WIRELESS DETECTION INC.

APARTMENT
ALERT SYSTEM

FIRE
WARNING SYSTEM
USER GUIDE

MODEL FWS002

Preliminary Manual

Table of Contents

Important Safety Instructions

1) Read these instructions.
2) Keep these instructions.
3) Head all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean with only dry cloth.
7) Do not block any ventilation openings; install in accordance with the manufacturer instructions.
8) Do not install near any heat sources such as radiators, heat-registers, stoves or other apparatus that produce heat.
9) Do not install next to any windows.
10) Improper installation of this device, may affect the operation of the apparatus.
11) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as liquid ahs been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
12) There is no user serviceable part inside.
13) Use only the recommended batteries.

WARNING: This is not a Smoke Detector.
This device must be used in conjunction with a normal Smoke Detector.
Occupants of the dwelling will not be alerted.

FCC NOTE: (For U.S.A. and Canada)

1) Changes or modifications not expressly approved by Wireless Detection Inc. could void the user's authority to operate the equipment.

2) This product has been tested and complies with the specifications 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 to the instructions, may cause harmful interference to radio or television reception, which is found 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 or devices.
Connect the equipment to an outlet other than the receiver's.
Consult a dealer or an experienced radio/TV technician for assistance.

3) The antenna used for this device must be installed to provide a separation distance of at least 20cm
(8 inches) from all persons, and must not be co-located or operating in conjunction with any other antenna or transmitter other than those contained within this device.

NOTICE: This equipment complies with the FCC RF Exposure Limits. A minimum of 20 centimeters (8 inches) separation between the device and the user and all other persons should be maintained.

Operation

The FWS002 Wireless Fire Warning System is an advanced system. The smoke analyzer portion of this unit operates on the light scattering principle. A pulsed infrared light-emitting diode serves as a light source, and a high speed, low dark current photo-diode as the sensing element.
A logarithmic amplifier amplifies and signal conditions the signal for 8 bit A/D conversion. The 8-bit data is then captured and compared to a previously captured data to determine if; smoke is detected or the smoke chamber has degraded. With this process, as the smoke chamber degrades, the system is recalibrated, so that the sensitivity of the smoke detector is maintained. The smoke chamber self calibrates every 24 hours. The light-emitting diode is pulsed every 8 seconds, the smoke detector also performs temperature and battery level readings every 8 seconds; when smoke is detected or the temperature has reach a threshold of 114^{o}F (45.5^{o}C) then the light-emitting diode is then pulsed at a 2 second interval so that the increase in smoke intensity or the temperature rate of rise can be monitored at a faster interval. When smoke is detected or the temperature rate of rise, or the maximum temperature threshold of 135^{o}F (57.2^{o}F) has been exceeded, than the controller wakes up the transceiver to transmit the data.

When the transceiver wakes up, the transceiver gathers the programmed address information, system information, smoke intensity, temperature data and the checksum of this data and converts this to a 96 bit protocol for transmitting. With this unique 96 bit protocol the design has superior protection against false alarm caused by dust, insects, RF and ambient light.

Features

Photo-electric smoke detection system.
900 MHZ Spread Spectrum Transceiver Design.
62 channels of operation, gets the signal through.
96 bit protocol and checksum error detection eliminates false alarms due to radio interference.
Transceiver design, only transmits when required, Received acknowledge data, turns off the transmitter.
8 bit A/D conversion for processing smoke intensity, temperature and battery level.
Fixed and rate of rise temperature detection.
Tamper detection.
Complete Wireless operation.
Battery powered, up to 2 years of operation.
Removable smoke chamber.
Up to 22 Status reports per day.
Self calibrating for best system performance.
Performs a self diagnostic test with each status report.
User addressable; easy set up procedures.
CW test mode; for analyzing the placement of repeaters.

Setting up the Fire Warning System

Putting the Batteries in the Fire Warning System

1) Remove the Battery tray by pressing both tabs on each side of the tray and sliding the tray from the Fire Warning System.
2) Insert 4 AA type Alkaline Batteries into the tray, following the indications (+, -).
3) Insert the tray into the Fire Warning System until both tabs lock into place.

