# VI-6847 Digital Fire Alarm Panel

## Installation and Operation Manual

## (Issue.1.09, Jul.2020)

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# CONTENTS

## Installation Precautions

**This equipment must only be installed and maintained by a suitably skilled and technically competent person.**

**THIS EQUIPMENT IS A PIECE OF CLASS 1 EQUIPMENT AND MUST BE EARTHED.**

Adherence to the following will aid in problem-free installation with long-term reliability:

- ✧ Do not attempt to install, service, or operate this unit until this manual is read and understood.
- ✧ This equipment must be installed in accordance with these instructions and the appropriate national, regional and local regulations specific to the country and location of the installation. Consult with the appropriate Authority Having Jurisdiction (AHJ) for confirmation of the requirements.
- ✧ Disconnect all sources of power before servicing. Control unit may be damaged and operator may be injured by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized.
- ✧ Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with batteries and printed circuit board location.
- ✧ VI-6847 Digital Fire Alarm Panel (VI-6847) shall only be installed and serviced by trained specialist

## Accessories coming with the unit

- ➢ Installation and Operation Manual
  Instruct how to install, commission and maintain the VI-6847.
  Note: The manual should be accessed by unauthorized people.
- ➢ Cabinet key
  Use to open and close the cabinet door of the VI-6847
- ➢ Control lock key
  Use to open and close Control Lock on the VI-6847
- ➢ Components box including
  1 wiring tube base for batteries （including cables and 1 5A fuse）
  1 terminals for batteries
  1 Zone Label

## Foreword EN54 Information

EN 54 √

✧ VI-6847 Digital Fire Alarm Panel complies with the requirements of EN 54-2 1997 + A1：2006 and EN 54-4 1997+A1：2002+A2：2006. In addition to the basic requirements of these standards, the panel conforms to the following optional requirements.

| Option | | EN 54-2 Clause |
|---|---|---|
| Indication | Fault monitoring of fire protection equipment | 7.10.4 |
| | Alarm Counter | 7.13 |
| Control | Delays to outputs | 7.11 |
| | Dependencies on more than one alarm signal(Type A) | 7.12.1 |
| | Dependencies on more than one alarm signal(Type B) | 7.12.2 |
| | Dependencies on more than one alarm signal(Type C) | 7.12.3 |
| | Disablement of each addressable points | 9.5 |
| Outputs | Output to Fire Alarm Devices | 7.8 |
| | Outputs to Fire Protection Equipment(Output Type A) | 7.10.1 |
| | Outputs to Fire Protection Equipment(Output Type B) | 7.10.2 |
| | Outputs to Fire Protection Equipment(Output Type C) | 7.10.3 |

EN 54 √ ✧ VI-6847 Digital Fire Alarm Panel complies with the following EN54-4 requirements.

| Power Supply Functions | EN 54-4 Clause |
|---|---|
| Power supply from the main power source | 5.1 |
| Power supply from the standby power source (batteries) | 5.2 |
| Charger | 5.3 |
| Faults | 5.4 |

## 1. Product Introduction

VI-6847 Digital Fire Alarm Panel (VI-6847) is designed to comply with EN 54-2 standard with qualities of simple installation, operation, and easy maintenance. It is used in fire alarm system with the following features:

✧ It controls at most 36 zones, each of which has its own alarm and fault/disable LEDs and a label. Every zone can be programmed to associate with fire alarm and fire suppression devices.

✧ The VI-6847 which can expand to Maximum 4 detection loops, each with up to 256 addressable devices. It is compatible with VSAIL Digital series addressable products, which are Digital Sounder Beacon (VI-6737) complying with EN 54-3, Digital heat detector (VI-6637) complying with EN 54-5,Digital smoke detector (VI-6627) complying with EN 54-7, Digital manual call point (VI-6657) complying with EN 54-11, Digital Control Module & Monitor Module (VI-6727, VI-6717) complying with EN54-18, and Digital isolator interface (VI-6777) complying with EN54-17.

✧ Full touch display 17in LCD can do any operation on the screen, assisting the 18 LEDs to display important information.

✧ 12 touch-sensitive buttons on the right of the front screen are usable when need some shortcut

operations.

- ✧ The memory does not lose data even if power supply is accidentally removed.
- ✧ Automatically prompting operation steps for every alarm device and for smoke exhaust and fire extinguisher by field programming.
- ✧ Two sounder output interface provides 800mA/24V output for each, compatible with VSAIL conventional sounder strobe (VC-6734) designed according to EN 54-3.
- ✧ Six programmable outputs is available by using Pro-I/O interface for remote control
- ✧ An additional NET card can enables networking through CAN interface.
- ✧ Normally Open Fire and Normally close Fault dry output contact.

# 2. Cabinet and Installation

## 2.1 Appearance


480mm×120mm×355mm (L×W×H)

# 3. External cables and Interfaces

## 3.1 Power Supply

### 3.1.1 Main Power

➢ **Parameters**

- ✧ Input voltage: 100~120VAC/200~240VAC
- ✧ Frequency: 50/60Hz
- ✧ Input Current : 1.7A@200~240VAC/3A100~120VAC
- ✧ It's recommended to use 1.5mm$^2$ or above screened cable complying with local installation codes.

### 3.1.2 Standby Batteries

➢ **Parameters**

- ✧ Type: Sealed lead acid batteries  two 7Ah/12V in series
- ✧ Recommended manufacturer and model: Yuasa  NP7-12
- ✧ Maximum Inner Resistance: 1Ω
- ✧ Minimum Operating Voltage: 21±0.5V
- ✧ Maximum Charge Current: 315mA
- ✧ Maximum Charge Voltage: 27.6V
- ✧ Maximum Operating Current: 2.5A

### 3.1.3 Output Current Load

- ✧ The normal current in full load condition is ≤5A
- ✧ The maximum output current in standby condition is ≤1.5A（Max. a as described in EN 54-4:1997 Clause 9.2.2 Table 1）.
- ✧ The maximum output current in alarm condition is ≤2.5A (Max. b as described in EN 54-4:1997 Clause 9.2.2 Table 1).

### 3.1.4 Detection Loop Parameters

- ✧ + Loop Out - : Loop signal outputting from the VI-6847, each loop shall connecting up to 256 addressable devices. The VI-6847 can expand to maximum 4 detection loop by adding "VI-6157 Digital Fire Alarm Control Panel Loop Card"
- ✧ + Loop In - : Receiving the signal cable which is send from corresponding "+ Loop Out - "when do ring connection in fire alarm detection loop (Note: If using VI-6777 Digital Isolate Interface in ring connection, detection Loop should be polarity, all the onset loop device should be connected to correct polarity)
- ✧ Loop Voltage: 18V~24V pulse
- ✧ Loop Current: 0mA~200mA
- ✧ Recommended Wiring (subject to local installation codes):
- ➢ Vencroft Gold and Platignum
- ➢ Nexans  NX 200 and 200 Plus (LPCB tested)
- ➢ Prysmian FP 200 and 200 Gold
- ➢ Draka Firetuf and Firetuf Plus

And all LPCB approved Fire cables

- ✧ It's recommended to use 1.5mm2 or above twisted-pair cable complying with local installation codes.
- ✧ Recommended Cable Length ≤1500m

### 3.1.5 Pro-I/O Parameters

#### 3.1.5.1 Parameters

- ✧ Connect terminal box at each Pro I/O interface, to realize remote programmable control
- ✧ Up to 6 terminal box can be connected on the Pro-I/O interface.
- ✧ Quiescent state：12V/8ma(For each Pro-I/O interface)
- ✧ Activate state: 28V/40ma(For each Pro-I/O interface)
- ✧ Terminal box relay contact capacity: 1A at 30VDC.
- ✧ Recommended Wiring (subject to local installation codes):

- ✧ Vencroft Gold and Platignum
- ✧ Nexans NX 200 and 200 Plus (LPCB tested)
- ✧ Prysmian FP 200 and 200 Gold
- ✧ Draka Firetuf and Firetuf Plus
- ✧ And all LPCB approved Fire cables
- ✧ It's recommended to use 1.5mm2 or above twisted-pair cable complying with local installation codes.
- ✧ Recommended Cable Length ≤1500m

### 3.1.6 OUTPUT TO SOUNDER (+, -)

➢ **Parameters**

Two sounder output interface on VI-6847, the parameter of each sounder output as follows

- ✧ Output Voltage: 22VDC~27.5VDC
- ✧ Output Current: 0mA~1000mA(for each)
- ✧ End of Line Resistor: 1.5KΩ

### 3.1.7 FAULT OUTPUT (NO, COM)

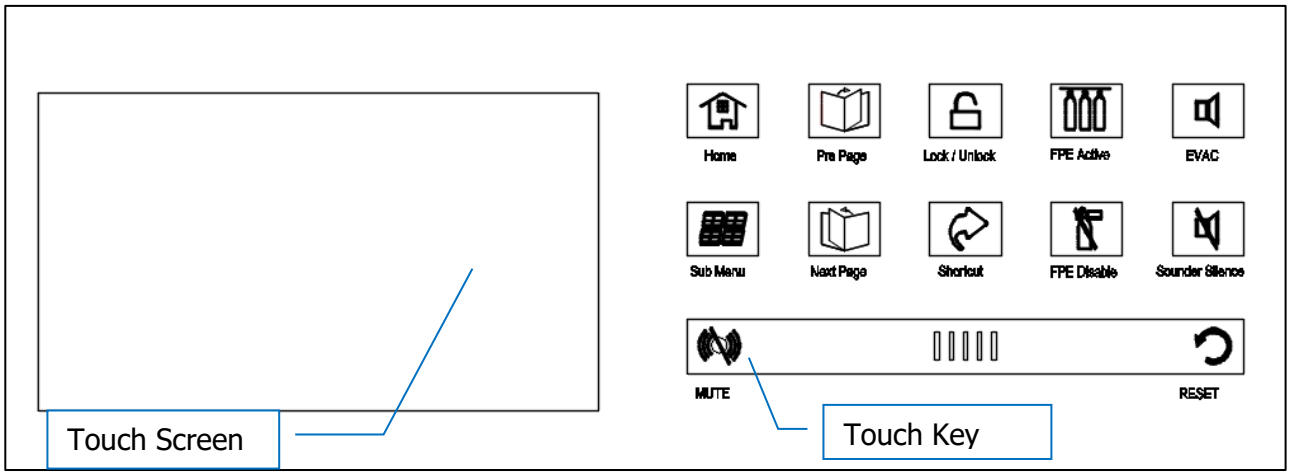
- ✧ Contact Capacity: 1A at 30VDC.
- ✧ Fault state, Fault NO and Fault COM close

