



# WIRELESS OPTICAL-SMOKE FIRE DETECTOR

TYPE VIT30

INSTRUCTION MANUAL 04-VIT30-10-12

## GENERAL DESCRIPTION

The fire detector provides a reliable early warning of a Fire condition responding to fixed threshold smoke concentration detected in the protected premises. The smoke sensitivity (low, middle or high) is in compliance with the European Standard EN54-7 and it is programmed by the fire control panel VIT01. The fire detector operates with an improved algorithm for self-compensation of the optic chamber contamination, signaling the necessity for dusting the chamber. The construction of the optic chamber and the new technology used in the manufacturing of the screen provides high level protection against entering dust particles and insects and working under strong airflow.

The principal, of the optical chamber operation, is based on the dispersion of infrared rays from the smoke particles, trapped in the optical chamber. Communication between the VIT30 and the other VIT components is based on high frequency radio emissions.

The fire detector consists of a printed board and an optical chamber (pos.6, fig.1), mounted into a plastic box (pos.5, fig.1). The fire detector is also equipped with micro key providing control over the removal of the detector from the base and the battery holder. The two LED indicators (pos.3, fig.1), one of them is 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 – single 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 is registered 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 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 and green LEDs or all LEDs are off for more than 15 seconds. "Service" mode checks the quality of the signal strength between the fire detector and the Router (the Control Panel). From the menu of the Control Panel can be adjusted and reviewed the network and the detection parameters of each optical-smoke 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 dust concentration and sends the status to the Control Panel. "Duty" Mode is the basic mode of the detector. Upon detection of a rapid increase of smoke concentration at the protected area or slow spreading fire, the detector switches to "Fire condition" Mode;

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

- "Fault condition" Mode – Green and red LEDs flashing up every 5 seconds. In this Mode the detector can reach maximum level of compensation of the background level, according to EN54-7, due to contamination of the chamber. The detector keeps the possibility of detection, but needs cleaning.

## TECHNICAL DATA

Supply voltage	(3.2-3.6)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.
Sensitivity	average (middle) or 20% higher (high) (according to EN 54-7) or 20% lower (low)
Protected area	circle with diameter up to 15 m
Height for installation	up to 3.5 m (in compliance with EN54)
Degree of protection	IP40
Operating temperature range	minus 10°C up to 60°C
Relative humidity resistance (no condensation)	≤95%
Overall dimensions including the base	Ø 106 mm, h 55 mm
Weight of the detector including the base and the battery	0.150 kg

## MOUNTING AND PUT IN TO 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 the Router. Exceptions to this rule are permitted in operating efficiency approved by the installers.

**1.2.** Fire detectors of this series must be charged only with batteries, provided by the manufacturer of the system – 3.6V (Li-SOCI2) with a nominal capacity of 2600mAh. 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.** In premises, where there is other devices operating in the frequency range of 2.4GHz, it is necessary to scan and detect the channel of operation of these devices. This ensures that the Fire Alarm system we use 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 a Control panel VIT 01 and Routers VIT 02.

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. Enter in menu "Setup/Registration/Auto registration" of panel (see Instruction manual VIT01).
- 2.3. The detector is activated when put on the battery inside the detector (remove the isolation sticker from plus of the battery). It have to be wait while the signal is registered from the panel.
- 2.4. Next step is evaluation of the signal strength in "Service" mode of detector where (the place) will be mounted without finally mounting.

## 3. Installation

Fire detectors of series VIT are to be used with base type FD100 (pos.1, 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 is to be tested after installation as a part of the Fire Alarm System of the premise 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 unit "Technical Data" of the Instruction Manual herein.
2. Set the fire detector into "Duty" Mode, and its zone into "Test" Mode and from 20 cm distance influence on the detector by means of a smoke tester. For a period of time, not more than 10 s after the influence the detector should enter "Fire Condition" and LEDs on detector's body (fig.1 pos.3) will illuminate. Smoke concentration, the connection quality and the status can be monitored from the menu of the Fire Control Panel.
3. The panel automatically gives a command to detector for resetting and he must enter "Duty" Mode up to 1 minute. 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.

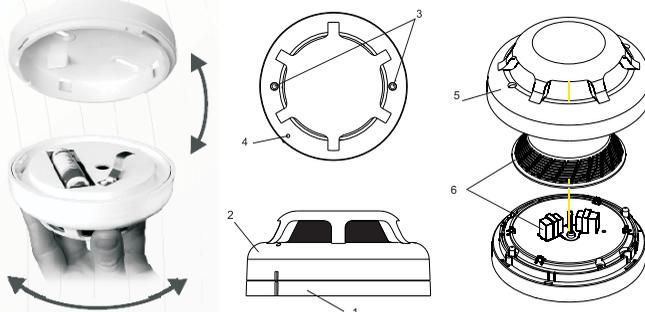


Fig.1