USER'S MANUAL

Fanhai Sanjiang

Fire Alarm Control Panel

JB-QBL-9116E

USER'S MANUAL

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Preface

JB-QBL-9116E fire alarm control unit is a new generation of intelligent and integrated fire alarm and linkage control unit designed by Shenzhen Fanhai Sanjiang Electronics Co., Ltd. The company strictly follows the requirements and spirit of GB 4717-2005 Fire Alarm Control Unit and refers to related requirements in EN 54-2 and EN 54-4, combining with sufficient surveys of fire protection market requirements and years of experience in fire engineering projects in the fire industry.

The fire alarm control unit is of modular design and features with powerful functions, outstanding cost performance and other advantages. The system is equipped with 7"color LCD and a dedicated mini-printer as standard, which can print English character information of all alarms, faults and various operations. It has the capabilities of comprehensive field programming and solving complex linkage relation setup. It imitates Windows operation interface, which is easy to learn and use, and to enter English characters. The maximum capacity of a single equipment reaches 5184 bus alarm points.

JB-QBL-9116E intelligent two-bus alarm linkage control unit may be connected (as required) to intelligent fire detectors, input modules, output modules and multi-wire linkage units produced by the company, thus forming a fire alarm system integrated with alarm and linkage, bus and multi-wire, so as to satisfy the requirements of fire engineering.

（Thank you for selecting the quality product produced by SHENZHEN FANHAI SANJIANG ELECTRONICS CO.,LTD!）

Please be sure to read this user’s manual carefully before using and operating the equipment. After debugging and acceptance, this user’s manual should be taken charge of by a special person and be kept properly for future reference!

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Chapter 1 System Overview

1.1 System introduction

JB-QBL-9116E fire alarm control panel (Linkage)(hereinafter referred to fire control unit) is a new generation of fire alarm control panel launched by Shenzhen Fanhai Sanjiang Electronics Co., Ltd. It can support uses of other related products of the Company to form an integrated alarm and linkage control system, which is perfectly suitable for the application of small and medium-sized fire alarm and firefighting and linkage integrated control system.

The fire alarm control system is widely used in small and medium-sized firefighting engineering, such as high-grade office building, residence community, department store, gymnasium, exhibition room, library, workshop, supermarket and hotels.

1.2 System features

- ✧ Adopts the latest generation of high-speed microprocessor. Data processing rate and data storage capacity reach 100-fold and 1000-fold increase, respectively, compared to traditional technologies
- ✧ JB-QBL-9116E is provided with 7" color display screen (LCD), with a display resolution of 800×480.
- ✧ The operation interface imitates Windows menus and window interfaces and is almost the same as the computer operating and using habits, thus facilitates the learning.
- ✧ Operation and control are flexible and convenient through the standard USB-interfaced computer keyboard and mouse. the panel buttons are used as field programming devices.
- ✧ T9 pinyin input method is provided and texts can be input easily and freely.
- ✧ Use smart U disk (optional), which can be used to copy or restore setup file and historical file of the system, thus facilitating the system maintenance.
- ✧ It adopts the non-polarity two-bus intelligent alarm linkage pattern and can connect 324 intelligent detectors or intelligent modules at most. The addresses of module detectors can be mix-programmed (optional 1-324)
- ✧ Several high-speed CAN bus interface guarantee speedy and reliable data transmission.
- ✧ It can supports interconnection of 20 JB-QBL-9116E control units with CAN Bus and the maximum system capacity after networking reaches 16×324=5184 (alarm point).It can supports interconnection of 254 control units with Ethernet and the maximum system capacity after networking reaches 254×5184=1316731 (alarm point).
- ✧ Each conventional control panel includes 6 controlled outputs.
- ✧ The system has the function of recording operation history: 1000 pieces of historical fire alarms, historical requests, historical feedbacks, historical faults and historical operations, respectively
- ✧ The user may customize the equipment type, which can facilitate the system linkage
- ✧ It has the modular manual single-point start/stop functions, which can facilitate field debugging and testing
- ✧ It has the single-point detector/module testing function, the detector working status and test data are clearly displayed
- ✧ The system is provided with a dedicated mini-printer as standard, which is used to print various operating statuses of the system immediately
- ✧ It can be accessed with area indicating panels, building indicating panels and floor indicating panels, which will extend display information of the control unit to corridor and other locations
- ✧ It can be connected with PC contributing to display information of fire alarms(alternative).
- ✧ The system carries out the hierarchy management of multi-level users and the users of different levels are granted with corresponding operating system permissions, which is convenient for system management
- ✧ It is possible to update the system on field or remotely to ensure the system operates stably and reliably
- ✧ Standards: GB 4717-2005 Fire Alarm Control Unit
  GB 16806-2006 Fire control linkage control system

1.3 System connection diagram

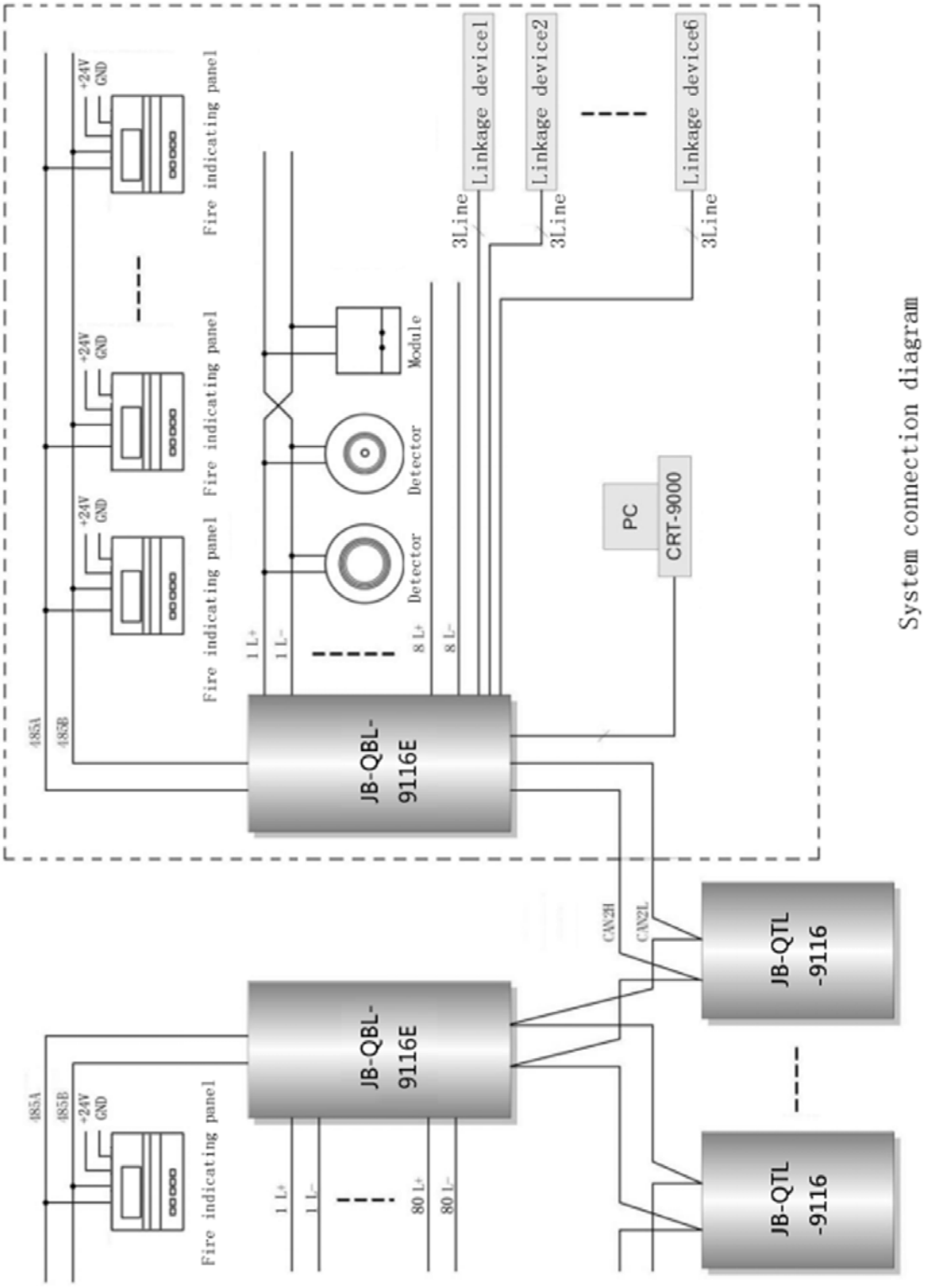


Figure 1−1 System connection diagram

1.4 Introduction to system equipments

As shown in Figure 1-1,in order to familiarize you with this system, the equipments are introduced briefly in the following sections. The fire control system is composed of the following main constituent parts:

- **Main control part**

The main control part is responsible for processing and analyzing the data messages transmitted from other parts, and directing, based on results of data analysis, other parts in the system to execute corresponding orders, such as controlling buzzer to sound for fire.

- **Display component**

  The display component provides main output interface for alarm message and routine maintenance and query interface.

- **Input device**

  The system transplants the computer standard peripheral interface, panel buttons or USB-interfaced keyboard / button as input devices, which brings much convenience for the user to set up and maintain the system.

- **Power supply**

  The power supply is used for all internal equipment in the whole system. The system adopts the special firefighting equipment power with DC 24V output, which can provide alarm or feedback signals, such as main electrical faults, backup electrical faults, standby power under-voltage and standby power charging, and have good immunity characteristics.

- **Bus**

  The bus is used as the driver of detector/module bus, which may drive 324 intelligent detectors or intelligent modules and can be equipped with bus indicating panel.

- **Fire detector**

  The system can get access to various intelligent smoke, thermal or compound detectors produced by the company, and the main types include JTY-GD-930E and JTW-ZD -920E.

- **Manual module panel**

  Each manual panel has 12 manual control buttons, each button corresponds to a control module. Button pressed completes start/stop of control module.

- **conventional control panel**

  Each conventional control panel includes 6 controlled outputs, controls 6 main devices under direct control, such as fire pump etc.

- **acousto-optic alarm apparatus, manual alarm apparatus and fire hydrant**

  It can get access to intelligent acousto-optic alarm apparatus SG-991E, intelligent manual alarm button J-SAP-M-960E and intelligent fire hydrant J-SAP-M-961E.

- **Printer**

  The system is equipped with a special mini-printer (hereinafter referred to printer) as standard, which can print alarms, feedbacks and fault messages for future reference.

- **Fire indicating panel**

  The fire-indicating panel is also called floor-indicating panel and its application is expanded in the system, which can be used as both "building indicating panel" and "floor indicating panel". The model of indicating panel accessed to the system is JB-FSD-982E.

1.5 Technical parameters of system products

1.5.1 Power supply

Main power supply: AC 220V±20%/50Hz or DC24V;
standby power supply: DC24V maintenance-free battery BAT12V/14AH×2

1.5.2 System operating environment

Ambient temperature: Operating -10℃～+55℃

Ambient humidity: ≤95% (40℃±2℃, no condensation)

1.5.3 Peripheral equipment

See product instructions for detailed technical parameters of detector, module and acousto-optic equipment.

