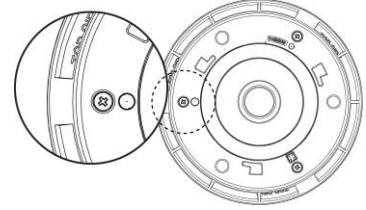
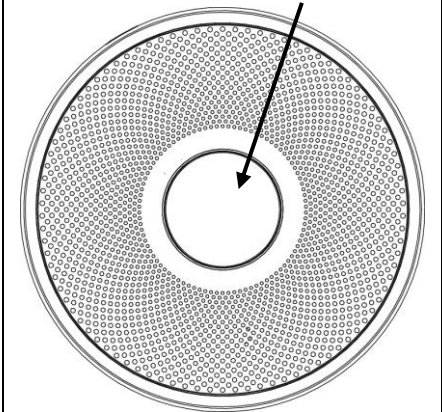
1. United States NFPA72 tells that the safety of life is to be noticed by alarms before fire, to confirm the correct escape way. The fire systems help half of residents escape and help to old people, women and children shall be given since they are always the victims.
2. Smoke alarms are not foolproof, they can't prevent or extinguish fires, and they are not a substitute for property or life insurance. You need buy some 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.

**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.

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 2.
2. Verify the Smoke detector is paired to the Base by pressing the Tamper button (see below Figure) and verify receiving suitable message in the Base.
3. Push the Smoke detector toward the bracket and turn it clockwise to adjust the detector to the bracket – see Figure 3.

**FIGURE 4 – THE TEST BUTTON****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 switch 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.

EMPTY

FCC & IC STATEMENT**Contain FCC ID: NFC-CRDU****Contain IC ID: 8164A-CRDU**

This device complies with FCC Rules Part 15 and with Industry Canada license-exempt RSS standard(s). Operation is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Canada: Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This device complies with Industry Canada licence-exempt RSS standard(s).

REGULATORY APPROVALS

This DECT ULE PIR detector conforms to the essential requirements set out by:

- RTTE directive: 1999/5/EC
- EMC directive: 2004/108/EC
- Low Voltage directive: 2006/95/EC
- RoHS directive: 2011/65/EU

Harmonized Standards applicable to this products are:

- EN14604,
- EN301406,
- EN301489-1,
- EN301489-3,
- EN50130,
- EN50371,
- EN61000-6-3,
- EN60950-1,
- UL217,
- ULC S531.

**CROW ELECTRONIC ENGINEERING LTD. ("Crow") - WARRANTY POLICY CERTIFICATE**

This Warranty Certificate is given in favor of the purchaser (hereunder the "Purchaser") purchasing the products directly from Crow or from its authorized distributor.

Crow warrants these products to be free from defects in materials and workmanship under normal use and service for a period of 24 months from the last day of the week and year whose numbers are printed on the printed circuit board inside these products (hereunder the "Warranty Period"). Subject to the provisions of this Warranty Certificate, during the Warranty Period, Crow undertakes, at its sole discretion and subject to Crow's procedures, as such procedures are from time to time, to repair or replace, free of charge for materials and/or labor, products proved to be defective in materials or workmanship under normal use and service. Repaired products shall be warranted for the remainder of the original Warranty Period. All transportation costs and in-transit risk of loss or damage related, directly or indirectly, to products returned to Crow for repair or replacement shall be borne solely by the Purchaser.

Crow's warranty under this Warranty Certificate does not cover products that is defective (or shall become defective) due to: (a) alteration of the products (or any part thereof) by anyone other than Crow; (b) accident, abuse, negligence, or improper maintenance; (c) failure caused by a product which Crow did not provide; (d) failure caused by software or hardware which Crow did not provide; (e) use or storage other than in accordance with Crow's specified operating and storage instructions.

There are no warranties, expressed or implied, of merchantability or fitness of the products for a particular purpose or otherwise, which extend beyond the description on the face hereof.

This limited Warranty Certificate is the Purchaser's sole and exclusive remedy against Crow and Crow's sole and exclusive liability toward the Purchaser in connection with the products, including without limitation - for defects or malfunctions of the products. This Warranty Certificate replaces all other warranties and liabilities, whether oral, written, (non-mandatory) statutory, contractual, in tort or otherwise.

In no case shall Crow be liable to anyone for any consequential or incidental damages (inclusive of loss of profit, and whether occasioned by negligence of the Crow or any third party on its behalf) for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever. Crow does not represent that these products can not be compromised or circumvented; that these products will prevent any person injury or property loss or damage by burglary, robbery, fire or otherwise; or that these products will in all cases provide adequate warning or protection.

Purchaser understands that a properly installed and maintained product may in some cases reduce the risk of burglary, fire, robbery or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss or damage as a result.

Consequently, Crow shall have no liability for any personal injury; property damage or any other loss based on claim that these products failed to give any warning.

If Crow is held liable, whether directly or indirectly, for any loss or damage with regards to these products, regardless of cause or origin, Crow's maximum liability shall not in any case exceed the purchase price of these products, which shall be the complete and exclusive remedy against Crow.

FCC & IC STATEMENT (Continue)

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

TECHNICAL SPECIFICATIONS

RF Protocol	DECT ULE
Modulation Type	GFSK
Frequency	1880-1900 MHz - Europe 1920-1930 MHz - USA/Canada
Event Transmission	Alarm, Tamper, Keep Alive, Battery status.
Detection Sensitivity:	2.3+1.2%/ft
Alarm Sound Level:	85 db at 3 m (10 feet)
Range in open space	>500m
Battery	Pack of 2 Lithium 1.5V, Size: AA.
Battery life	>10 years
Current Consumptions:	
Standby	5µA
Average	15µA (1 Keep Alive per Hour)
Maximum (TX)	400mA
Low Battery	2.5VDC
Cut Off Battery	2.3VDC
Transmit Power (Typ.):	23dBm (EURO), 20dBm (USA)
Tamper Switch	Back Tamper
Operating temperature	-10°C to +55°C
Dimensions	125mm diameter x 37mm deep
Weight (inc. battery)	235 gr.

FCC & IC STATEMENT (Continue)

Note: The digital circuit of this device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: -Reorient or relocate the receiving antenna. -Increase the separation between the equipment and receiver. -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. -Consult the dealer or an experienced radio/TV technician for help.

WARNING!!!

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.

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