NOTE: ***Incorrect use of batteries can result in hazards such as leakage and bursting.***
Please observe the following:
Don't mix new and old batteries together.
Don't use different kinds of battery together.
Although they may look similar, different batteries have different voltages.
Make sure that the plus and minus ends of each battery match the indications in the battery compartment.
When disposing of used batteries, please comply with governmental regulations or environmental bylaws that apply in your country or area.

Programming the Apartment address in the Fire Warning System

1) Remove the programming access port.
2) Insert programming plug into the programming receptacle JP4.
3) Program the device with the desired address.

   Note: Instructions for programming are in the APARTMENT ALERT PROGRAMMER MANUAL.

Performing a self test

To perform a self test, push the test button and hold until the LED starts flashing. The test data is sent to the System Manager to be displayed on the monitor.

Putting the Fire Warning System in CW mode for test

This Test mode is for setting up the proper placement of the System Repeater units.
Note: ***It is recommended to perform this test before the installation.***

1) Remove the programming access port.
2) Move the jumper to pins 1 and 2 of JP5. The unit is now in CW mode.
3) To exit CW mode, move the jumper to pins 2 and 3 of JP5. The unit is now ready for normal operation.

WARNING: ***After performing the CW test, the jumper must be place on pins 2 and 3 of JP5. Failure to do so; will cause catastrophic system failure.***

4) Replace the programming access port.

Installation Instructions

Where to place the Fire Warning System

In general ceiling mounted Fire Warning Systems should be located near the center of the room or hall whenever possible, or more the 100mm (4 inches) from any wall. When the detector is wall mounted, the top of the detector should be 100-300mm (4 to 12) inches from the ceiling (see diagram). Refer to NFPA 72 for further mounting instructions.

When more than one detector is required spacing of 9.1 meters (30 feet) may be used as a guide on smooth ceilings (as defined in NFPA 72). Other spacing may be used depending on ceiling height, high air movement, and other conditions or response requirements.

Note: ***The Fire Warning System must be installed to provide a separation distance of at least 20cm, (8 inches) from all persons. Changes or modifications not expressly approved by Wireless Detection Inc. could void the user's authority to operate the equipment.***

Where not to place the Fire Warning System

One of the major causes of nuisance alarms is improper placement of detectors. Avoid locating detectors too close to kitchens or wood stoves, where smoke can be generated. Garages and furnace rooms are also poor locations, due to exhaust fumes. Placing detectors too close to bathrooms can cause problems from steamy baths or showers. Also do not install detectors where normal ambient temperature can be over 37.8^{o}C (100^{o}F). Refer to NFPA for more information.

Installation

This is where the user instructions for mounting the Fire Warning System to the ceiling or wall is placed.

Note*: There is no user access for or user serviceable parts, for making adjustments to the power gain, antenna or operation of the transceiver. Changes or modifications not expressly approved by Wireless Detection Inc. could void the user's authority to operate the equipment.*

SPECIFICATIONS

General

Power requirements	6VDC (4) AA Alkaline Batteries
Battery life	approx. 2yrs. Depending on frequency of active alarms
Power consumption when transmitting	2.1W
Power consumption in standby	> 300uW
Weight	? lbs
Dimensions	?(W) x ?(H) x ?(D)
Operating temperature	32^{o}F to 120^{o}F (0^{o}C to 50^{o}C)
Operating Humidity Range	0 to 95% RH
Color	white cover/ white base Black smoke chamber
Heat Detector Specifications	Fixed temperature 135^F, 50ft. spacing 57.2^{o}C, 15.24 meters spacing rate of rise – 15^{o}F/min & > 114^{o}F 8.3^{o}C & > 45.5^{o}C
Status report interval	1 report every 30 min.

Transmitter specifications

Transmitter type	900MHZ. ISM FSSH
Operating band	902 to 928 MHZ
Channels	62
Modulation	FSK
Channel Bandwidth	118.2KHZ.
Transmitting power	1/2W

WARRANTY

This manual is complete except for detailed descriptions on how to physically mount the unit , any company logo’s to be included , warrant notices and liability disclaimers.

This manual is subject to change without notice.