Chapter 2 Engineering Installation and Dimension of the System

2.1 Outline and dimension diagram of products

✧ Outline and dimension of JB-QBL-9116E

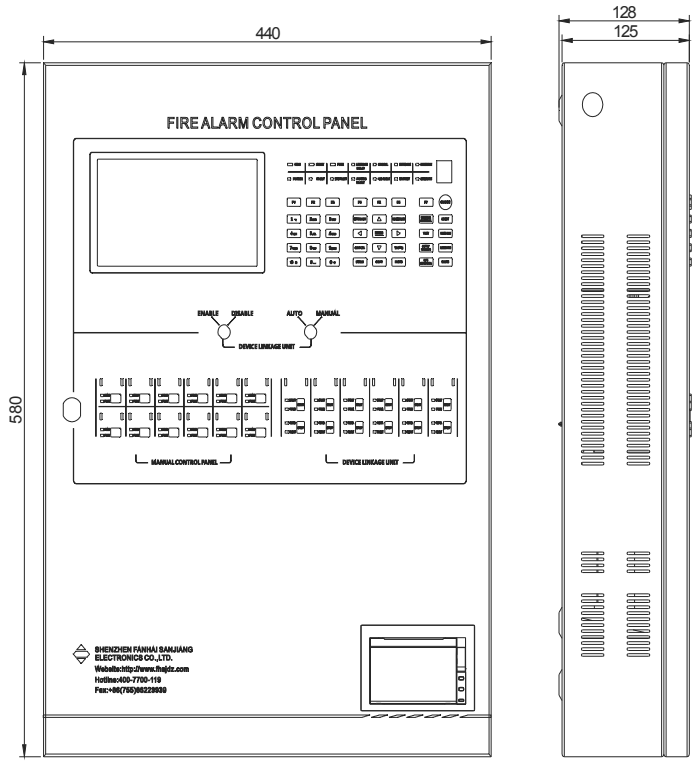


Figure 2-1 Case dimension

2.2 System installation

2.2.1 Items check

Before installation, check the field equipment at first. After opening the packing box, check the goods inside the box one by one according to the packing list and the main check contents including installation and operation instructions, fuse, standby screw and key of the control unit, and then, if necessary, check appearance of the control box after verification. Please call the sales personnel of our company immediately in case of any discrepancies found during the check.

2.2.2 Check of engineering configuration

Check packaging list of the control equipment against engineering configuration. The requirements shall match with the design drawing.

2.2.3 Check and connection of external equipment

Check the conditions of the bus connected with the control unit and measure the insulation resistance between different loop buses, between bus and ground, as well as load condition of the loop. Wherein, insulation resistance should be higher than 20MΩ and loop impedance should be lower than 40Ω.

Check the status of circuit equipment with debugging device, that is, whether equipment number, coding and operating status comply with the design requirements, eliminate existing faults and prepare for system connection.

Connect peripheral equipment or connecting line of the system into input terminal of the system control unit, see instructions on the label for definitions of each terminal. The contact shall be good. Check with multimeter that it is free of short circuits or open circuits after connection.

2.2.4 Power-on test

After verification by above checks, power on and carry out simple tests of the control unit, and verify whether power supply and basic functions (such as button and indication functions) of the control unit operate normally without connecting the peripheral equipment.

Chapter 3 System Debugging and Use

3.1 System debugging

After connection and verification, the system may be switched on for debugging, mainly including logging and testing of detector and module, and setup of linkage relation.

3.2 System operating instructions

3.2.1 Functions of the panel

The layout of JB-QBL-9116E panel is as follows:

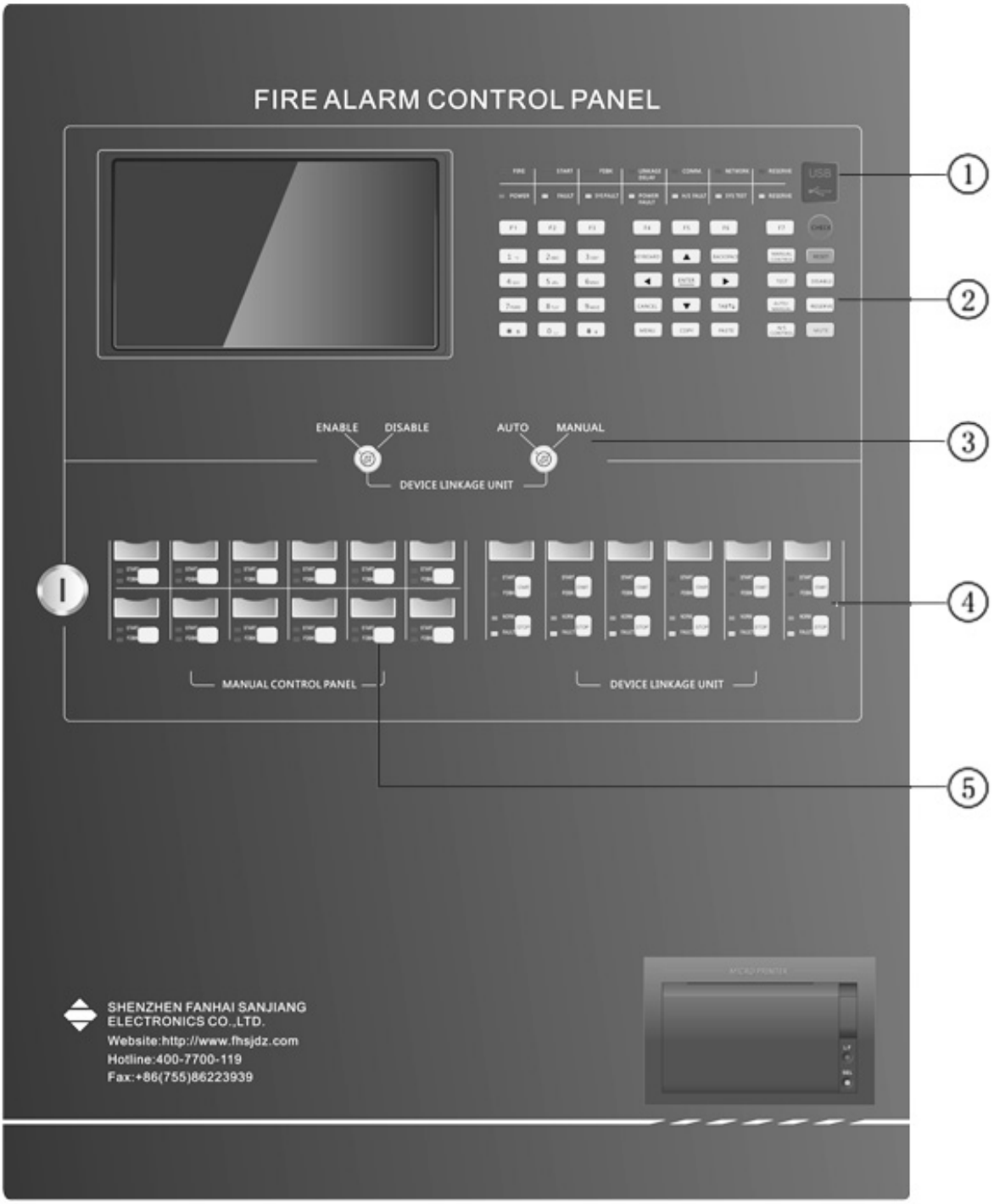


Figure 3-1 Layout diagram of the panel

The design of panel contains the basic functions of alarm enquiries and control. The indication in the above figure is detailed as follows:

Indication function zone:

① Indication function：

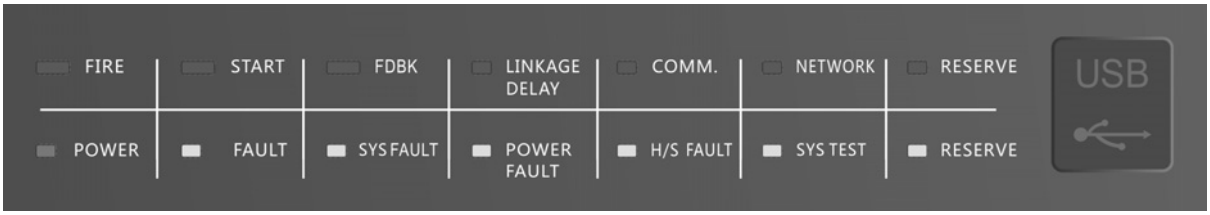


Figure 3-2 Indication function zone

No.	Silk-screen characters	Light color	Function description
01	**POWER**	Green	The indicator light will be on when the mainboard is normally supplied by the host (or standby power supply). Friendly Reminder The illuminating of the indicator light does not indicate other system components (except for the mainboard) are normally supplied, that is, the indicator light will be on as long as the power supply of the mainboard is normal.
02	**FIRE**	Red	The indicator light is on when the system detects any fire alarm.
03	**FAULT**	Yellow	The indicator light will be lit when the system detects any fault alarm (regardless of fault types).
04	**START**	Red	The indicator light will be lit if the system has sent out a linkage request of a certain module.
05	**SYSTEM FAULT**	Yellow	The indicator light will be lit when the machine is in fault or the system is not operating as expected.
06	**FDBK**	Red	The indicator light will be lit if the system has received a linkage feedback of a certain module.
07	**POWER FAUIT**	Yellow	The indicator light will be lit when the system detects the alarm of power supply (regardless of fault type).
08	**LINKAGE DELAY**	Red	The indicator light has been lit up until the end of linkage delay.
09	**H/S FAULT**	Yellow	The indicator light will be lit when the horn/strobe alarm apparatus or far sound equipment (alarm bell) in the system goes wrong.
10	**COMM.**	Red	The indicator light will be flash when the CAN communication or Ethernet communication is normally.
11	**SYSTEM TEST**	Yellow	The indicator light will be lit when the machine carries out self-test or single-point test and will go off after self-test completion.
12	**NETWORK**	Red	The indicator light is temporarily useless.

13	**RESERVE**	Yellow	The indicator light is temporarily useless.
14	**RESERVE**	Red	The indicator light is temporarily useless.

②Key functional zone:

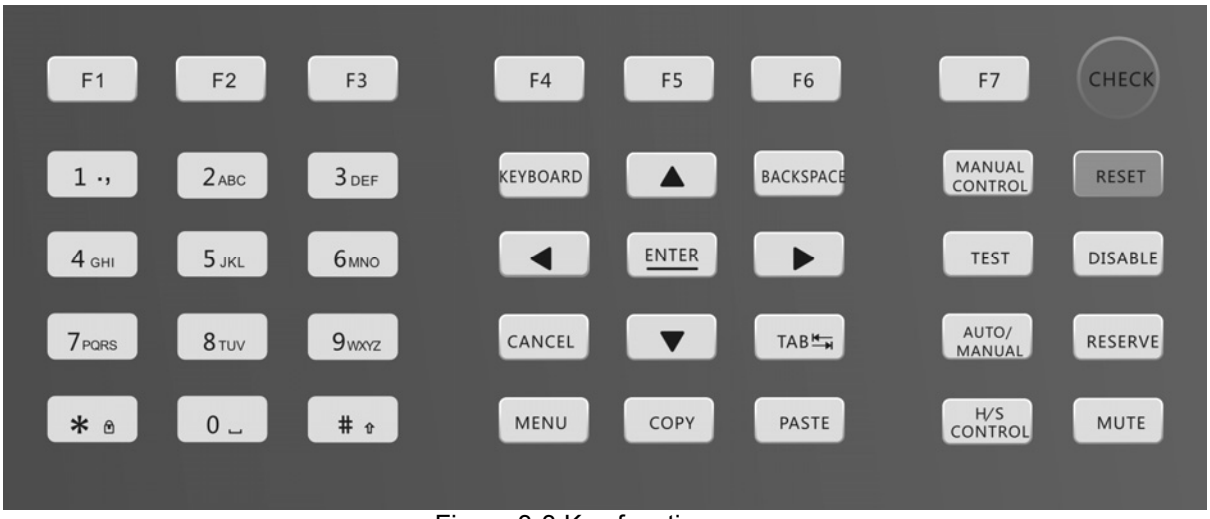


Figure 3-3 Key function zone

1) KEYBOARD function key (with light key)

Originally, the panel keys are under OFF state at power-on, AND KEYBOARD indicator light is off. Press KEYBOARD key or * key of panel keyboard or CTRL+ALT+DEL of USB keyboard and the password input box will prompt on the display, then enter into the password and login in (see User's Manual for details). The system will open the panel keyboard when receiving the correct password and KEYBOARD indicator light is lit. Under open state, press KEYBOARD or * KEY of panel keyboard or CTRL+ALT+DEL of USB keyboard to close the keyboard and log out.