### 3.1.8 Alarm OUTPUT (NO, COM)

- ✧ Contact Capacity: 1A at 30VDC.
- ✧ Alarm state, Fire NO and Fault COM close

# 4. Keys and Indicators

## 4.1 Operating Panel

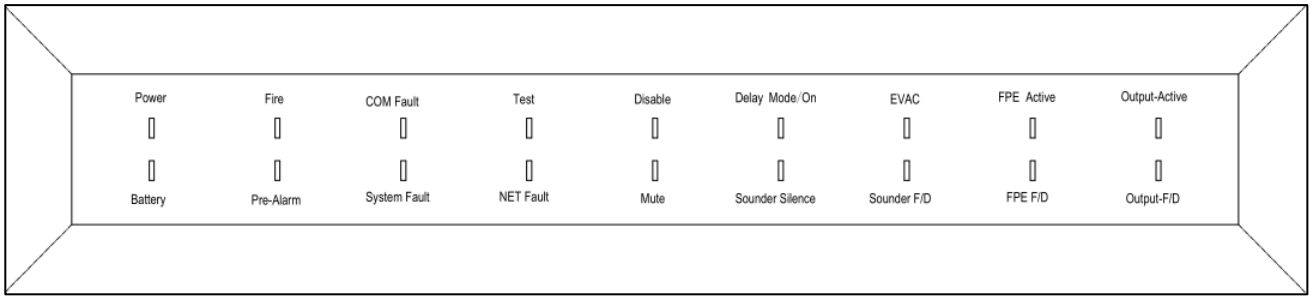



When do operation and setting on the touch screen, Touch keys are used for shortcut operations, here is touch key description in following table.

| No. | Key | Description | Remark |
|---|---|---|---|
| 1 | Home | Press once to go back to main menu any level of the menu | |
| 2 | Sub Menu | Press once to entering the sub menu of current menu | |
| 3 | Pre Page | Press each time to access per page on any information query menu | |
| 4 | Next Page | Press each time to access next page on any information query menu | |
| 5 | Lock/Unlock | Press each time to Lock or Unlock the main screen. The screen will display lock icon at the top right corner of the screen to indicate the main screen is in the locking state. | |
| 6 | Shortcut | Press once to open the shortcut menu | |
| 7 | FPE Active | FPE emergency start button，press once the panel will display access Level II password requirement menu, enter the password, then press "FPE Active" again the VI-6847 will activate the pre-sited fire protection equipment. | The FPE is connected to the terminal box and controlled through the VI-6847 Pro-I/O interface |
| 8 | FPE Disable | FPE emergency stop or disable button，press once the panel will display access Level II password requirement menu, enter the password, then press "FPE Disable" the VI-6847 will disable the pre-sited on set fire protection equipment. | 1.Disable when people do the maintenance for FPE<br>2.Disable the FPE in delay time when operator need to emergency stop the output to FPE |
| 9 | EVAC | Conventional sounder or alarm bell emergency start button，press once the panel will display access Level II password requirement menu, enter the password, then press "EVAC " the two sounder outputs of the VI-6847 will be activated at the same time. | |

| | | | |
|---|---|---|---|
| 10 | Sounder Silence | To silence quick stop all the sounders which connected on "sounder output" interface of VI-6847 panel. Press once the panel will display access Level II password requirement menu, enter the password, then press "Sounder Silence" again, all the conventional sounder will be silenced. | |
| 11 | Mute | Press once to silence VI-6847 build-in buzzer. | |
| 12 | Reset | Reset button, press "Reset" the panel will display access Level II password requirement menu, enter the password, then press "Reset" again the VI-6847 will reset immediately. | |

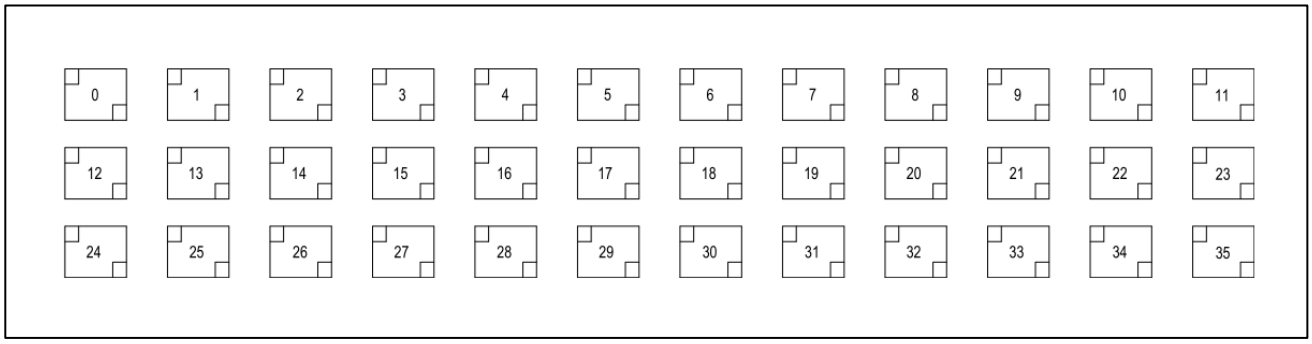
### 4.2 Indication Panel




- **Power:** Green. It illuminates when main or standby power is normal.
- **Battery:** Green. It illuminates when butteries in normal. And it flash when batteries in fault after the fault is cleared, it will illuminates sustaining again.
- **Fire:** Red. It illuminates when the VI-6847 detects an alarm condition of connected detectors. After fire alarm condition is removed, the fire status can only be cleared by pressing "RESET" key, and this LED goes out simultaneously.
- **Pre-Alarm:** Red. It illuminates when there is pre-alarm message and goes out when the pre-alarm is cleared.
- **COM Fault:** Yellow. It illuminates when the VI-6847 detects fault of connected devices or itself. It goes out automatically after the fault condition is removed.
- **System Fault:** Yellow. It illuminates if the program encounters a dead halt or PCB board is damaged, after the system fault is removed, only by powering down the VI-6847, can system fault be cleared, and this LED goes out.
- **Test Mode:** Yellow. It illuminates when the system is under test mode.
- **NET Fault:** Yellow. It illuminates when the VI-6847 detects fault from CAN communication itself. It goes out automatically after the fault condition is removed.
- **Disable:** Yellow. It illuminates when any of the loop devices, output to Pro-I/O (including FPE), and output to sounder is disabled. It goes out when such condition is cleared.
- **MUTE:** Yellow. It illuminates when the VI-6847 is silenced. It goes out only when new alarm comes.
- **Delay Mode/On:** Yellow. It illuminates when the FACP is in delay mode, and it flashing when delay mode is start to countdown.

- **EVAC:** Red. It illuminates after activate all sounder is activated.
- **Sounder Silence:** Yellow. It illuminates after "Sounder Silence" key is pressed to silence all sounder output.
- **Sounder F/D:** Yellow. It illuminates when conventional sounder is disabled. And it flashing when any fault occurred on Sounder output interface. It goes out when such condition is cleared.
- **FPE Active:** Red. It flashing when VI-6847 control panel is send activate signal to pre-set FPE Pro-I/O interface and it illuminates when VI-6847 control panel receive feedback signal from pre-set FPE Pro-I/O interface.
- **FPE F/D:** Yellow. It illuminates when FPE Pro-I/O is disabled. And it flashing when any fault occurred on FPE and Pro-I/O interface. It goes out when such condition is cleared.
- **Output Active**: Red. It flashing when VI-6847 control panel is send activate signal to pre-set output Pro-I/O interface and it illuminates when VI-6847 control panel receive feedback signal from pre-set Output Pro-I/O interface.
- **Output F/D:** Yellow. It illuminates when Pro-I/O is disabled. And it flashing when any fault occurred on Pro-I/O interface. It goes out when such condition is cleared.

### 4.3 Zone Indication Panel




VI-6847 comes with 36 zone in one zone indication panel. On the indication panel, each unit consists of two indicators. User can put the name of device on the right side of the control panel.

- **Fire LED:** Red (top left corner). It illuminates when a fire occurs in a zone. It goes out after the VI-6847 is reset.
- **Fault/Disable LED:** Yellow (bottom right corner). It flashes when there is any fault with the zone. If all detection devices in this zone have been disabled (Disable indication is preferential), the LED illuminates steadily. It goes out after the fault conditions are cleared.

## 5.Components

### 5.1 Standard Components

A standard VI-6847 consists of AC/DC Power supply, Power Board, Terminal Board, Loop Card, I/O Board, Main board, Control Board, Indication Board, and Zone Board

### 5.2 Options Components

WIFI Unit, extra Loop Card, Network card

## 5.3 Components description

- **AC/DC Power supply**

  Shift power from 220VAC (Factory setting) or 110VAC to 24VDC, then provide power to Power Board， The input voltage can be set between 230VAC and 115VAC by selecting the key on the side of the power supply. Please read the yellow warning label on the power supply shell then do the setting. When the power shifter display 230V means it can connect with 230VAC power, if it display 115V mean it can connect with 110VAC power supply.

- **Power Board**

  Do the power management to each board and batteries.

- **Terminal Board:**

  The terminal board is installed on the back of theVI-6847， which connects with NET card， I/O board ,loop card ,power board by plug-in slots ,and connect indication on front panel by cable. It also provides detection output and other input/output ports to on sit device.

- **Loop card**

  As the detection loop signal interface of the VI-6847, the loop card that connects field devices and the VI-6847 into a complete fire alarm system.

- **I/O Board**

  As the programmable control signal interface of the VI-6847, the I/O board that connects field devices and the VI-6847 into remote control system and implement linkage control when in fire alarm condition.

- **Main board**

  Main board is the core of theVI-6847, which contains CPU and interfaces to other main and optional components of the system.

- **WIFI Unit**

  To realize wireless connection with debugging tools through the WIFI units

- **Display and operation part**

  This part consists of Main board, Control Board, Indication panel and LCD. It is used to indicate and display different status of the system, and enables operations through touchable LCD, keypad (browsing, setting, etc.).

- **Zone indication**

  The zone indication panel can indicate fire alarm, fault/disable state of corresponding devices.

## 5.4 Periphery Devices

### 5.4.1 A Series of Digital Fire Detectors

VI-6847 can connect with a series of fire detectors, such as VI-6627 smoke detector, The detectors mounted in the protected area transmit monitoring message to the VI-6847 through detection loop. Every detector has its own address with which the VI-6847 can monitor the alarm, fault, and normal status of the detectors.

### 5.4.2 Modules

VI-6847 can connect with VI-6717 Addressable Input Module and VI-6727 Addressable I/O Module. VI-6717 input module is used for receiving normally open digital signal from fire protection device and

transmitting the signal back to the fire alarm control panel.

VI-6727 I/O Module is for connecting fire protection devices that need to be controlled by the VI-6847, such as smoke valve, fresh air valve, and damper valve. It can also receive feedback signal from these devices.

### 5.4.3 Loop Isolator

VI-6847 can connect with VI-6777 Loop Isolator, it can remove the shorted part of loop from the whole system to ensure normal operation of other devices and to ascertain the location of the part in fault. After the fault is repaired, the loop isolator can automatically reset the removed part into the system.

**Note:** It shall be polarity-sensitive when connect loop isolator, please reading the Isolator user manual carefully and be connected in correct polarity.

