WIRELESS HEAT FIRE DETECTOR

TYPE **VIT20**

INSTRUCTION MANUAL 06-VIT20-10-13

GENERAL DESCRIPTION

The fire detector provides a reliable early warning of a fire condition, responding to rate of rise of the temperature, or fixed temperature threshold detected in the protected premises. The temperature class (A1R and A2R) is programmable by the fire control panel VIT01 and they are in accordance with the European standard EN54-5.

The principal of functioning of its thermal part is based on the ohmic resistance alteration in the thermistors as a result of the ambient temperature change.

The fire detector consists of a printed circuit board and a thermo sensitive element (pos.4, fig.1), mounted into a plastic box (pos.5, fig.1). The fire detector is also equipped with a micro key(pos.7, fig.1), providing control over the removal of the detector from the base, main battery holder (pos.9, fig.1) and back-up battery holder(pos.8, fig.1). The two LED indicators (pos.3, fig.1), one of them two-color (red and green), and the other – one-color (red), allow 360° visibility and provide information about the operating modes of the detector:

- "Network Connection" Mode – Green LED, activated for 15 sec every 30 sec. The detector scans all the frequency channels. Upon registering a Control Panel or a Router, it submits a request for connection to the network – if the request is confirmed, it registers itself in the configuration of the Control Panel and switches to "Service" Mode. The fire detector may switch to the network connection mode in case of failed radio connection between it and the Router (The Control Panel);

- "Service" Mode – Green LED, flashing up with different frequency, proportional to the established quality of the connection with a Control Panel or Router. Upon reaching significant attenuation of the radio signal, the green LED changes to red flashing up LED. Lost connection with the Control Panel (Router) is indicated by continuous flashing of the red LED or all LEDs are OFF for more than 15 seconds. This mode checks the quality of the signal strength between the fire detector and the Router (the Control Panel). Communication is performed for a shorter period of time, as from the menu of the Control Panel can be adjusted and reviewed network and measurement parameters of each fire detector. The Mode is highly energy-intensive. If no additional adjustments are performed with the detector, it switches to "Duty" Mode after 1 minute;

- "Duty" Mode – LEDs are not illuminated. The fire detector periodically measures the ambient temperature and sends the status to the Control Panel. "Duty" Mode is the basic mode of the detector. Upon reaching a fixed threshold value of the temperature or rate of rise of temperature the detector switches to "Fire condition" Mode;

- "Fire condition" Mode – Both red LEDs are illuminated constantly. The fire detector remains in that condition until receiving a fire restart command from the Control Panel;

- "Fault condition" Mode – Green and red LEDs flashing up every 5 seconds. The fire detector may enter this Mode due to fault in the thermistor.

Note: The detector automatically saves the network address of the Router(or of the Control panel in case the detector is enrolled directly to it) during it communicates with the Control panel. If the Router missing, its position in the network is changed, or the quality of the connection is low , the communication from the detector to the control panel will be suspended. In such cases it is necessary to delete these network parameters for the previous "parent" in the network from the detector.

Sequence to erase the old parameters for the "parent" :

1. Wait the finishing of mode "Network connection" - Green LED is permanently off;
2. Hold the tamper and wait for confirmation from LEDs - two-color LED - green and red lights simultaneously for half a second. (If the LED not lit - detector doesn't have saved parameters and will record them as soon as a connection with a Router or Control panel is established.
3. Release tamper and wait for confirmation from LEDs - two-color LED - green and red lights simultaneously for half a second.
4. Repeat steps 2 and 3 consecutively five times. In case of successful completion of the operation, the two red LEDs flash simultaneously - the detector parameters for its previous "parent" are deleted and when the next activation of mode "Network connection" is presented, the detector will search for a new Router or Control panel with the best radio quality connection.

TECHNICAL DATA

Supply voltage	(3.2-3.6)V DC
Back-up power supply voltage	(3.0-3.2)V DC
Current consumption in transmitting	45 mA
Current consumption in receiving	55 mA
Average consumption in "Duty" Mode	80 µA
Response time	30 sec.
Temperature class	programmable P – A1R or A2R in compliance with EN54-5:2000
Protected area	circle with diameter up to 8 m
Height of mounting	up to 3.5 m (according to EN54)
Degree of protection	IP40
Operating temperature range	minus 10°C up to 55°C
Relative humidity resistance (no condensation)	≤95%
Overall dimensions, including the base	Ø 100 mm, h 47 mm
Weight, including the base and the battery	0.125 kg

MOUNTING AND PUT INTO OPERATION

1. Manufacturer recommendations

1.1 Fire detectors of this series should not be installed in locations distant by more than one barrier (wall) from the Control Panel or Router. Exceptions to this rule are allowed in operating efficiency approved by the installers.