Friendly Reminder When the panel keyboard is open, the system will automatically log out the logging status and close the panel keyboard if it is inactive for about 3 minutes. Except for MUTE,and F7 ,other function keys are allowed to be operated only when the panel keyboard is open.

2) AUTO/MAUAL function key(with light key)

In manual status, pressing **AUTO/MAUAL** to switch to automatic status, meanwhile the "auto" indicator lights up; switch to the manual status after pressing again, and the indicator is out. In CAN-Net, press **AUTO/MAUAL** on any host,the integrated status of any other hosts will be changed as well.

3) MANUAL CONTROL function key (with light key)

If MANUAL CONTROL of the system is prohibited, press MANUAL CONTROL to enable all manual control panels of the bus switched in, and meanwhile the permission light under MANUAL CONTROL is lit. Press again to return to the prohibited status and the indicator light goes off. If multiple hosts are networked, press MANUAL CONTROL of host 1 in the network, and the status of all manual control panels of the bus will be changed simultaneously and stay the same with host 1; if MANUAL CONTROL of other host is pressed, the status of the host will be changed only. The manual control panels of the bus will be saved at power-off, which means the manual control panels of the bus will resume the status before power-off when the system is switched on again after power-off.

4) MUTE function key

Press MUTE key to mute the sounds of interior buzzer, fire indicating panel and graphic display device in the fire control room. Under mute state, the buzzer and other audible alarm apparatus will be restarted in case of any new alarm. MUTE key is the only key without password protection in the system. It will stay valid regardless of on or off states of the panel keyboard.

5) H/S CONTROL function key (with light key)

Press H/S CONTROL to mute all the external equipment (alarm bell and horn/strobe alarm apparatus) in the system. In case of fire alarm, H/S CONTROL key can be used to switch off or restart sounds of corresponding alarm apparatus. When H/S CONTROL is pressed and the alarm sound is muted, H/S CONTROL indicator light is lit. In case of new fire alarm in the system and linking with alarm bell or acousto-optic alarm apparatus, H/S CONTROL indicator light turns off and alarm sound of corresponding alarm apparatus will be restarted. The key can be operated only if the user has logged in the system.

6) DISABLE function key (with light key)

Pressing **DISABLE** will isolate all bus equipment (any bus equipment in the networking system) under alarm state (fire alarm, feedback or fault state) currently. The system will not send any acousto-optic alarm for the alarm message generated by a certain isolated equipment. The fault messages including power supply, printer, indicating panel and host communication cannot be isolated. The isolation light is lit in case of any isolated bus equipment existing in the system.

⚠Friendly Reminder Only the super user has the permission to operate this function. The isolation is only valid for the display information and the isolated equipment will operate normally. The entry for isolating current alarm is provided on the panel only and isolation operations menu querying isolation and cancelling all isolation, can be achieved by the menu.

7) TEST function key

Press TEST to get the system into self-test process: light up all indicator lights for light test, try many acoustic modes for buzzer (fire alarm, fault and feedback) and illuminate the pixel matrix on the screen by sequence. The system will log out automatically after self-test completion.

⚠Attention The system will not receive alarm signals temporarily under self-test state.

8) RESET function key

Press RESET to eliminate all current alarms and reboot the system. The whole process takes 30-60s. If multiple hosts are networked, press RESET key of host 1 and all hosts in the network will be reset; press RESET key of other host, this host itself will be reset.

⚠Attention If multiple hosts are networked, host 1 is used as the concentrator (system host), press RESET, MUTE, H/S CONTROL keys,all regional units (host 2-20) will execute this operation; when the regional unit operates these keys, the state of itself will only be changed. When the regional units in the networking system are under set state, press RESET key on the concentrator, the regional units will response the restore command immediately and the files currently set by the regional units will lose this update, which means the data set since last storage will not be saved automatically! Therefore, if multiple debuggers operate at the same time, please disconnect the connecting line of the host being set temporarily before inputting large data volume!

9) CHECK

The function is used for counting registered number of zones, buildings and floors in the system and registered number of detectors and modules of each type set on the interface board. All information will scroll up and down on the display screen.

10) RESERVE function key

In manual status, pressing **RESERVE** switch to automatic status, meanwhile the "auto" indicator lights up; switch to manual status after pressing again and the indicator is out. In CAN-Net, press **RESERVE** on one host, then the status of all hosts is changed at the same time.

11) Selection and query edit of LCD content

There are 9 keys in this section: ▲, ▼, TAB⇆, ENTER, BACKSPACE, CANCEL, MENU, COPY, PASTE. Meaning and purpose of these 9 keys:

▲ - scroll upward
▼ - scroll downward
ENTER - SELECT THE OPTION CORRESPONDING TO THE CURSOR
BACKSPACE - DELETE TO THE LEFT
CANCEL - EXIT CURRENT OPTION
PASTE - COPY CONTENT OF SELECTED ITEM
COPY - PASTE COPIED CONTENT TO CURRENT POSITION
MENU - ENTER INTO MENU INTERFACE
TAB⇆ - skip to different options by the sequence of from left to right and from top to bottom

③ Key switch of device linkage unit

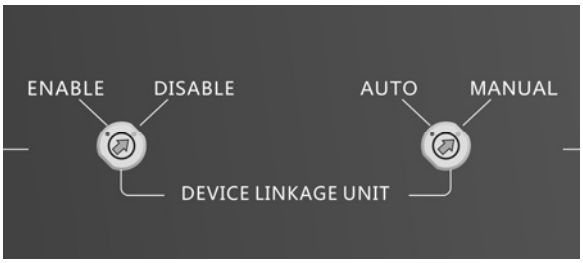


Figure 3-4 Key switch of linkage unit

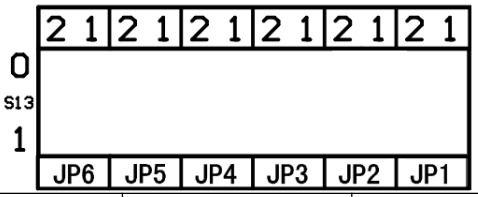
- ENABLE/DISABLE key switch: Enable/disable the use of the button of linkage unit.
- AUTO/MANUAL key switch: If the system is in a state of fire alarm, the corresponding device will be started automatically when the "AUTO" is chosen . The device will not be started in the condition of fire alarm when the "MANUAL" is chosen.

⚠Attention Key switch is only effective for device linkage unit.

④ Device linkage unit

- Each conventional control panel includes 6 controlled outputs, controls 6 main devices under direct control, such as fire pump etc.
- The binary address can be changed by the S14 of linkage unit. The address range of linkage unit is as follows:

  Starting address = address*6+1
  Last address = address*6+6
- The S13 is used to set output and feedback. Setting method is as follows:



Jumper	2 (Output)	1 (Feedback)
0	Normally-off	Level output
1	Normally-on	Pulse output

The controller panel of linkage unit including 6 controlled outputs is as follows:

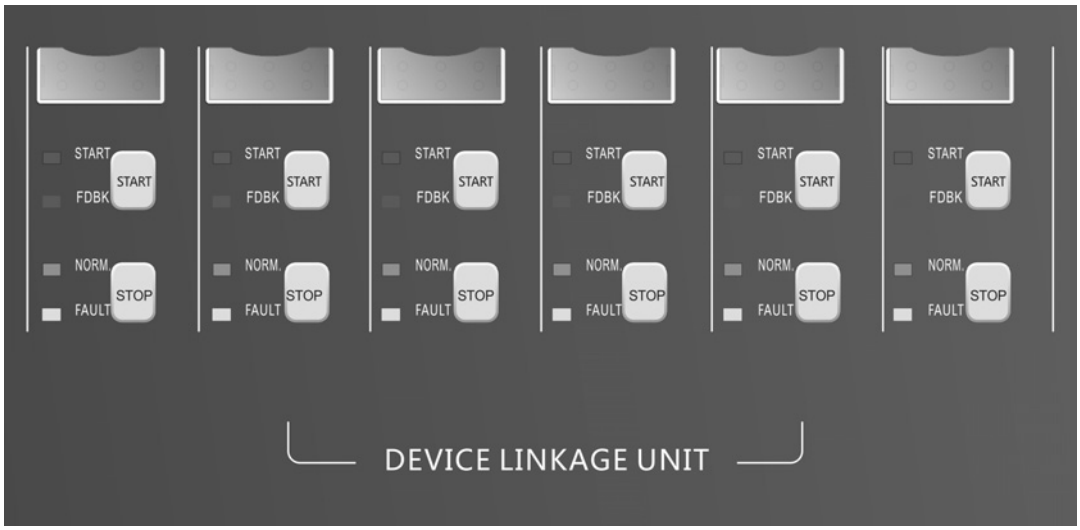


Figure 3-5 linkage unit function zone

- If the key switch of the system is allowed, press START to enable corresponding control panels of the bus switched in, and meanwhile the indicator light is lit. On the contrary, press STOP to disable corresponding control panels of the bus switched in.
- The "FDBK" indicator light will be lit when the feedback signal access(For example,1-2 and 1-3 short-circuit).
- The "FAULT" indicator light will be lit when the lines have problems.

⚠Attention Restart and login the system when the address is changed.