### 5.4.4 Manual Call Points

VI-6657 manual call point can be connected to the loop of VI-6847. When fire is confirmed manually, press the plate on the MCP, alarm signal can be sent to the VI-6847. After receiving the alarm signal, the VI-6847 will show the number and location of the MCP, and sound alarm.

### 5.4.5 Terminal Box

A terminal box shall connect to Pro-I/O interface of the FACP to activate on-sit device such as FPE, smoke valve, fresh air valve, and damper valve. It can also receive answer signal from these devices.

### 5.4.6 Sounder Strobes

VI-6737 Addressable sounder strobe is a kind of audible/ visual alarm device installed in the protected area, which can be activated by the VI-6847 at the fire control center. VI-6737 addressable sounder strobes can be connected to the loop of VI-6847. After activated, it will generate strong audible/ visual alarm signal.

### 5.4.6 Repeater Panel

VI-6762 Repeater Panel is designed with a microprocessor. When one or more detectors alarm fire, the repeater panel can display the location and alarm message of the detectors with audible and visual signals. Through communication loops, it can be connected with VI-6847, disposing and displaying the data from theVI-6847. When monitoring several floors or several zones with one fire alarm control panel, a repeater panel on each floor or in each zone can replace zonal fire alarm control panel.

### 5.4.7 Defining Tool

The android mobile app and debug tool are used for editing and downloading definition of device and logic equation. Before the system starts operation, we need to define the device and logic by using these software on a mobile phone or computer, and then uploaded them to the VI-6847.

## 6.Installation

The steps below are guidance for installation of the VI-6847 Fire alarm control panel.

1 Check if you have received all items ordered.

2 Install the cabinet.

3 Power up the VI-6847 and check if it can be normally started.

4 Connect peripheral devices.

5 Check the lines and register devices.

6 Define devices and C&E equations using VSAIL software on a PC or mobile phone and upload them to the VI-6847 according to engineering configuration.

7 Check and commission peripheral devices.

### 6.1 Component Inspection

Before installation, check the following items:

✧ **Check Engineering Requirement**

Check the packing list according to engineering requirement. The main items to be examined are: installation and operation manual, key to theVI-6847, and etc.

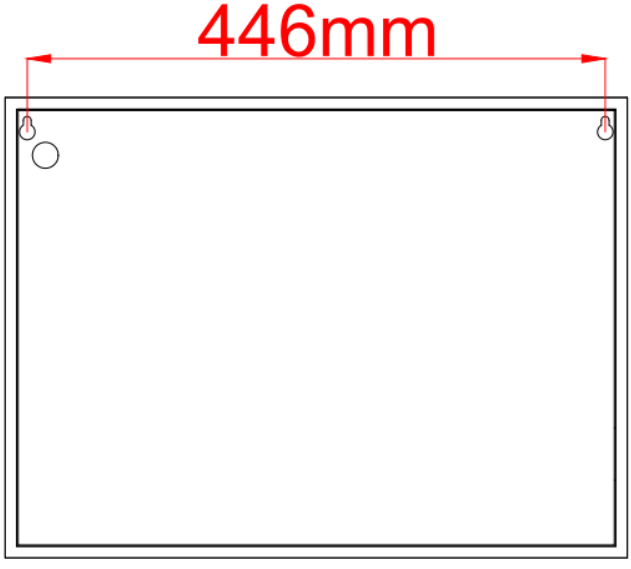
✧ **Check Internal Components and Interconnection inside the VI-6847**

All internal parts have been connected (including optional units ordered) before the VI-6847 leaves the factory. Therefore, you can mainly check the flex cable and correct input voltage display on the power supply shifter, and the connection among parts, including the connection between terminal board and power supply, indication board and terminal board, the connection of the zone board with indication board, etc. Please refer to "2.3 Internal Construction" for the internal connection diagram.

### 6.2 Cabinet Installation

VI-6847 is wall mounted. Dimensions of the cabinet are shown in following.

**Note: Position of knock out hole at top of the panel should be installed a cable plug to avoid abrasion and foreign objects.**




Mounting distance 446mm , Expansion bolt M5*50*2.

Ambient conditions for installation of the VI-6847:

Temperature: 0℃~+40℃

Relative humidity: ≤95%, non-condensing

Note: The knockout hole shall be fitted with cable junction to avoid abrasion of the cable or foreign matters entering the VI-6847.

### 6.3 Start-up Check

After installation, apply power to the VI-6847 as shown in Fig. Main Power Connection. Connect the battery plug onto the terminal board, and then turn on the mains switch in the cabinet and check if the VI-6847 can power on and self-test. The procedures are as follows.

- ✧ Check if the main screen showing system messages such as "System information:".
- ✧ Check if the LEDs showing the state of system can be illuminated one by one.
- ✧ Check if the LEDs showing the device state in zone indication panel are illuminated in turn.
- ✧ Check if the buzzer can give loud alarm sounds.

### 6.4 External Connection

#### 6.4.1 Mains Connection

- ✧ VI-6847 Digital Fire Alarm Panel receives power from a 220VAC，50Hz/60Hz supply(Factory setting).
- ✧ The incoming power feed cable Earth (Green/Yellow) wire should be connected to the earth terminal.
- ✧ Connect the live wire to terminal L and the neutral wire to terminal N.

**Note: Do not power the system until the installation is completed.**

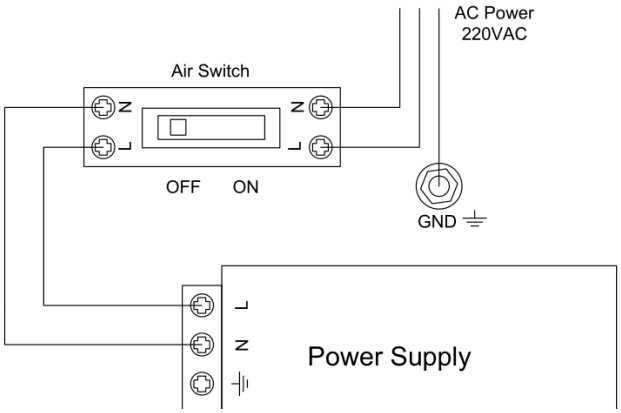



Fig. Main Power Connection

#### 6.4.2 Battery Connection

Connect the batteries according to Fig. Battery Connection and then connect with the battery terminal to the terminal board.

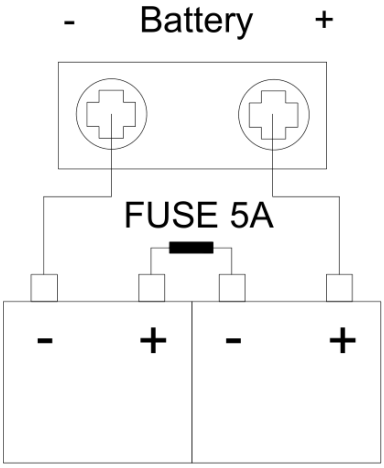



Fig. Battery Connection

**Note:**

- ✧ Do not make the final battery connections until the installation is complete.
- ✧ If the battery polarity is reversed, the panel shall not work when switch on the main power
- ✧ If short circuit battery, fuse will be blown.
- ✧ Recommended cables and length (complying with local codes)
- ➢ Vencroft Gold and Platignum
- ➢ Nexans NX 200 and 200 Plus (LPCB tested)
- ➢ Prysmian FP 200 and 200 Gold
- ➢ Draka Firetuf and Firetuf Plus

And all LPCB approved Fire cable

### 6.5 Field Device Connection

**Caution: Do not connect power to your device until you have completed all input and output connections. Failure to do so may result in injury!**

VI-6847 connects with field devices through terminal board.

Terminals on the terminal board are shown in Fig. Terminal Board.

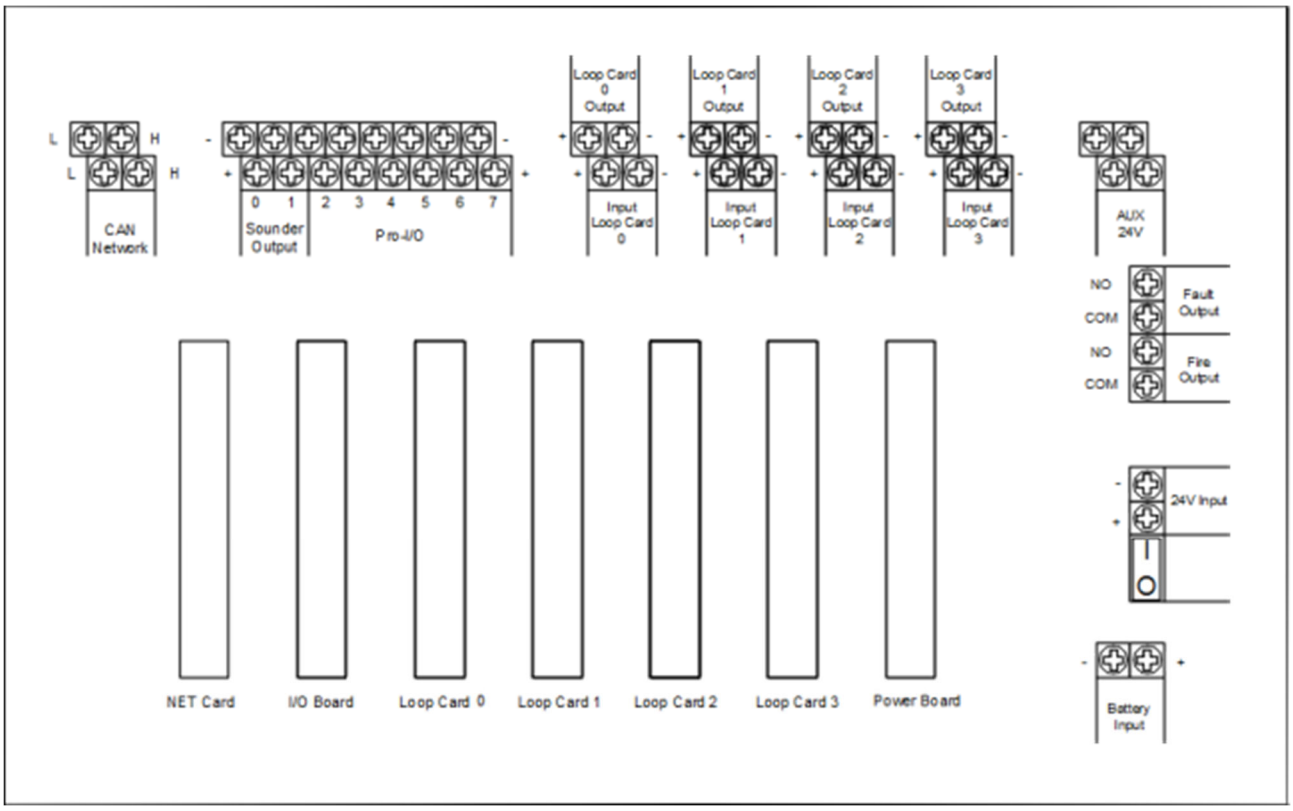



Fig. Terminal Board

Description:

- ✧ **LOOP0～LOOP3:** Each loop can have maximum 256 addressable devices. The VI-6847 can extend to maximum 4 loops. If loop isolators are connected into the each loop, the detectors protected by the isolators will not be lost in case of short or open circuit with the loop, and the VI-6847 reports loop fault. ***But it's worth noting that all loop device shall be polarity-sensitive and be connected in correct polarity and each loop isolator shall not cover more than 32 addressable device.***

- ✧ **Pro I/O OUTPUT:** It outputs according to settings in programmable output when there is fire alarm. It can be disabled, and does not output when fire alarm occurs in disabled state. It can be included into C&E equation. The VI-6847 reports fault when there is short or open circuit with connecting lines.