1.2. Fire detectors of this series must be powered only with batteries, provided by the manufacturer of the system – 3.6V (Li-SOCl2) with a nominal capacity of 2600mA/h or equivalent. This guarantees the efficiency of the battery supply in "Duty" Mode for a period of at least 3 years according to the required standard EN 54-25.

1.3. Detector is equipped with a back-up battery, which provides autonomous operation of the detector for a period of seven days in case of fault in the main battery. Access to the battery is done by removing the bottom side of the detector.

1.4. In premises, where other devices operating in the frequency range of 2.4GHz is necessary to scan, detect and change the channel of operation of these devices. This ensures that the wireless Fire Alarm system will occupy a channel that will be shared only by its devices.

2. Evaluation of the signal strength

Before proceeding to installation, the place chosen by the installer needs to be carefully evaluated for the signal strength, where the detector will be mounted. This evaluation must be done for each radio-component of the Fire Alarm System. This evaluation must be performed to an established already "Mainstay" of the Wireless Fire Alarm System. The "Mainstay" of the Wireless Fire Alarm System is build by Control panel VIT01 and Routers VIT02.

Evaluation of the signal strength of wireless fire detectors shall be performed as follows:

2.1. Provide a Control Panel VIT01 or a router VIT02, connected to Control Panel VIT01, set into Mode "Registration" (See Instruction Manual VIT01).

2.2. From the Control panel enter menu "Setup/Registration/Auto registration" of panel (see Instruction manual VIT01).

2.3. The detector is activated when the battery is put inside the detector (remove the isolation sticker from plus of the battery). It have to be wait while the signal is registred from the panel.

2.4. Next step is evaluation of the signal strenght in "Service" mode of detector where (the place) will be mounted without final mounting.The levels of the radio signal should be higher than 40-50% in both directions. Otherwise the main battery will be discharged faster. This values should be recorded for future reference.

2.5. To switch on the back up battery - remove isolation sticker.

3. Installation

Fire detectors of series VIT are to be used with base type FD100 (pos.2, fig.1).

In installation of the detector and the base observe the following sequence:

3.1. Fix the base to the ceiling of the protected premise by means of dowels and screws, observing the place, chosen in compliance with the work project and the evaluation of the strength signal.

3.2. Place the detector on the base and rotate it clockwise to matching benchmarks.

3.3. From the Control Panel in menu "Setup/Registration/Auto(Manual) registration/Devices/Change mode" change the Mode of the fire detector into "Duty" Mode (See Instruction Manual of VIT 01).

TESTING

The fire detector has to be tested after installation as part of the Fire Alarm System or after service schedule in the following sequence:

1. Check the supply voltage of the detector from the menu of the Control Panel. The supply voltage value is defined in chapter "Technical Data" of the Instruction Manual herein.

2. Set the fire detector into "Duty" Mode, and its zone into "Test" Mode and from 20cm distance influence on the detector by means of a heat tester for testing the thermal part. For a period of time, not more than 20s after the influence, the detector should enter "Fire Condition" and LEDs on detector's body (pos.3, fig.1) will illuminate. The current temperature, the radio signal quality and the status of the detector can be monitored from the menu of the Fire Control Panel.

3.The panel automaticly sends command for resetting after 1min. After receiving the command the detector enters "Duty" Mode. LEDs on the detector's body (pos.3, fig.1) must turn OFF.

4. Switch back the zone from test to duty mode from the menu of the Control Panel.

SERVICE SCHEDULE

It is to be performed by an authorized person and includes:

1. Inspection for visible physical damages	– monthly;
2. Satisfactory operation test for fire detection in real conditions	– monthly;
3. Check and clean dust contamination	– every six months.

WARRANTY OBLIGATIONS

The warranty period is 36 months from the date of the purchase.

The manufacturer guarantees the normal operation of the product, providing that the requirements set at the Instruction Manual herein have been observed. The manufacturer does not bear warranty liabilities for damages caused through accidental mechanical damage, misuse, adaptation of modification after production. The manufacturer bears warranty liabilities of the product caused through manufacturer's fault only.

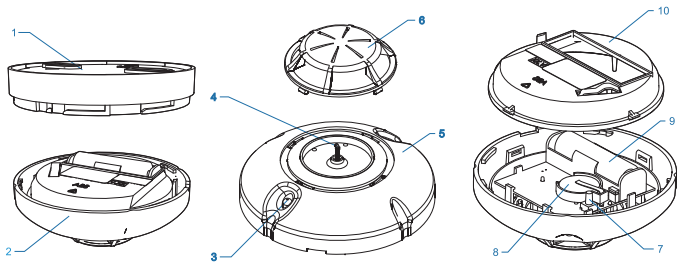

Fig.1

Manufacturer: UniPOS Ltd. 47 San Stefano Street, Pleven 5800, R. Bulgaria, http://www.unipos-bg.com