⑤Manual module panel

Each manual panel has 12 manual control buttons, each button corresponds to a control module. Button pressed completes start/stop of control module.Meanwhile the indicator light will be lit.The binary address can be changed by these jumpers ranged from JP1 to JP4 of manual panel. The address range of manual panel is as follows:

Starting address = address*30+1
Last address = address*30+12

The controller panel of manual panel including 12 controlled outputs is as follows:

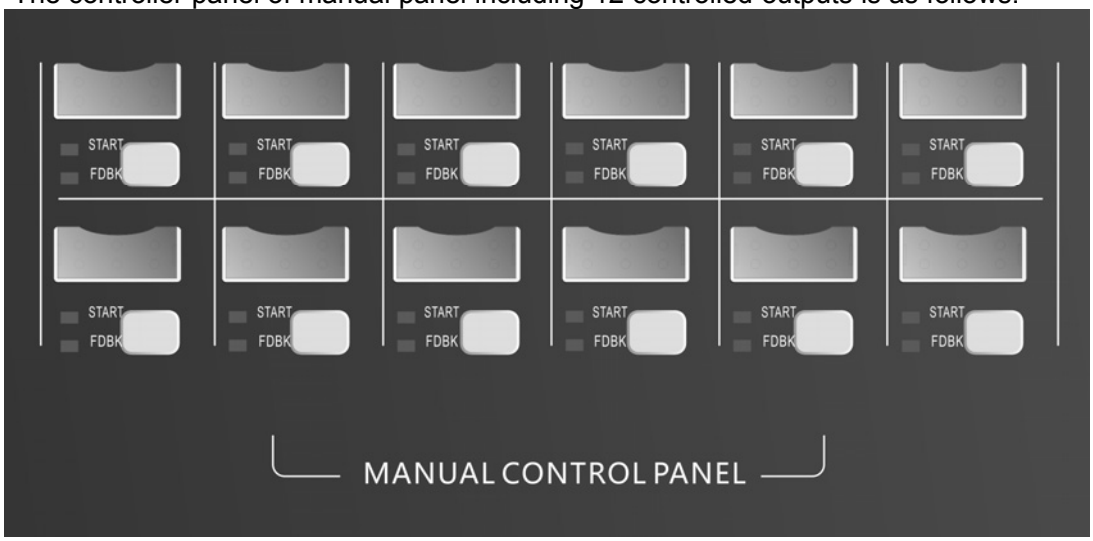


Figure 3-6 manual panel function zone

If MANUAL CONTROL of the system is allowed, press to enable corresponding control panels of the bus switched in,and meanwhile the indicator light is lit. On the contrary, press the button again to disable corresponding control panels of the bus switched in.The "FDBK" indicator light will be lit when the feedback signal access.

Display interface of the screen:

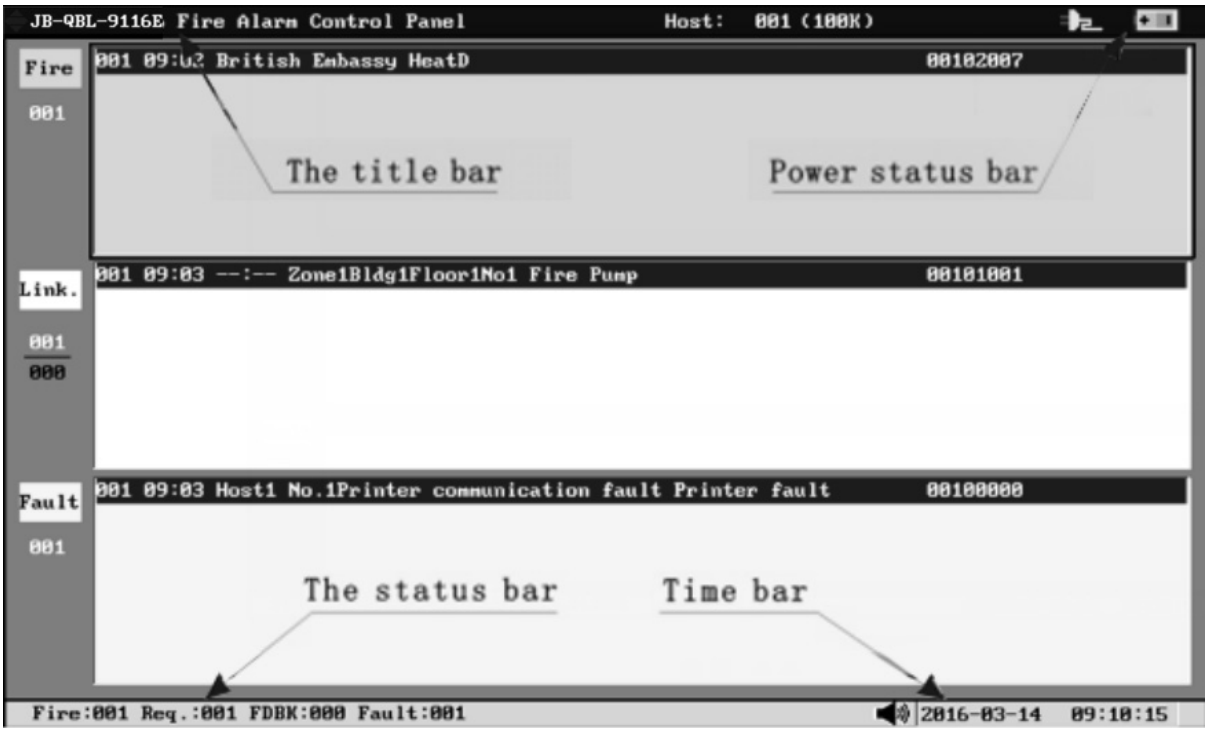


Figure 3-7 Display interface

The following describes the conventional display bars on the screen, which will be displayed no matter what state the screen is in. There are 4 conventional display bars on the display screen, as shown in the following figure:

- **The title bar**
  Display model and name of the host as well as company logo
- **The status bar**
  It has the following main functions:
  ✧ Display the special function buttons available currently
  ✧ Display the total amount of fire alarm, request, feedback and faults under alarm state
- **Time bar**
  Display current date and time of the system
- **Power status bar**
  Display the current power status of the host by icon, as shown in the figure:

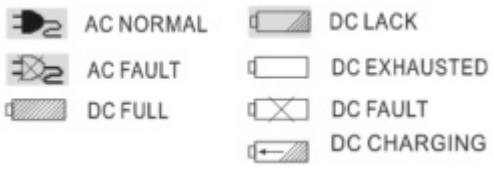


Figure 3-8 Status and meaning of icons

3.2.2 Start-up and power-on

The power supply required for normal operation of the system is AC 220V±20%, 50Hz. The equipment must be well grounded. After confirmation of these operating environments, power on and start up.

At this moment, the system will check and load the data required for system operation and set the external equipment as required. The current initialization steps will be displayed in the status bar. The initialization process will take 10-20s and them the system will enter into the interface as follows after initialization:

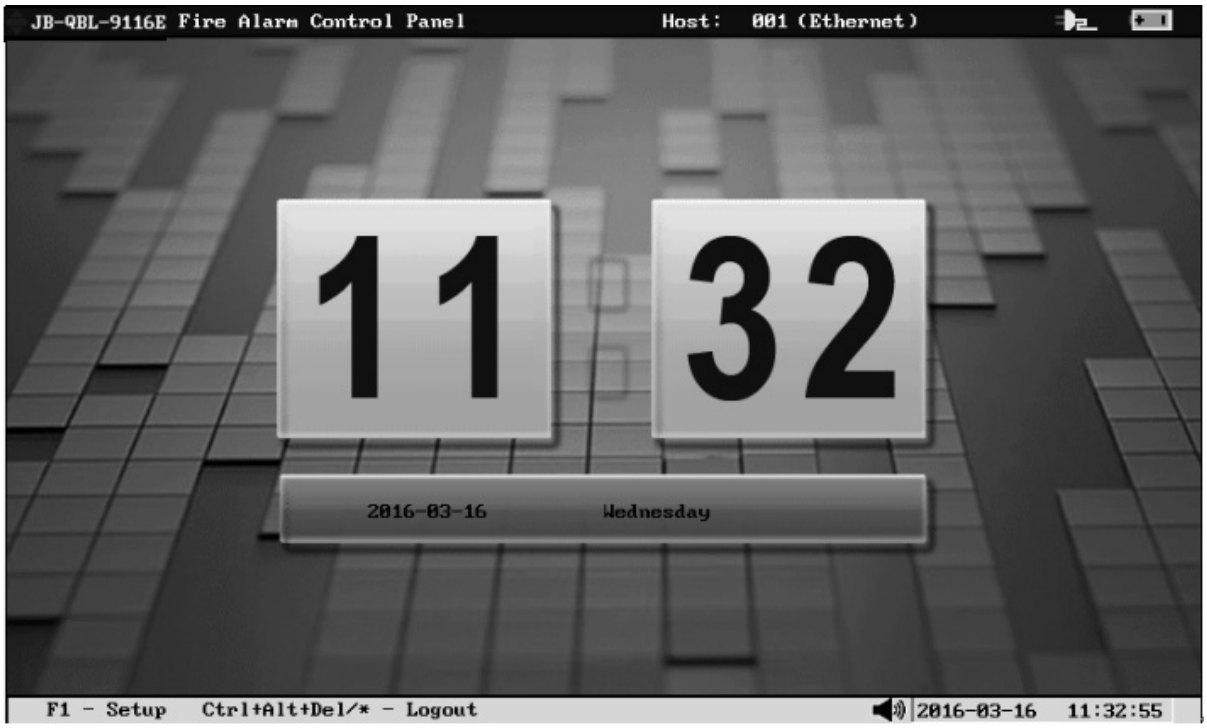


Figure 3-9 Normal prompt interface of the system operation

The prompt interface means the system has entered into the monitoring status.

3.2.3 Login operation of the users

Login in refers to the process of entering password by the users and identifying by the system.

The users may operate the functions with the system complying with its identity after login in.

The users may be divided into four categories based on different operating authorization:

1. **Super user:** system designer (8-digital password)
2. **System debugger:** System debugger of the manufacturer (8-digital password)
3. **System administrator:** maintenance personnel of the user system (6-digital password)
4. **Watchman:** person on duty at the fire control room (4-digital password)

⚠Attention The user classification aims to prevent possible mal-operation and facilitate system maintenance and management.

The watchman is not allowed to enter the system setting interface and can login in, check and operate through the panel keyboard only.

⚠Warning **The system will record the operation content of each user to facilitate the responsibility tracing; therefore the password shall be kept strictly confidential and carefully managed and be kept away from irrelevant personnel.**

3.2.3.1 Login of super user, system debugger and system administrator:

Super user, system debugger and system administrator may login in the system by two ways.

1. Login in through standard USB keyboard. Pop up the login window by pressing Ctrl, Alt and Del keys simultaneously (as shown below).



Figure 3-10 Example of USB keyboard

2. Press "*" key at the left bottom corner of the panel, and pop up the login window.

✧ **Login operation**

Under not-logged-in state, press CTRL、ALT+DEL on USB keyboard simultaneously, or press "*" key at the left bottom corner of the panel, and pop up the password input window (as shown below). Press ENTER key on USB keyboard or "OK" key on the panel keyboard after entering the password.



Figure 3-11 Password logging window

Friendly Reminder In order to keep confidential, "＊" will be displayed in the input box when entering any key value. After login-in, panel keyboard will be opened at the same time and KEYBOARD indicator light on the panel will be lightened.

✧ **Log out**

Under logging state, press CTRL, ALT+DEL keys on USB keyboard simultaneously, or press "*" keys at the left bottom corner of the panel,and pop up the inquiry window. Select ENTER. The system logs out.

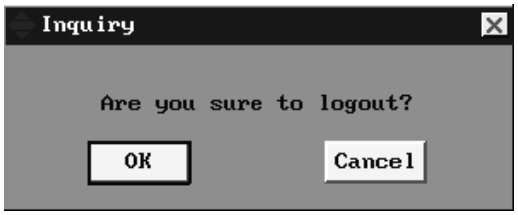


Figure 3-12 Inquiry window of log out

3.2.3.2 The watchman logins in via panel keyboard

The watchman can login in directly via panel of the control unit and it is only required to operate the panel.

✧ **Login operation**

Under not-logged-in state, press KEYBOARD on the panel, pop up the password input window and enter into the password according to the numeric keys on the panel keyboard. Press ENTER to confirm after inputting the password and KEYBOARD indicator light is lit at the same time.