- ✧ **SOUNDER OUTPUT:** It outputs according to settings in Sounder output when there is fire alarm, which can be start by choosing EVAC key and also can be stopped by choosing Sounder Silence key. Output can be disabled, and there is no output in disabled state. It can be included into C&E equation. The VI-6847 will report fault when connected cable is in short or open circuit.

- ✧ **Fire OUTPUT:** Fire relay is open in normal condition, and it's connected in fault condition.

- ✧ **FAULT OUTPUT:** Fault relay is open in normal condition, and it's connected in fault condition.

### 6.5.1Connection of Sounder Output

Connection of Sounder Output port is shown in Fig. Connection of sounder output.

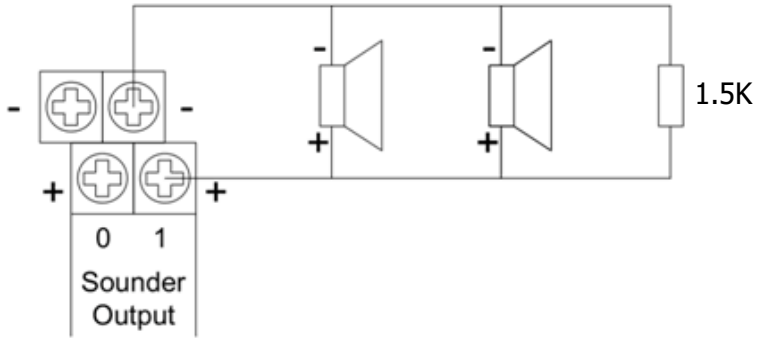



Fig.4-4. Connection of Sounder Output

Note:

- ✧ The sounder strobes are polarity-sensitive.
- ✧ Maximum 15 VC-6734 Conventional Sounder Strobe shall be connect into each Sounder output interface.
- ✧ Connect the loop in correct polarity and add the resistor 1.5K to the end of the line.

**NOTE:**

### 6.5.2 Connection of Pro-I/O Output

Connection of terminal is shown in Fig. Pro-I/O Output.

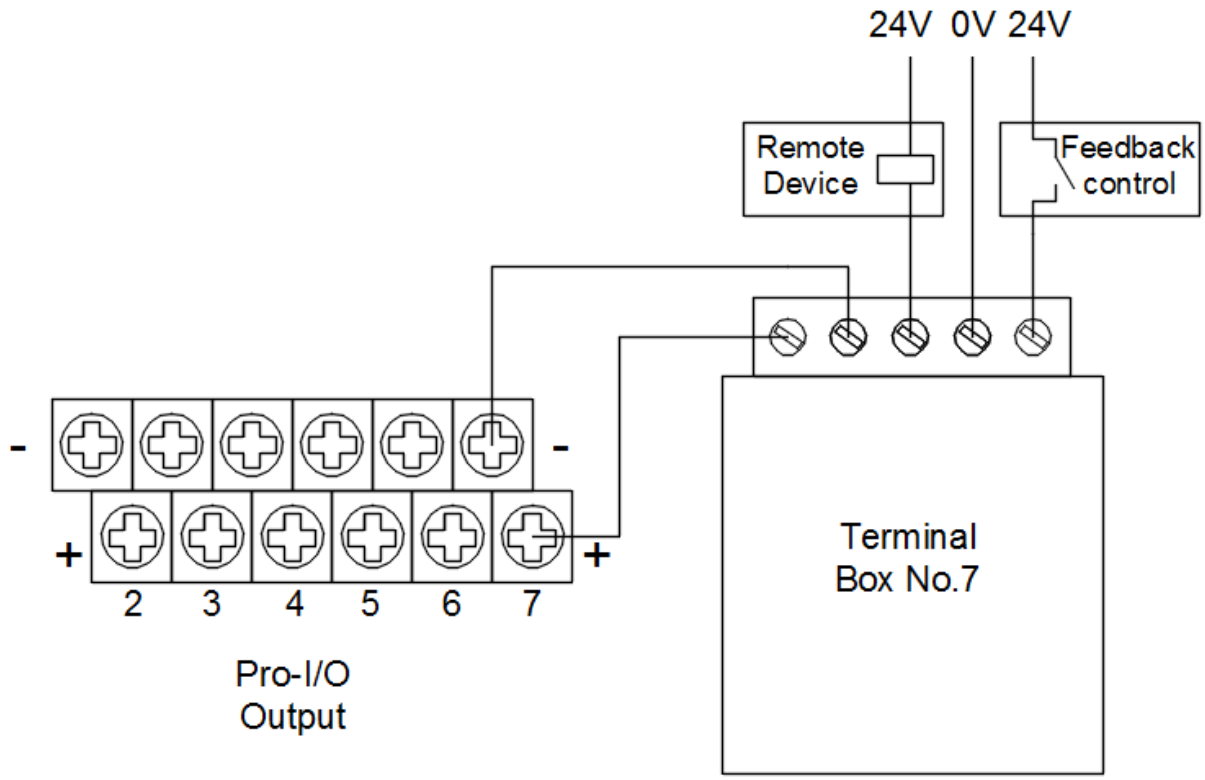



Fig. Pro-I/O Output

### 6.5.3 Connection Of Loop device

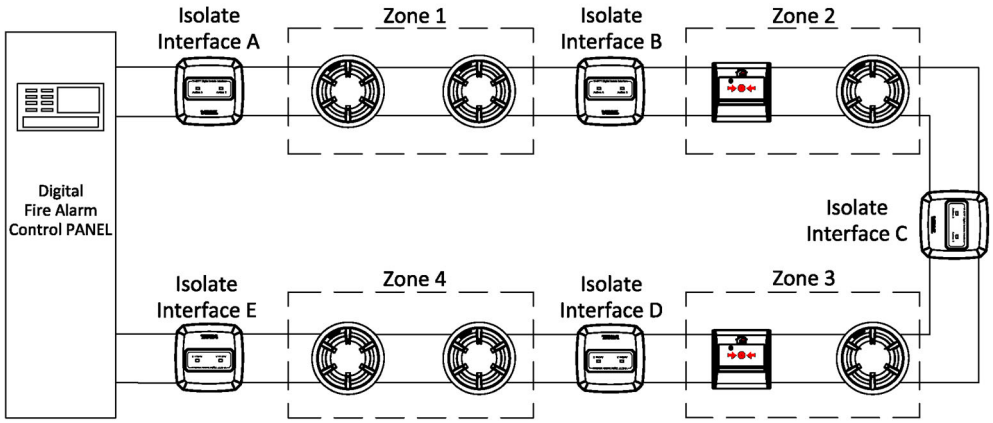



Fig. Loop device connection

Note: If more than 32 devices are connected to the loop, loop isolators shall be used and each loop isolator shall not cover more than 32 detectors.

## 7.Display and Disposal of System Information

VI-6847 Digital Fire Alarm Panel can be started after installation according to description in "6 Installation". Turn on the power supply, and main and standby power switch inside the control panel, the control panel executes self-test and enter normal standby state. The main screen is touchable screen, operation and adjustment can be achieved via touching the screen. The system will display properly if it is in normal state, otherwise it will display abnormal information.

### 7.1 Normal Information

The normal display is shown in Fig. 7-1, which means the system is running normally, and only *Power* and Battery LED lights. If the system is in Debug Mode, a "screwdriver & wrench" mark will be illuminate in green at the right top of the screen. In normal state, this mark will display as portrait. Touch each key on the main screen can do the operation and setting on the panel, Manual button shows the fire alarm system is in the manual mode, all the output device and alarm device will outputs by manual control. Enter the access level II can shift between Manual and Auto mode by pressing this key. In auto mode the whole system will outputs automatically according to the preset logic.

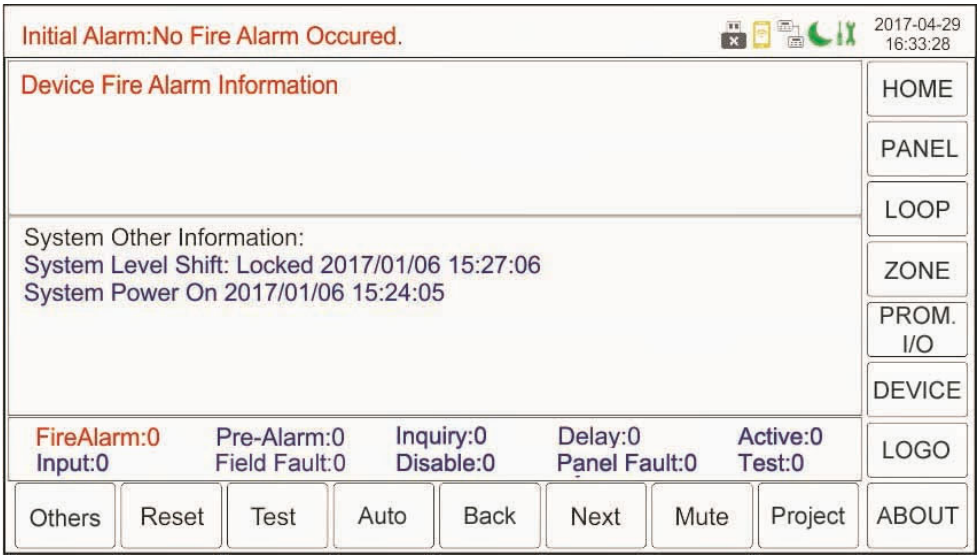



Fig. 7-1

Fig. 7-2 shows the system is in normal standby state but with disabled device. In this case, the control panel works normally, but corresponding LEDs on the front panel illuminate. We can preview the most recently disable information at "System Other Information" , touch the "Disable:1" to browsing more disabled device information.