Figure 3-13 Watchman login interface

✧ **Log out**

Under logging state, press KEYBOARD key on the panel, and the system will exit the logging status and KEYBOARD light goes off.

Friendly Reminder Under logging state, the system will log out automatically if it is inactive within 3 minutes (no key is pressed and the mouse does not move).

Attention Under not-logged-in state, the user may only execute "MUTE" operation and other operations are not allowed.

3.2.4 Special function keys of the system

The system adopts the standard USB keyboard compatible with PC and defines the following special function keys. The function keys corresponding to keyboard are set on the panel keyboard and the specific contents are as follows:



Function keys	Shortcuts	Corresponding panel keys
F1	Switch to main setting interface	Menu
F2	Switch to alarm interface	F2
F3	Switch to shielding inquiry interface	F3
F4	Switch to single-point start / stop interface	F4
None	Switch to start-up quickly interface	F5
F5	Copy cells in the spreadsheet	Copy
None	The button is temporarily useless.	F6
F7	Switch to ID inquiry interface	None
F9	Paste cells in the spreadsheet	Paste
Ctrl+Alt+Del	Switch to login in interface or log out interface	*
Ctrl+Space	Switch to Chinese input method or exit Chinese input method	#
Del	Delete text characters at the right side of the cursor	None
Backspace	Delete text characters at the left side of the cursor	BACKSPACE

Friendly Reminder The above special function keys are not active under all conditions. The main function keys active currently will be scrolled on the status bar (see the panel layout diagram for its position) at the lower end of the main interface.

Friendly Reminder The panel keyboard is under digital input state normally. It is switched to phonetic alphabet input state, letter input state in proper order and returned to digital input state after pressing "#" key. Refer to the interface prompt box for specific states.

Attention Under fire alarm and feedback state, the system administrator is not allowed to enter into the setting interface. This is because the system decides

emergencies have been detected and must be disposed preferentially. At this moment, F1 key is in vain. However, the system debugger and the super user may enter into the setting interface under fire alarm and feedback state as the system decides it is under debugging or maintenance state currently.

The alarm interface will pop up in case of new alarms (including fire alarm and faults), no matter what kind of operator is in the non-alarm interfaces, such as setting interface. Then only the system debugger and the super user may re-enter into the setting interface.

Start-up quickly interface:

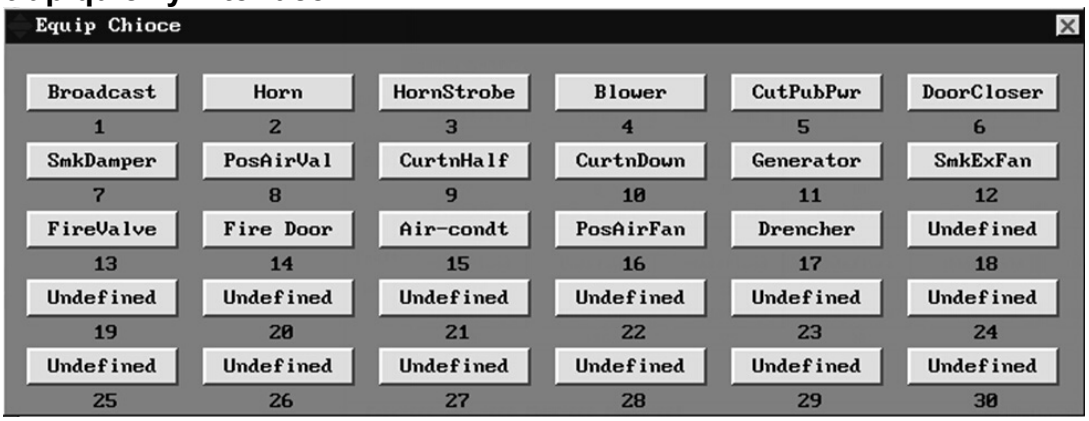


Figure 3-14 Start-up quickly interface

Under start-up quickly state,press ▲, ▼, ◄, ► or TAB key switch to the need to start-up the device type. In addition,press corresponding numerical keys on the panel and press ENTER key can also achieve the above functions. The system will enter into the interface as follows :

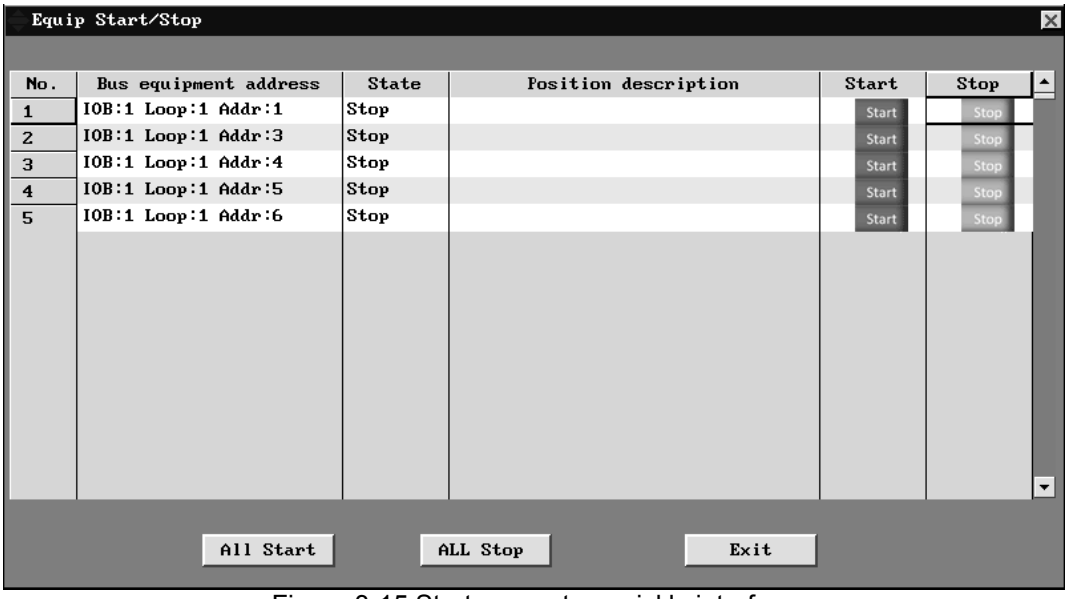


Figure 3-15 Start-up or stop quickly interface

Press S or STOP key to complete the corresponding operation.

3.2.5 Input of characters

The system support three Chinese input methods: Quanpin input method / zone bit code input method / T9 input method

Switching method:

Ctrl+Space (space key) ------ Switch to Chinese input method or exit Chinese input method

Shift + Space (Space key)------Switch over Quanpin input method/zone bit code input method

Zone bit code input method is cancelled when the panel keyboard is used for operation only. Press "#" to switch over digital input/T9 input method/alphabet input.

3.2.5.1 Quanpin input method:

- ✧ Only support word input, not support word group input;

Enter rightful phonetic alphabets and press SPACE key to prompt the lookup floating window (as shown in Figure below);

- ✧ Select according to word number 1-9 and press + and - keys to turn pages for the lookup character window;
- ✧ Only support the mainland Standard Chinese phonetics.



Figure 3-16 The character input interface for system renaming

3.2.5.2 T9 input method

- ✧ Only support word input, not support word group input
- ✧ Enter rightful phonetic alphabets and press "0" key to prompt the lookup floating window
- ✧ Select according to word number 1-9 and press ← and → keys to turn pages for the lookup character window

Chapter 4 System Configuration Details

This chapter will describe operation of the submenus related to the system configuration including system setup, bus setup and linkage setup. The following figure is the list of menu setup.

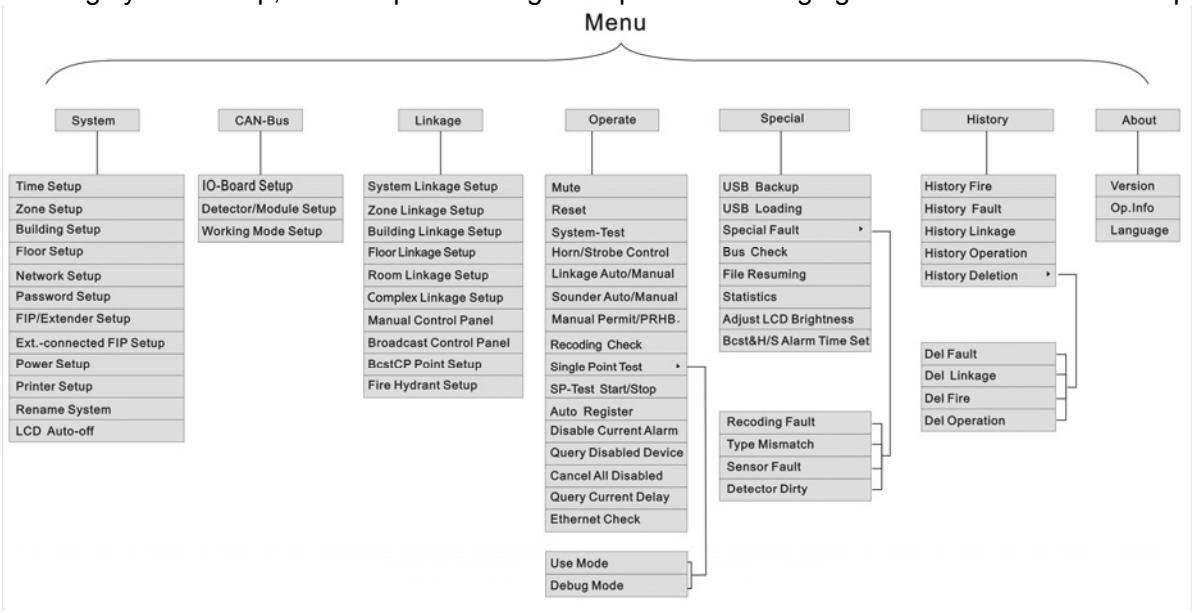


Figure 4-1 List of menu setup

4.1 System setup

Click on SYSTEM SETUP menu and pop up the submenu, as shown in Figure below:

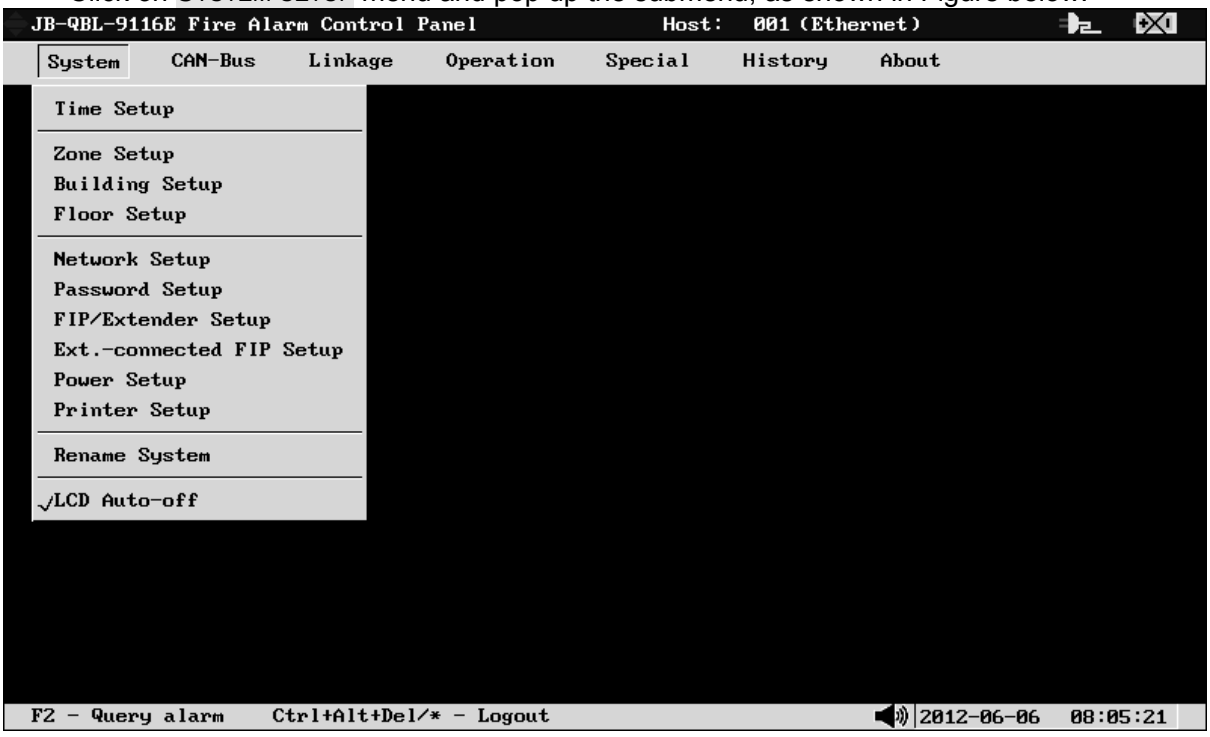


Figure 4-2 System setup menu

4.1.1 Time setup

The time setup interface is as follows: enter into proper date and time, click the OK button, and the system will save the time set by the user.

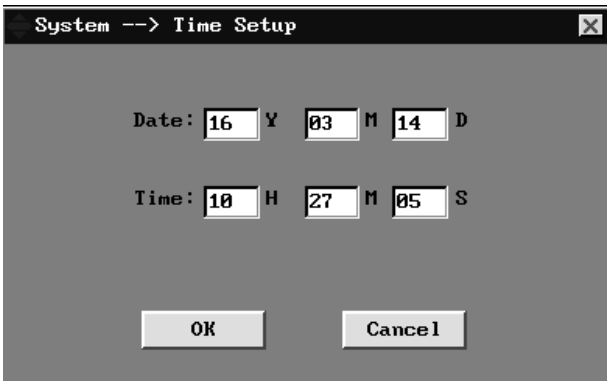
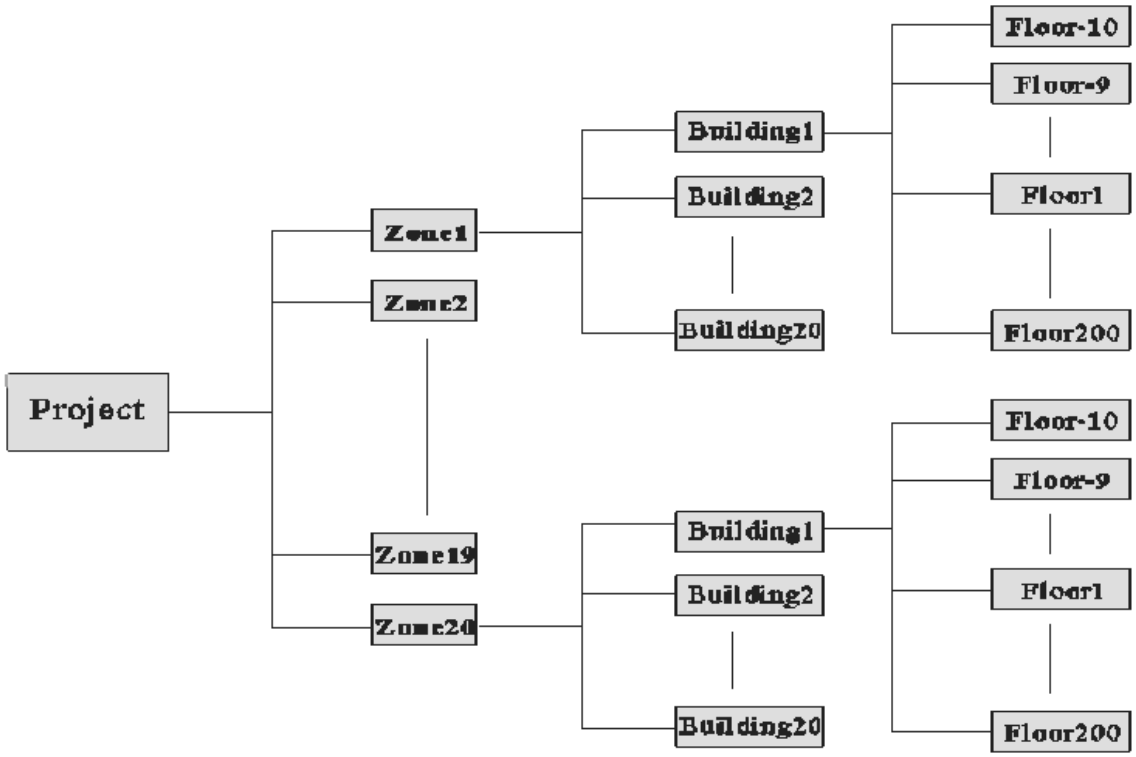


Figure 4-3 Time setup interface

Attention In the networking system of multiple hosts, as the host time is required to be the same, all hosts in the system will take time of the concentrator as criterion. This means other hosts will align with the time setup of the concentrator automatically and synchronously, the system time will be synchronized to time of the concentrator even if other hosts have set the time. Therefore, only the concentrator has the effective time setup function in the networking system.

4.1.2 Zone setup, Building setup, floor setup

The setup of building and floor is to familiarize the system with the application-engineering environment. The whole area governed by the system is logically partitioned as follows by the 3 geographic orientation setup:



The system can manage maximum 20 fireproofing zones, 20 buildings in each zone,,with each building having -10-200 floors. For a certain engineering, effective buildings and floors are required to be registered by clicking on the registration column in the corresponding form; "√" means registered, "×" means unregistered.

Attention The zone, building and floor setup shall be carried out at the beginning of engineering commissioning, as other setups all base on these data. The problem of skip floor can be solved by floor registration, that is, some of the buildings may not have a certain floor, like 4F, thus the registration of that floor can be cancelled

and the system will consider 3F and 5F are adjacent and all linkages can be scrolled normally.

- ✧ Zone setup:the zone can be named in "position description"; the initialization value in the figure is "zone 1-N".

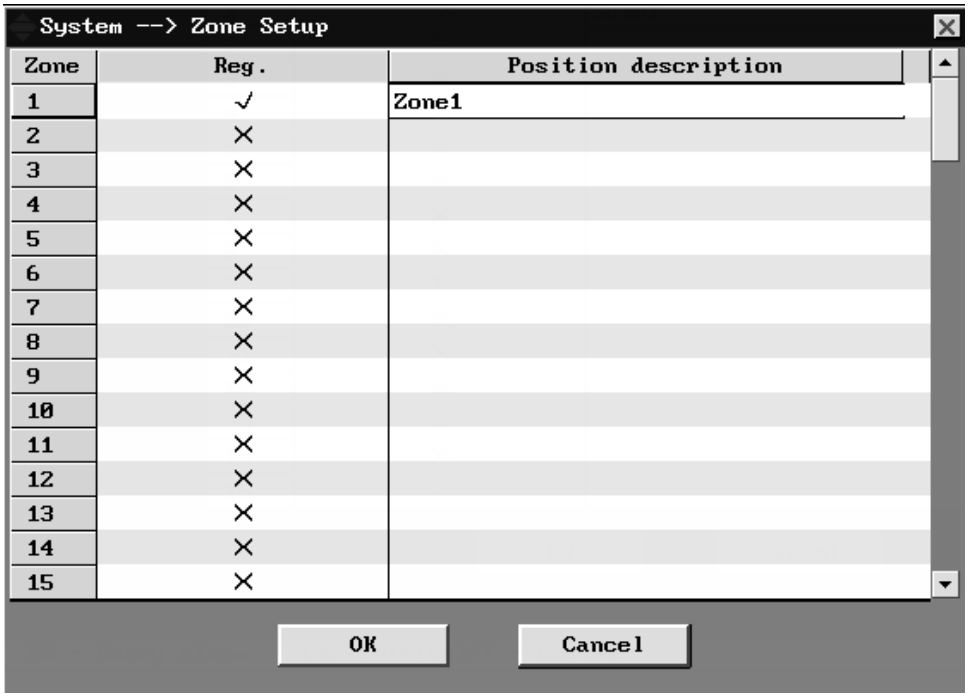


Figure 4-4 Zone setup interface

- ✧ **Building setup:** the building can be named in "position description"; the initialization value in the figure is "building 1-N".

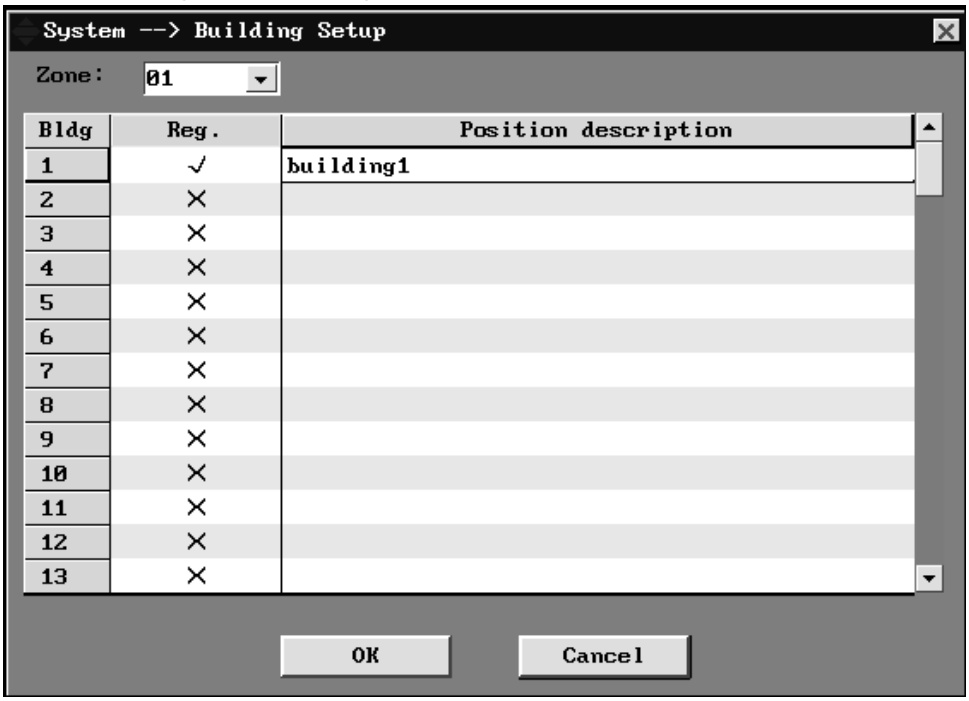


Figure 4-5 Building setup interface

- ➢ **Floor setup:** press OK button to save the setup and exit; press cancel button to retain the original setup and exit.