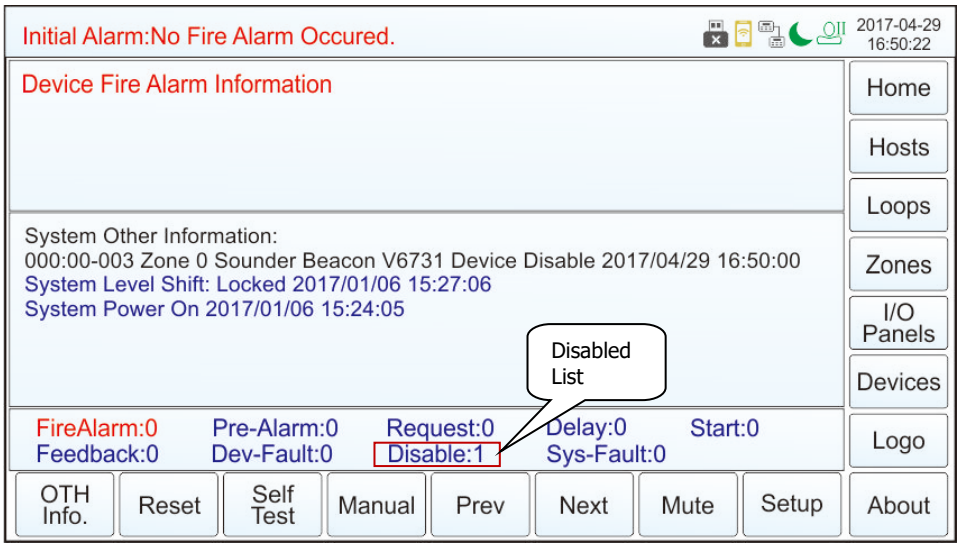



Fig. 7-2

## 7.2 Fire Alarm

### 7.2.1 Fire Alarm Indication

*Fire* LED is lit when there is fire alarm signal. The buzzer of the control panel sounds, and corresponding fire LED on the zone indication panel is also lit. The FACP will first display fire message by zone. Pressing a "Prev" or "Next" key on bottom of the main screen can browsing all fire alarm information one by one in "Device Fire Alarm Information" screen. And touch *"Fire Alarm: 2"* can view the all the alarming devices in list.

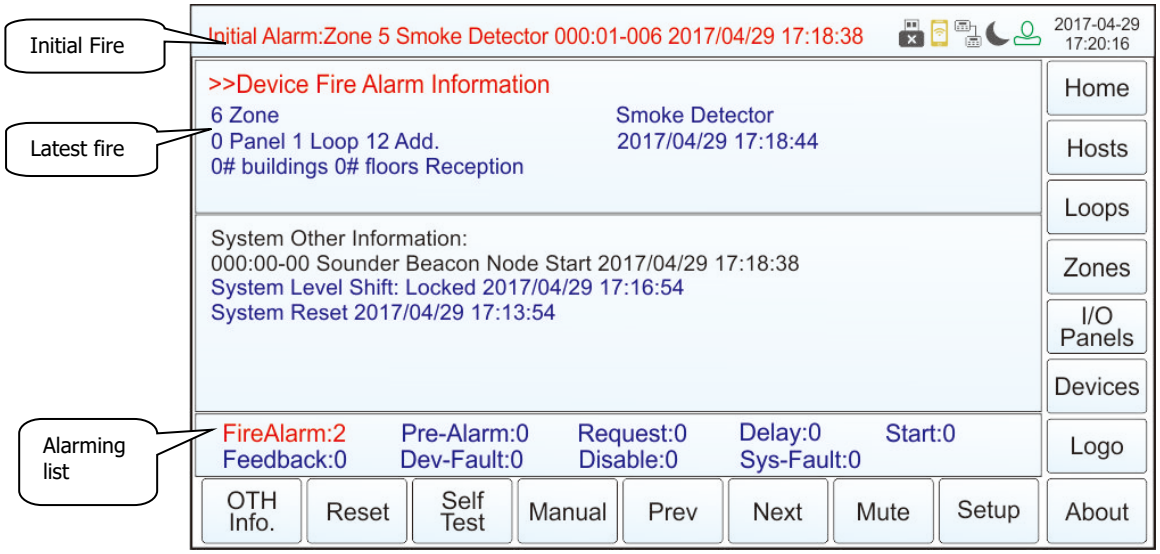



Fig. 7-3

### 7.2.2 Disposal of Fire Alarm Signal

When fire alarm occurs, please first find out the location according to the information shown on the main screen to verify whether the fire really happened.

If it's a real fire, please take corresponding measures as outlined below.

**Step 1:** Press Confirm key to acknowledge the fire alarm (If in Dependency mode).

**Step 2:** Press *EVAC* or *F1* and *F2* to evacuate the people in field.

**Step 3:** Call the fire department.

**Step 4:** Activate extinguishers.

If it is a false alarm, please take the following measures.

**Step 1:** Press "*mute"* to stop the sound.

**Step 2:** Remove the causes of the false alarm.

**Step 3:** Press "*RESET"* to make the control panel back to the normal state. If the device still gives false alarm, disable it and inform the installer or manufacturer for repair.

### 7.3 Pre-alarm

In case of a pre-alarm, the *Pre-Alarm* LED will illuminate, and the buzzer of the control panel will sound continuously.

#### 7.3.1 Display of Pre-alarm

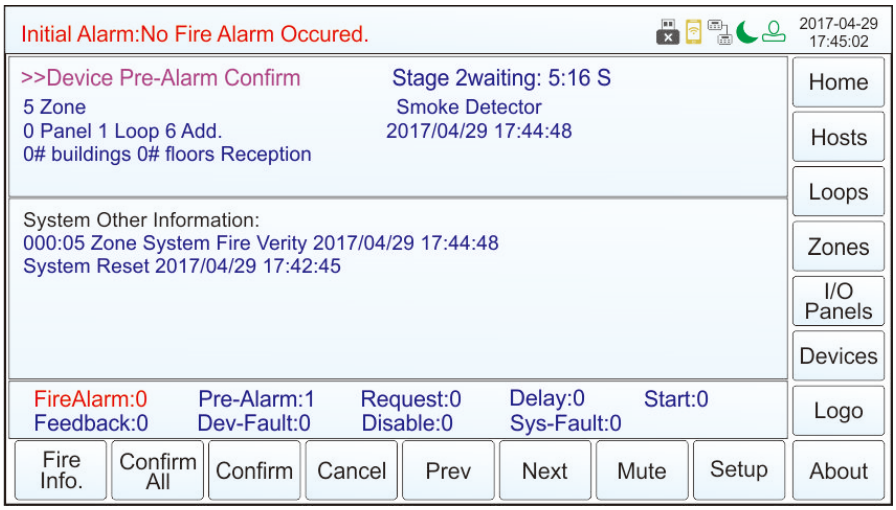



Fig. 7-4

#### 7.3.2 Disposal of Pre-alarm

The control panel provides three types of dependency on more than one alarm signal in zone setup. If a zone is set as Type A dependency, the alarm of a detector from this zone will be reported as a pre-alarm, and only when there is another detector from the same zone alarms, will the control panel report a fire alarm. If a zone is set as Type B dependency, the alarm of a detector from this zone will be reported as a pre-alarm, and when there is another detector alarm from any zone, the FACP will report a fire alarm. If a fire detection system receive a fire alarm signal from a fire detector or a manual call point, the control panel shall enter the fire alarm condition, but may have provision to inhibit the activation of outputs until a second alarm signal is received from another fire detector or manual call point, which may be in the same or another zone. Please refer to Section 6.3.1.2 for detailed setup method.

In different working mode, the disposal of the pre-alarm signal will be different.

#### 7.3.3 Disposal of Pre-alarm Message in Night Mode

In night mode, the pre-alarm will be delayed for maximum 9 minutes. During the delay period,

✧ If the condition for dependency is not met, the pre-alarm will be automatically cancelled.
✧ If the condition is met, the pre-alarm will automatically change to a fire alarm.

#### 7.3.4 Disposal of Pre-alarm Message in Day Mode

In day mode, if a pre-alarm comes, the screen will display the delay time Stage 1 for acknowledgement of the pre-alarm. Pressing *Confirm All*, the VI-6847 will enter the delay time Stage 2 for verifying if it's a true fire alarm.

During the delay period,

✧ If the condition for dependency is met, the pre-alarm will automatically change to a fire alarm.
✧ If the condition is not met, the pre-alarm will automatically cancelled after the delay period expires.
✧ If *"Confirm"* key is pressed again or if the control panel receives new alarm signal (Type A from the same zone), the pre-alarm will also automatically change to a fire alarm.

### 7.3 Delay & Dependency Information

Delay

Press Host key at right of main screen and press Set up can view Delay and dependency information. We can browsing all delay information and dependency mode and Delay time at access level II.

Dependency mode:

Type A: Following the receipt of a first alarm signal from a fire detector, the panel will entry to the Pre-alarm condition and start to delay, Until receipt of a confirmation alarm signal from a fire detector in the same zone, or the delay counting ends, then the panel will goes into Fire alarm state.

Type B: Following the receipt of a first alarm signal from a fire detector, the panel will entry to the Pre-alarm condition and start to delay, Until receipt of a confirmation alarm signal from a fire detector in any zone, or the delay counting ends, then the panel will goes into Fire alarm state.

Type C: Following the receipt of a fire alarm signal from a fire detector or a manual call point, the VI-6847 control panel shall enter the fire alarm condition, but may have provision to inhibit the activation of outputs until a second alarm signal is received from another fire detector or manual call point, which may be in the same or another zone.

The dependency mode can be configurate at each zone in access level III.

### 7.5 Fault information

#### 7.5.1 Fault Indication

The indication of the fault message depends on the type of fault.

✧ Mains fault: If the mains supply is down, the panel will report main power fault, and
  - ➢ Light "COM *FAULT*" & "System Fault" LED.
  - ➢ "Power" LED lights out.
  - ➢ The LCD displays "Main Power Fault Arise".
  - ➢ The control panel generates fault sound.
  - ➢ Fault relay outputs.
✧ Battery fault: The panel will reports battery fault if the battery voltage is lower than 21VDC or the internal resistance is higher than 1 ohm, and:
  - ➢ Light "COM FAULT" & "System Fault" LED.
  - ➢ "Battery" LED lights out.
  - ➢ The LCD displays "BAT Voltage Fault Arise" or "BAT Res FAULT".

- The panel generates fault sound.
- Fault relay outputs.

✧ System fault: The panel will report system fault if its control CPU and circuit is in fault and the panel cannot work normally.

- It lights the "COM *FAULT*" & "System Fault" LED.
- The LCD display corresponding fault card information.
- The panel generates continuous fault sound.
- Fault relay outputs.
- After the fault is removed, the control panel has to be reset by rebooting.

✧ Field device fault: If there is trouble with one of the field devices, the panel reports fault with it, and

- The panel lights the "COM *FAULT*" LED.
- The corresponding LED on the zone indication panel flashes.
- The LCD displays the fault message
- The panel generates fault sound.
- Fault relay outputs.

### 7.5.2 Disposal of Fault Message

There are two kinds of fault message. One is system fault, like mains fault, battery fault, and PCB fault. The other is field device fault, like fault with detectors and modules etc.