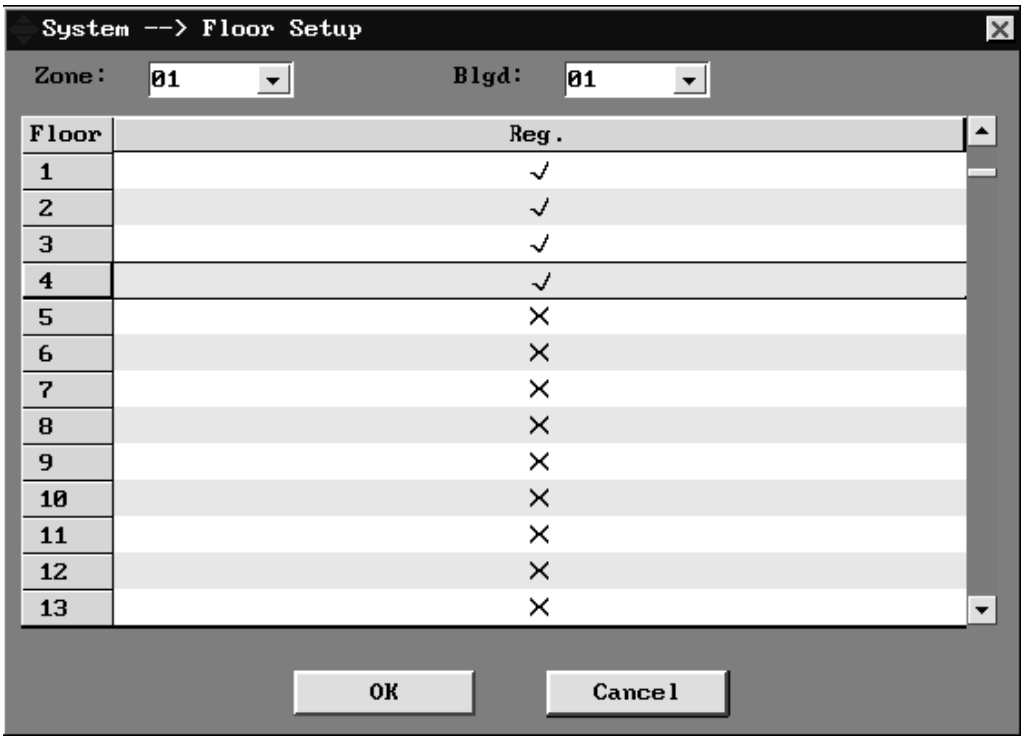


Figure 4-6 Floor design interface

Friendly Reminder The building can be renamed in the "position description" column in the form of building setup, which makes the alarm message easier to read, for example, if building 1 is named as "science building", the alarm message would be changed as follows:

Fire alarm at room 28, F8, building 1→**Fire alarm at room 28, F8, science building**

If the location information of each detector or module shall be completely independent, the corresponding position description of each detector or module can be entered at the **"detector/module setup"** interface. For specific methods, see the setup description of **"detector/module setup"**.

Attention If a certain floor of the building is used as equipment floor (or mezzanine), it can be ignored during floor setup. The scroll-for-alarm of equipment floor is typically affiliated to an adjacent floor. The detector or module floor at the equipment floor can be entered via position description of detector or module. For example, if an equipment floor is between 2F and 3F of the building and is affiliated to 2F, the location of detectors at the equipment floor can be set as 2F with the position description of "equipment floor between 2F and 3F...".

Warning **The building and floor setup must be carried out prior to other setups, otherwise corresponding alternatives are unavailable at the time of linkage setup and other operation interfaces. The incorrect building and floor setup may cause wrong scroll-for-alarm or linkage.**

4.1.3 Network setup

The system provides two kinds of interconnection ways: CAN Bus and Ethernet. It can support 20 controllers to be interconnected by CAN Bus as well as 254 controllers to be interconnected by Ethernet. Due to requirements of over-host linkage, the fire alarm message shall be transmitted to the concentrator or other regional units in the network simultaneously, so the networking must be carried out. The alarm messages will be only transmitted to the hosts registered on the local machine with passive receiving as the receiving mode, the registered host displays the alarm message it receives.

During networking, time of the concentrator (host 1) will be taken as the criterion for the network time. Time of all hosts in the network will be changed as time of the concentrator

changes.

CAN Internet:

The transmission rate set for all hosts in the network must be the same, the networked hosts must be acknowledged and the host number shall differ from each other. The Network setup interface is as follows:

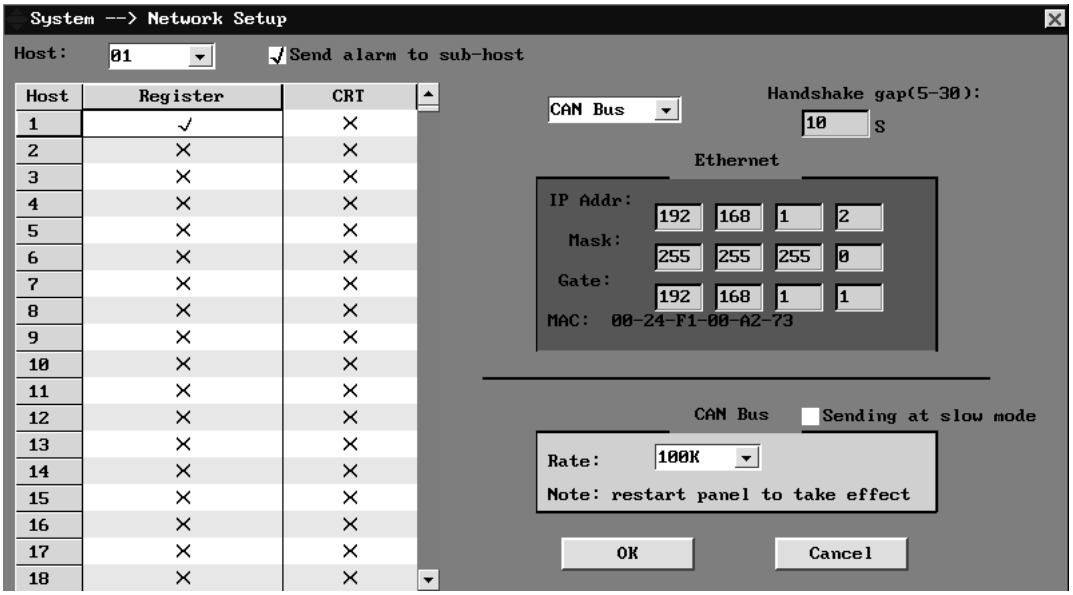


Figure 4-7 Network setup interface with CAN

Friendly Reminder After modification of Network setup information, the machine can operate normally only after power-on again.

Modifying method: select address of the host in drop-down box of "Host number", click the "Info Share" and the left blank box will display "√", select "CAN " in the Network Md options,then click on drop-down box of "CAN transmission rate" and select the transmission rate of networking bus, and finally click on the corresponding "Register" column on the networked hosts to display "√". Then press OK button to save the setup and exit, otherwise press Cancel button to retain the original setup and exit.

Attention The transmission rate set for all hosts in the networking system must be the same! After setup of the networking transmission rate, the host must be restarted to take effect!

Friendly Reminder If the host under different rates is connected into the network, no hosts (including other hosts with the same transmission rate) will provide normal communications. Therefore, for the networking system with multiple hosts, the networking bus will not operate normally during the process of setting transmission rate for the hosts one by one and the system networking returns to the normal condition after the same transmission rates have been set for all hosts.

Selection of networking transmission rate.

10K, 20K, 50K and 100K can be selected as the networking transmission rate. The rate is not the faster, the better and shall be selected based on the following situations:

- ✧ Number of networked hosts
- ✧ Length of networked bus (distance between hosts)
- ✧ Type of networking transmission line

➢ **Number of networked hosts**

The greater the number of networked hosts, the larger the volume of transmitted data on the bus. Therefore, if the networked hosts are large in number (generally greater than 5), it is suggested to use a higher communication rate, such as 100K.

➢ **Length of networked bus**

The higher the transmission rate, the smaller the maximum transmission distance of the bus. The lower the transmission rate, the better the transmission interference immunity of the

bus, the higher the reliability. It is suggested to use a lower transmission rate for the transmission distance greater than 1000m.

For the application with larger length of networked bus and great number of networked host, that is, length requirement and number requirement are contradictory, it is suggested to give priority to length requirement and use lower transmission rate. If the data reliability cannot be assured, the number of repeated attempts of the system to send data will be increased, which causes the data volume to further increase.

Attention The bus transmission distance refers to the distance between two most remote hosts, as shown in the following figure:

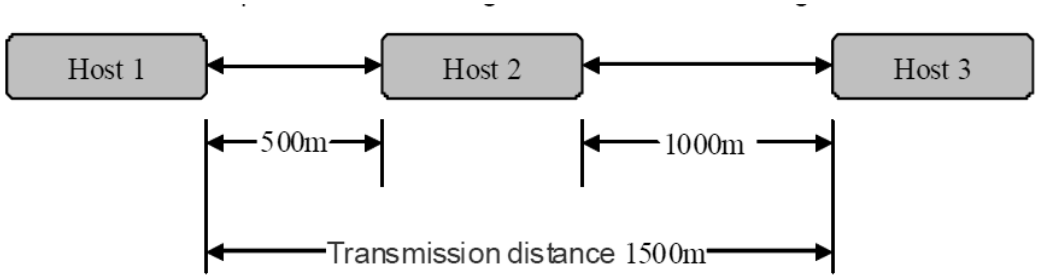


Figure 4-8 Schema of transmission distance

- **Type of networking transmission line**

The commonly-used connecting lines consist ① shielded twisted pair, ② ordinary twisted-pair, ③ shielded line, ④ common wire and otherwise. By our test, the effective transmission distance of ① and ② under a transmission rate of 100K reaches about 1500m～2000m and 3000m～4000m under a transmission rate of 20K, while the transmission distance of ③ and ④ is only 1/5～1/3 that of ① and ②.Therefore, it is suggested to use the ordinary twisted-pair as the networking line and to use the shielded twisted pair for the applications with more external disturbances (for example, many power cables available inside the cable trough or with high-power radio transmitters nearby).

To sum up, the transmission rate shall be selected properly based on networking distance and host number of the engineering. Then select proper transmission line according to the transmission rate. In normal applications, generally use the twisted pair to connect 2-5 hosts, with a transmission distance less than 1000m and a transmission rate of 20K.

Friendly Reminder The number of transmit-receive packages on the bus may be observed by the menu of "special operation" – "bus quality inspection". If both numbers differ greatly, it means the success rate of communications is relatively low, and the transmission rate shall be reduced or the transmission environment shall be improved.

The networking of 254 hosts is achievable on the system. The abnormity of any host in the network will not cause fault of the overall system. All hosts share all alarm messages (including fire alarm, request, feedback and fault) over the network.

Attention As the concentrator in the network, host 1 will not only provide a time reference, it will also support all network command operations. Therefore, a host must be set as the concentrator in the network.

The hosts involved in the network must be registered and each host must be aware of the online hosts over the network.