✧ If the system is powered by battery for longer time than its capacity, the control panel will shut down to protect the battery. Please charge the battery in time to avoid any possible damage to it.

✧ If it is system fault, please check and repair in time. If the panel needs to be shut down, please make detailed notes.

✧ If it is field device fault, please repair it in time. You can disable it if the fault cannot be cleared for some reason, and enable it when the fault is removed.

## 7.6 Rules for Message Display

If there are multiple messages in the system, they will be displayed in a different area.

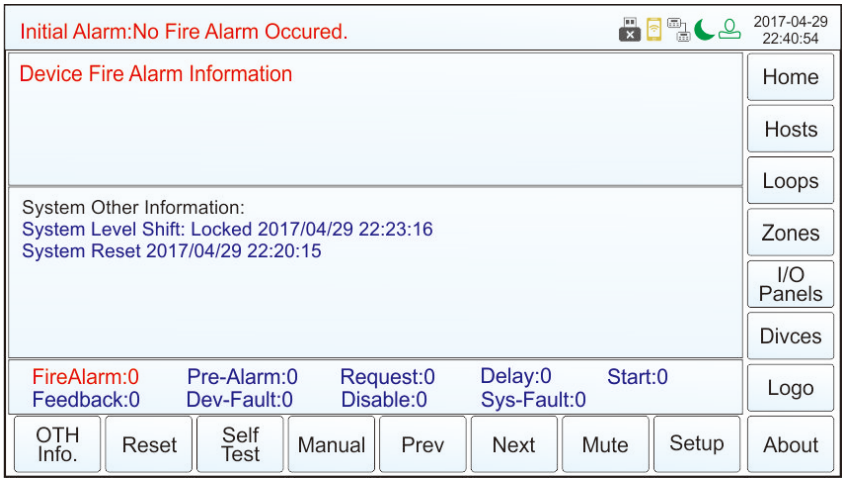



Fig. 7-5

✧ Initial alarm: It display the very initial alarm message in top of the screen and cannot be overwritten.

- ✧ Device Fire Alarm Information: It display the very latest fire alarm or pre-alarm information in this area. The overwritten information can be browsing by touching "Fire Alarm 0" or "Pre-Alarm:0"

- ✧ System Other Information: It displays all the information which is out of fire alarm information range, it shows fault ;start; feedback ;disable and other operation record in turns, The overwritten information can be browsing by touching corresponding items in the bottom side of the information windows.

# 8.Description of System Operation

## 8.1 Keypad

### 8.1.1Keypad Functions

Keys at right of main screen is used for shortcut operation, all of functional keys are controlled by Lock/Unlock key press each time to lock or unlock the main screen and keys.

Choosing *MUTE* in alarm or fault state can silence the buzzer of the control panel. Further press of the MUTE will not re-sound it. The FACP will only resound by priority when new message comes.

Choosing *RESET* can turn off all modules, all local outputs and reset all detectors, but do not affect the disabled devices. The control panel displays *Operating authority* on the main screen when pressing or touching RESET key, then entering corresponding password (Default 2nd password:6666) touch "Enter" button to confirm then press "RESET" key again to clears all indicator (except *Power*, *Battery* ,*Disable* and *Delay Mode* LED) and writes reset message into its "History records". If the fire alarm, fault or supervisory information still exists after reset operation, the system will display corresponding states. Otherwise, it returns to normal operation state.

### 8.1.2 Default Password for each operating authority

Some of the operation needs enter password to access corresponding operating authority in order to realize the functions or setting. Here is default password in following.

Operating authority 1st: No password

Operating authority 2nd:6666

Operating authority 3rd:7777

Operating authority 4th:8888

8.2 User Operation Instruction

## 8.2 Browsing messages

### 8.2.1 Browsing loop devices

Unlock the main screen, then touch "Loop" button at right of the screen, will entering loop devices browsing list.

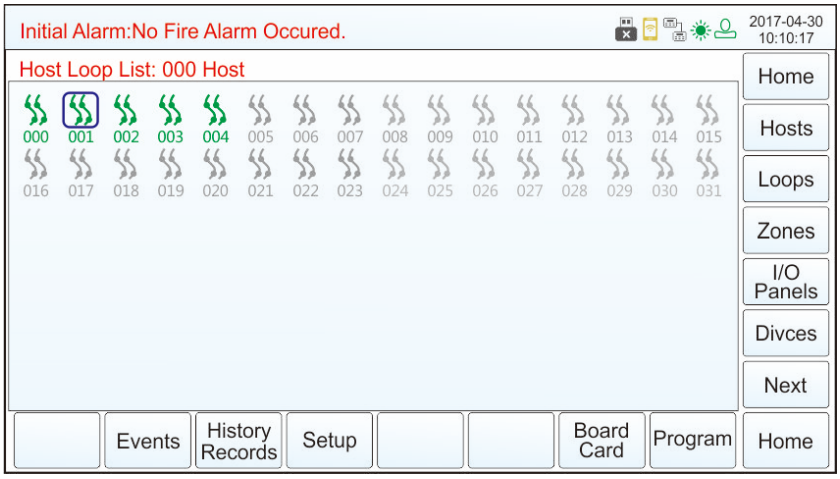



Fig. 8-1

"Host Loop List:000 Host" means that current control panel host No. is 000.


Indicates corresponding loop card number. Double-click the icon to enter current loop device query list.

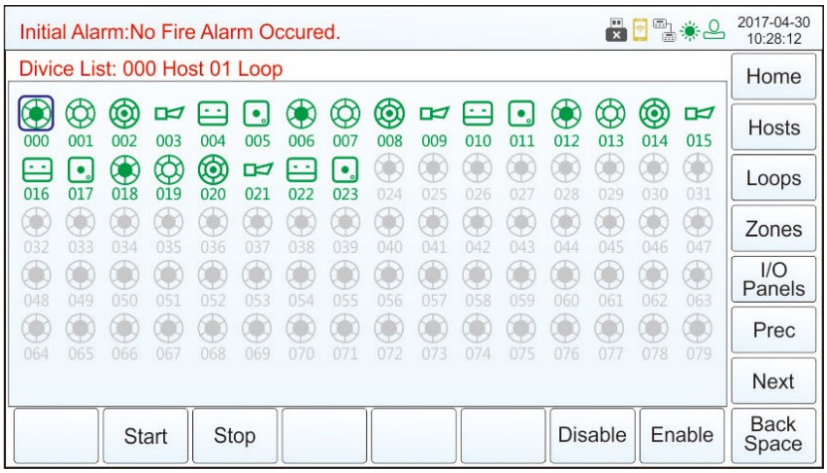



Fig. 8-2

Double-click each device shall enter device detail information list, click Next or Prev button can view other loop devices. Touch "Home" button to go back to main operation screen.

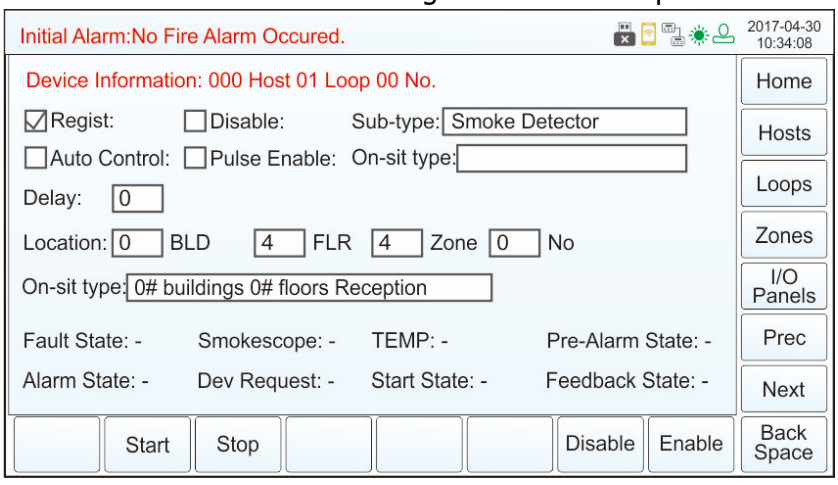



Fig.8-3

### 8.2.2 Browsing Zones

Choose Zones on the screen shown in Fig. 6-2 will enter the screen for browsing loop device as zones, please see in Fig. 8-5.

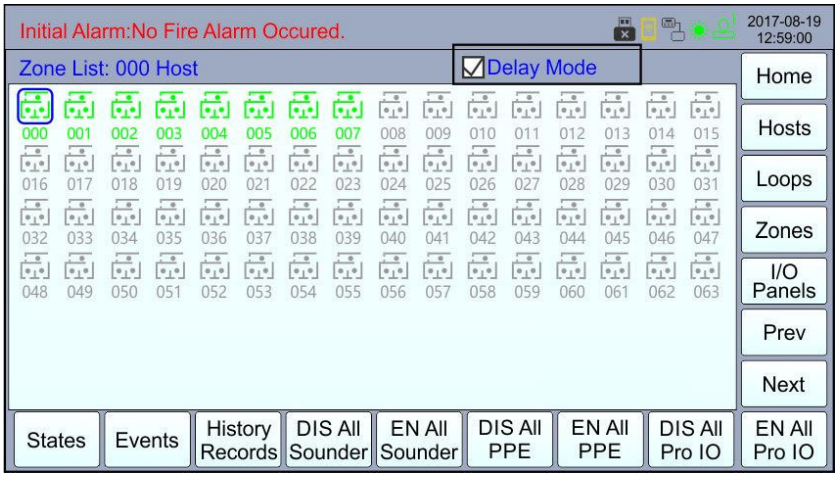



Fig.8-4

The zone can be divided via Debug Tools. Double-click each zone icon can view loop device as zone.

### 8.2.3 Browsing I/O device

Choose I/O Panels on the screen shown in Fig. 8-6 will enter the screen for browsing Sounder output device, and Pro I/O terminal box which had connected to control panel.

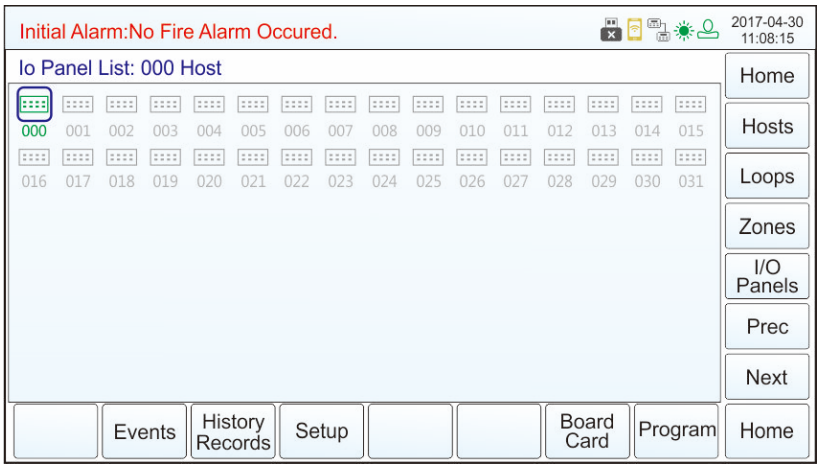



Fig. 8-5

Double click  icon can enter I/O Panel device list as Fig.8-7

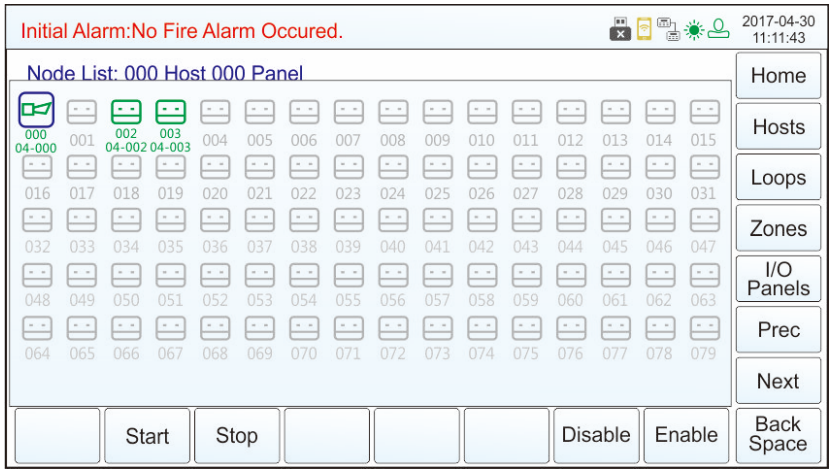



Fig.8-6

Double-click each device shall enter device detail information list as Fig.8-8, click Next or Prev button can view other Pro- I/O output device. Touch "Home" button to go back to main operation screen.

### 8.2.4 Browsing History records

Choosing setup at the bottom of the screen then choose History records, will enter browsing menu, the detailed operation record can be browsing by each category. Click corresponding category at bottom of the screen to view detail information.

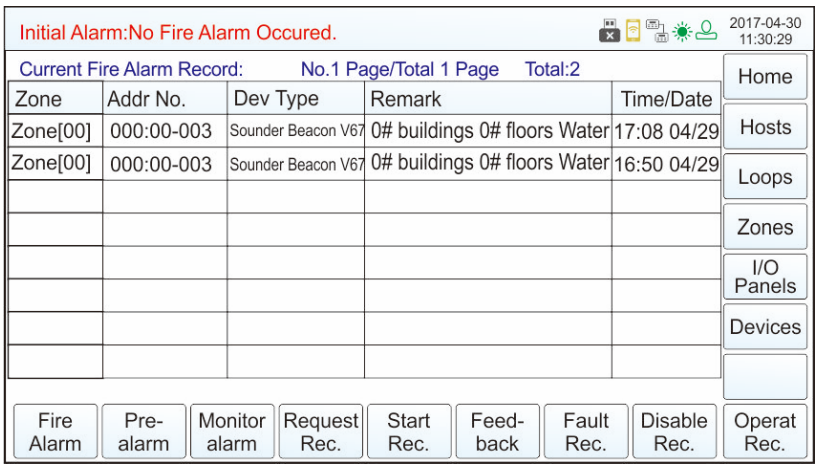



Fig.8-7

### 8.3 System Time Setup

Choosing Setup on the bottom of the screen then choose Date/Time and enter 2nd password (as 6666) will enter setting up system time interface, as in Fig. 8-9. Enter the time by click + and - . Choosing Apply can save the new system time.

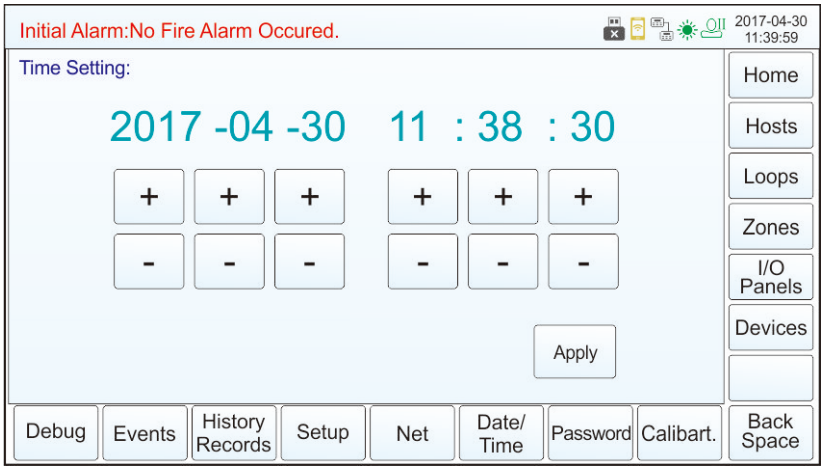



Fig. 8-8

### 8.4 Delay Mode

Delay time can be set at access level II. Choosing Zones on the right of screen shown in Fig. 8-10 will enter the screen for zone browsing menu ,the delay time can be switch on an off by check Delay Mode , LED Delay Mode/on will give corresponding indication. It needs to enter access level 2nd to set this function.

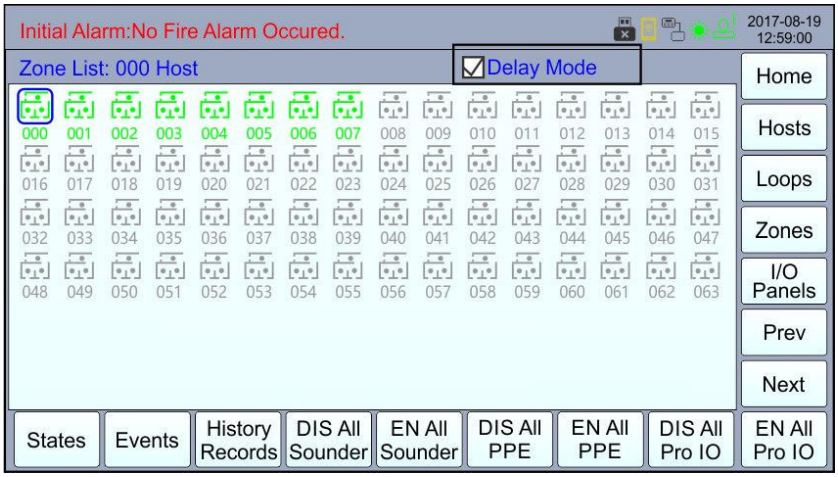



Fig. 8-9

Choosing "□Delay mode" in the above screen, the control panel enters night mode compulsorily. If alarm dependency Type A or Type B is set and the condition for dependency is not met within the pre-alarm delay period, the pre-alarm will be automatically cancelled.

Choosing "√ Delay mode", delay output of all output-type devices is allowed, and the control panel enters day mode or night mode according to the pre-set start/stop time. If, when the control panel works in day time, alarm dependency Type A or Type B is set and the condition for dependency is not met within the pre-alarm delay period, the pre-alarm will automatically change to fire alarm.

### 8.5 Start & Stop Device

#### 8.5.1 Start & Stop conventional sounder.

Click "EVAC" key, the main screen prompted to enter 2nd access level password l, enter the password then click EVAC again, all conventional sounder will start. Click "Sounder Silence" to silence all on filed conventional sounders.

### 8.5.2 Start & Stop Pro-I/O remote device.

If Pro-I/O is pre-set as FPE control. Click "FPE Active" key, the main screen prompted for a password to enter the 2nd access level, enter the password then click "FPE Active" again to activate all the FPE. The FPE active indicator will flashing when control panel output start signal to FPE, and if the panel receives feedback signal, the FPE indicator will illuminate continuously. Click FPE Disable can emergency stop FPE devices.

### 8.5.3 Start & Stop specified on filed device.

- Entering any browsing menu, to find out specified device as following picture.

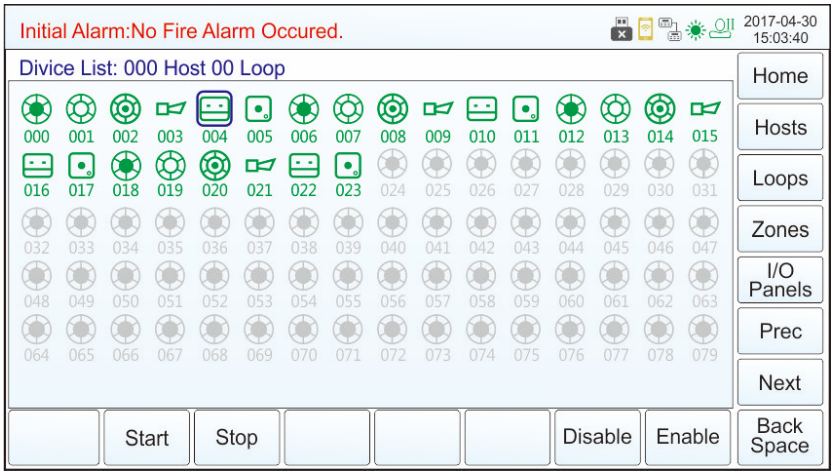



Fig.8-10

- Choose the device needs to be start. Device in blue box.
- Click start, the system will prompted to enter 2nd access level password, enter the password then click Start again, the device will be activated.
- Use the same procedure to stop the device

Note: The detectors and manual call point cannot be start or stopped.

## 8.6 Disable/Enable

These operations are used for faulty field devices that are not able to be repaired in time. In such cases, they are to be disabled temporarily and re-enabled after the problems are resolved.

Disable/Enable operation is available for addressable devices, conventional sounder, zones and output devices. The devices can be disabled in device browsing menu. Local output ports can also be regarded as addressable devices by setting their address number.

### 8.6.1 Disable/Enable specified on filed device.

- Entering any browsing menu, to find out specified device as following picture.

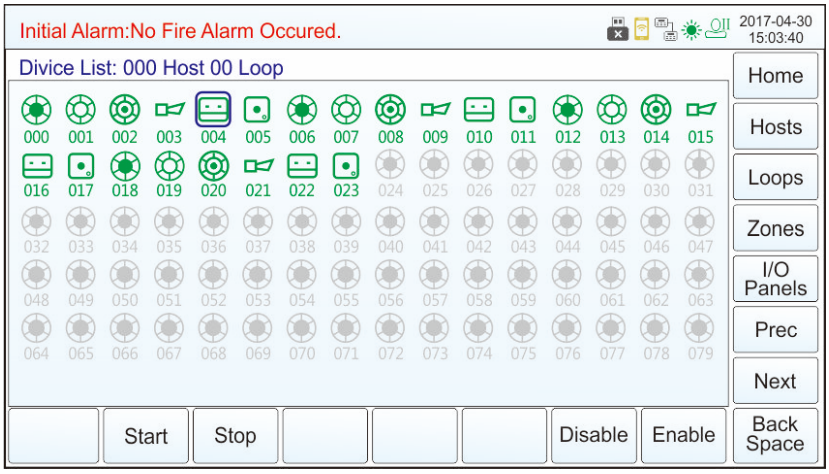



Fig.8-11

- Click the device icon double time to entering device detail information menu.

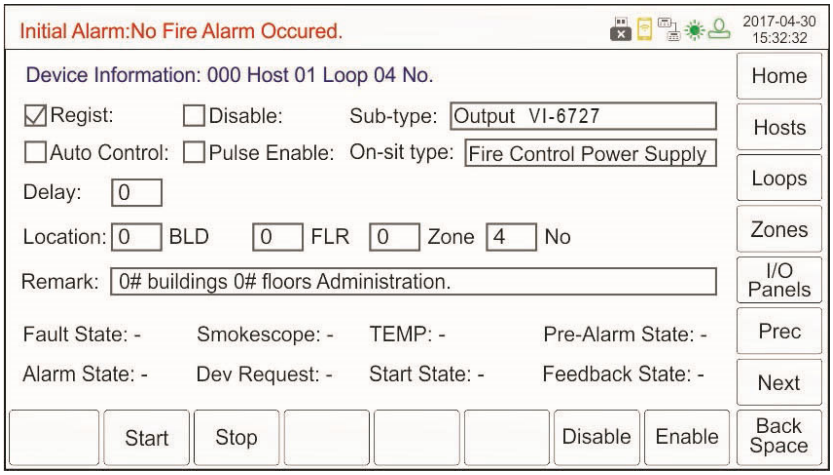



Fig.8-12

- Click Disable, the system will prompted to enter 2nd access level password, enter the password then click Disable again, the device will be disabled.
- LED Disable indicator will illuminated
- Use the same procedure to enable the device

### 8.6.2 Disable/Enable zones

- Enter zone browsing menu.

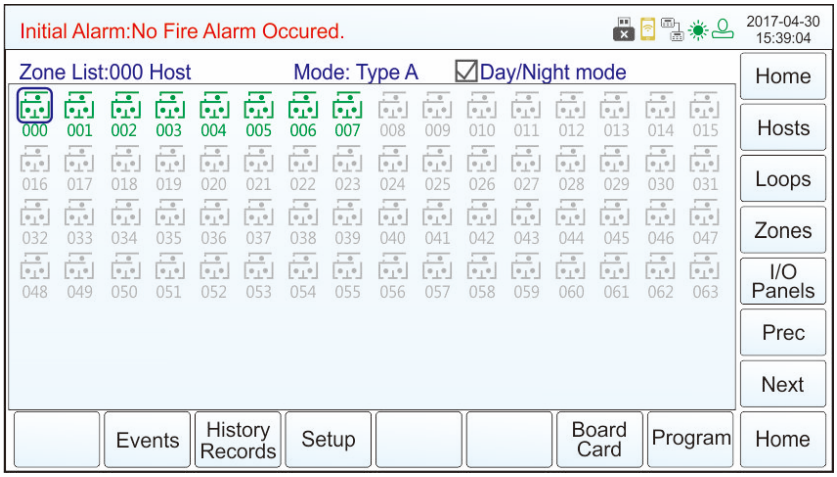



Fig.8-13

- Click the icon double time to enter corresponding zone, as following.

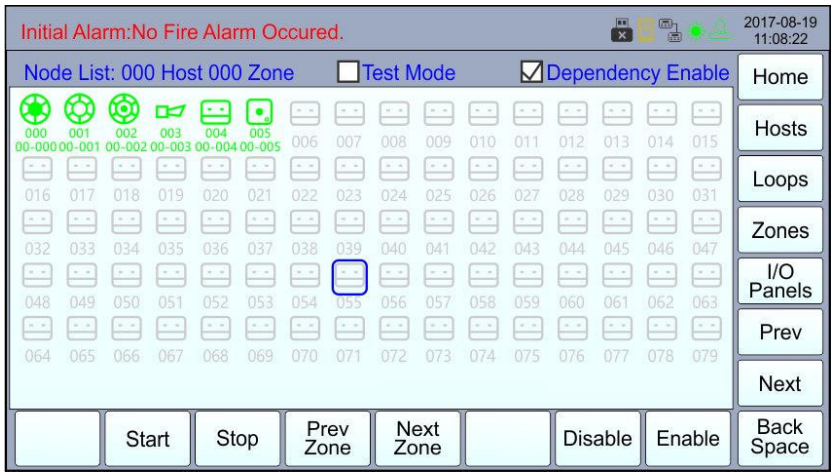



Fig.8-14

- Click Disable, the system will prompted to enter 2nd access level password, enter the password then click Disable again, the zone devices will be disabled.
- Click the list area to refresh the device status
- LED Disable indicator will illuminated
- Use the same procedure to enable the zone devices.

### 8.6.3 Disable/Enable Conventional sounder or output device.

- Enter browsing I/O device list

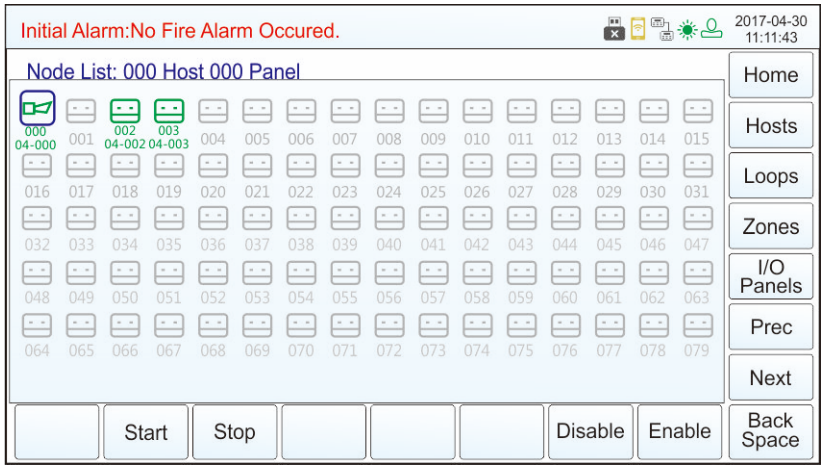



Fig.8-15

- Double click device which need to be disable will entering device detail information list.
- Click Disable, the system will prompted to enter 2nd access level password, enter the password then click Disable again, the device will be disabled.
- LED Disable indicator will illuminated
- Use the same procedure to enable the device

# 9. Servicing

The panel shall be serviced by specially trained engineers. Please disconnect power before servicing.

### 9.1 Replacing the Batteries

- ✧ Type: Sealed lead-acid battery.
- ✧ Recommend period for replacement: 5 years （25℃）
- ✧ Recommended manufacturer and model: Yuasa NP7-12
- ✧ Disposal of used batteries: Please properly dispose the used batteries according to your local rules and regulations.

**WARNING: RISK OF EXPLOSION IF BATTERIES ARE REPLACED BY AN INCORRECT TYPE!**

### 9.2 Replacing the Fuses

| Position | Mark | Rated value |
|---|---|---|
| Battery Connection Cable | 5A | F 5A250V |

**Note:** Follow the steps below to replace 5A fuse.

1) Unfasten the fuse holder in the battery connection to find 5A fuse.
2) Replace the 5A fuse.
3) Fasten the fuse holder

## Appendix : Equipment Symbol Table

| No. | Device Name | Equipment symbols |
|---|---|---|
| 0 | Smoke Detector |  |
| 1 | Heat Detector |  |
| 2 | Multi Detector |  |
| 3 | MCP |  |
| 4 | Fire Hydrant |  |
| 5 | Start Point |  |
| 6 | Abort Point |  |
| 7 | Alarm Port |  |
| 8 | Combustible Gas |  |
| 9 | Beam Detector |  |
| 10 | Flow Monitor |  |
| 11 | Pressure Switch |  |
| 12 | Optical Detector |  |
| 13 | Lonic Detector |  |
| 14 | Linear Heat Cable |  |
| 15 | FT Detector |  |
| 16 | RR Detector |  |
| 17 | FT&RR Detector |  |
| 18 | Analog Heat |  |
| 19 | Multi FT |  |
| 20 | Multi RR |  |
| 21 | Multi FT&RR |  |
| 22 | S/A Button |  |
| 23 | Low Water |  |
| 24 | Hight Water |  |
| 25 | Butterfly Valve |  |
| 26 | RVSX |  |
| 27 | UV Detector |  |
| 28 | IR Detector |  |
| 29 | Multi UV&IR |  |
| 30 | Triple-IR Detector |  |
| 64 | Supervise Port |  |
| 65 | Secu.Module |  |
| 66 | Switch Port |  |
| 128 | Control Module |  |
| 129 | Input Module |  |
| 130 | Sounder(B) |  |
| 131 | Sounder(C) |  |
| 132 | Voice Alarm |  |
| 133 | Flow indicator |  |
| 134 | Air Window |  |
| 135 | Exhaust Window |  |
| 136 | Semi Roll |  |
| 137 | Full Roll |  |
| 138 | Fire Door |  |

| No. | Device Name | Equipment symbols |
|---|---|---|
| 139 | Emerg.Lighting |  |
| 140 | EVAC Indicator |  |
| 141 | EEL |  |
| 142 | Power Shutdown |  |
| 143 | Air Blower |  |
| 144 | Exhaust Fan |  |
| 145 | Hydrant Pump |  |
| 146 | Sprinkler Pump |  |
| 147 | Solenoid Valve |  |
| 148 | Start Button |  |
| 149 | Abort Button |  |
| 150 | Release Indicate |  |
| 151 | G.R.Indicate |  |
| 152 | AC Power-off |  |
| 153 | Fire PSU |  |
| 154 | Diesel Generator |  |
| 155 | Battery On |  |
| 156 | Battery Display |  |
| 157 | Floor Lamp |  |
| 158 | Air Compressor |  |
| 159 | FRD |  |
| 160 | 280°Valve |  |
| 161 | 70°Valve |  |
| 162 | Release Valve |  |
| 163 | Alarm Bell |  |
| 164 | Sprinkler Valve |  |
| 165 | WCMV |  |
| 166 | S.B.Valve |  |
| 167 | S.G.Valve |  |
| 168 | S.P.Pump |  |
| 169 | Foam Pump |  |
| 170 | W.C.Pump |  |
| 171 | Sprinkler Pump |  |
| 172 | Pump Fault |  |
| 173 | Dry Powder |  |
| 174 | Air Compressor |  |
| 175 | Control Interface |  |
| 176 | Output Interface |  |
| 177 | Alret Base |  |
| 178 | Door Lamp |  |
| 192 | LCD Repeater |  |
| 193 | Digital Repeater |  |
| 194 | Floor Repeater |  |
| 195 | Virtual Device |  |
| 196 | User-defined |  |

Any quality problem may choose any of the following ways to contact us, we will wholeheartedly for your service.

Company name：Tianjin VSAIL Intelligent Fire Technology Co.,Ltd

Company address：No.401,Building 6 , No.1 Xinxing Roard, Wuqing Development Zone, Tianjin,301700, China

postalcode：301700 website：www.vsailglobal.com