Warning **The connecting line of networked host must be of serial connection; star connection or ring connection is prohibited! Otherwise, the communication will become abnormal!**

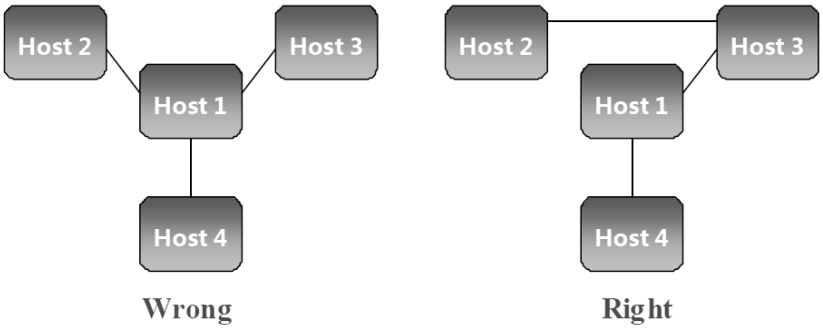


Figure 4-9 Connection schematic diagram of host networking

Ethernet Internet:

The networked hosts must be at the same net work segment. It must be acknowledged that which hosts are in the network. The host number and IP Address should be differentfrom each other. And each networked host equals as a personal computer. Control panel trans data with router or HUB. This kind of connection is convenient to manage and easy to expand but it needs special network equipment as the core of the interconnection, it will need more cable, and high reliability requirements for core equipment.

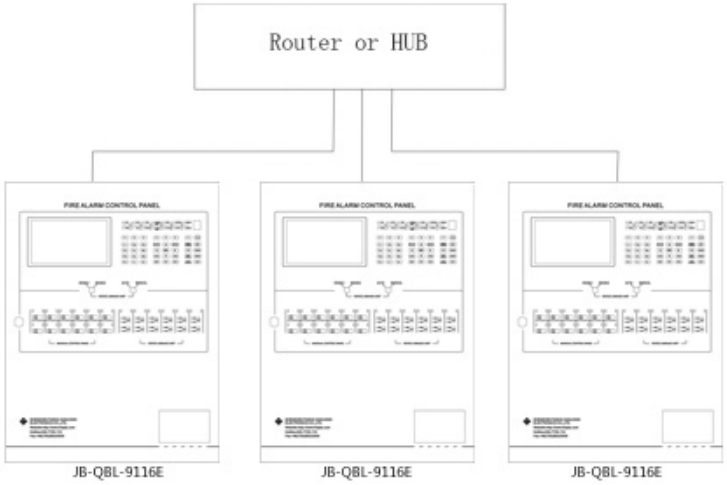


Figure 4-10 Networking Mode

The Network setup interface is as follows:

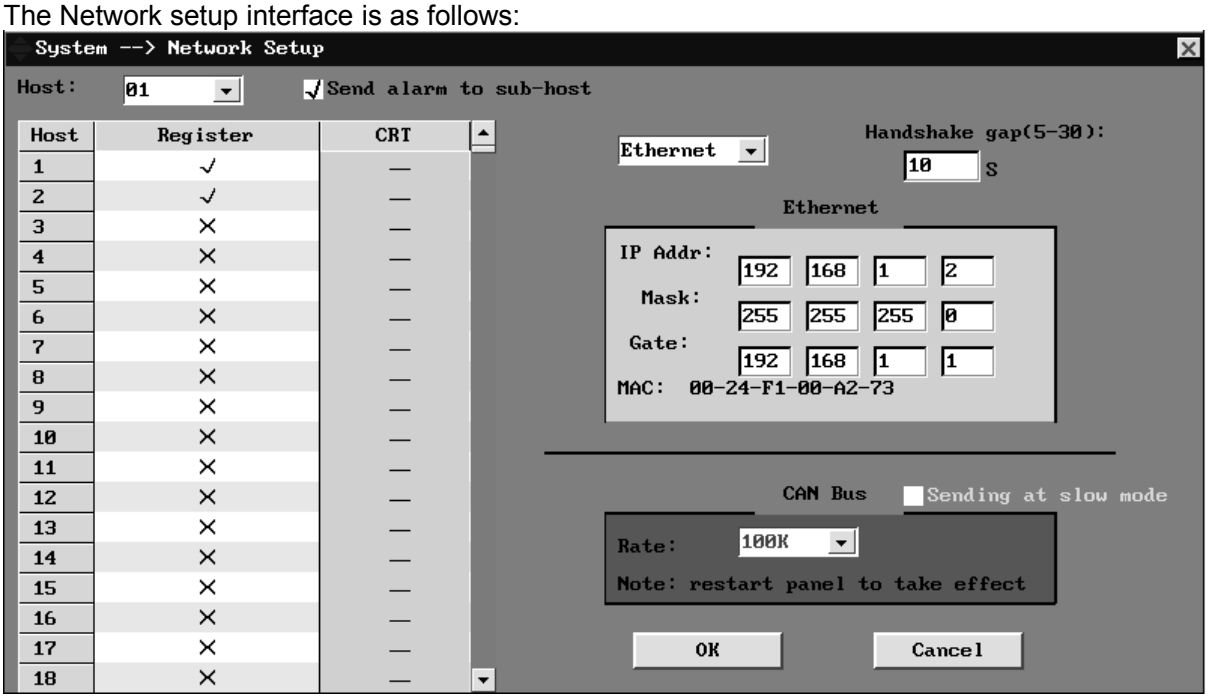


Figure 4-11 Network setup interface with Ethernet

Modifying method: First ,select address of the host in drop-down box of "Host number", click the "Send alarm to sub- host" and will display"√" at the left blank box ,select "Ethernet" in the Network Md options, set different IP Addr as "192.168.1.1" and set the same Mask as "255.255.255.0"at each control panel. It recommends use the router's Gate if the IP Addr and the Gate are in the same segment.

4.1.4 Password setup

The password setup interface is as follows:

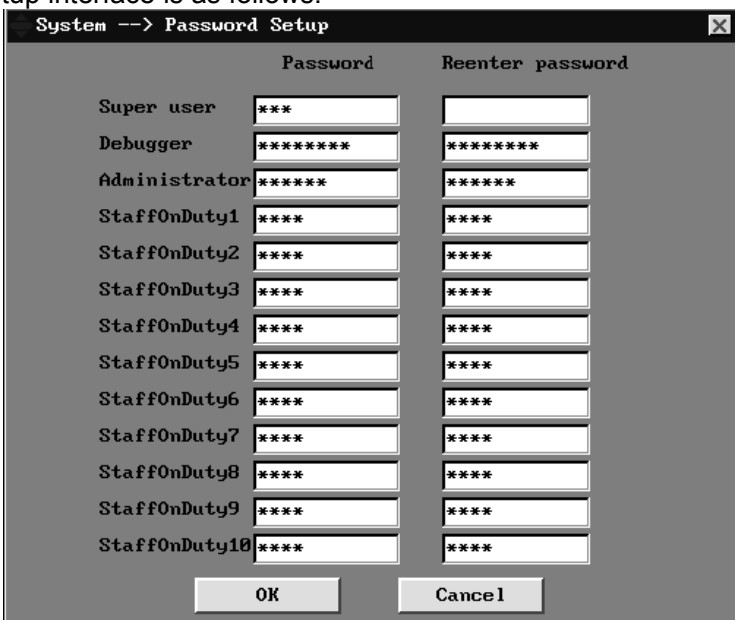


Figure 4-12 Password setup interface

Modifying method: enter into the new password twice in "New password" and "Confirm". Then press OK button to save the setup and exit; press Cancel button to retain the original setup and exit. If the two newly-entered passwords are different, the system will reject the new password and retain the original password setup.

Attention The users of each level may change passwords of the same and lower levels. For example, the system administrator may change its password and the passwords of all watchmen. However, the system administrator is not allowed to change the password of the system debugger. This is to ensure there is a solution in case of personnel turnover or lost password.

Warning **The system will identify the current operator by the password entered and record all the operations. The record may be used as the basis of responsibility tracing in case of accidents. Therefore, users of each level must keep the passwords in confidence and from leaking.**

Friendly Reminder Initial password for the system administrator is "111111". The 10 groups of initial passwords for watchmen are "0000", "1111" … "9999". After system delivery, please change these passwords into those easy to memorize by yourself and hard to guess by others. The system administrator is responsible for assigning passwords for the watchmen, which shall differ from each other, to facilitate the identification.

4.1.5 FIP/Extender setup

The indicating panel is the terminal display unit of the fire alarm control system. It is divided into two types: 485 bus-indicating panel and detector-indicating panel.

485 bus of the system can be used to manage 99 indicating panel equipment at most. The bus-indicating panel can also be connected on the detector bus; however, it is required to occupy the bus address.

The 485-bus indicating panel setup panel is as follows; refer to instructions on detector module setup for indicating panel setup of detector bus:

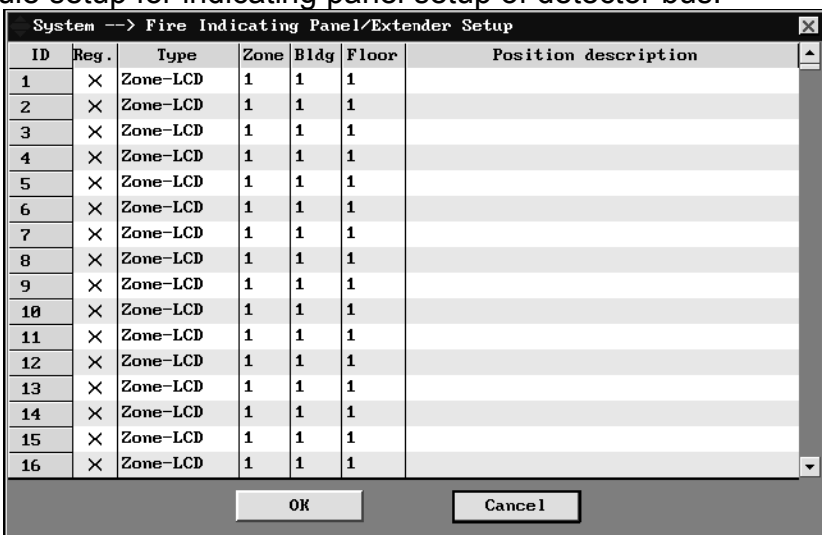


Figure 4-13 Indicating panel setup interface 1

Find the address of 485 bus indicating panel to be registered. Click on "Registration" column to show "√". Double click "Type", "Building" and "Floor" columns and select type, building and floor in the drop-down box. Enter description information at "position description" column.

Then press OK button to save the setup and exit; press cancel button to retain the original setup and exit.

The following shall be set up for 485 equipment:

- **Type** - 485 equipment is divided into the following types:
  - Building indicating panel - Chinese (building indicating panel in Chinese)
  - Floor indicating panel - Chinese (floor indicating panel in Chinese)
  - Building indicating panel - digital (digital building indicating panel)
  - Floor indicating panel - digital (digital floor indicating panel)

The indicating panels can be divided into building indicating panel and floor indicating panel by working mode that is a certain indicating panel can display all alarm messages of the whole building. It expands the function of floor indicating panel (JB-FSD-982 fire indicating panel).

- **position description** - each indicating panel/expansion box can enter position description information independently, as the location display at alarm. The position description can contain 20 Chinese characters or 40 English characters.
- **Building and floor** - if the type of indicating panel is "building indicating panel", the floor information can be deemed as location display information only when there is not fault alarm of position description.

If the fire indicating panels are large in number or long in connection, it is suggested to use the twisted-pair with large diameter and to use the shielded twisted pair for the applications with more external disturbances. The negative wire of 24V power supply of the fire-indicating panel shall be connected to 24V negative wire of the control unit to ensure normal and reliable communication. The joint shall be welded as much as possible. The specific wire diameter shall be determined per the construction environment. If the indicating panels are small in number and short in connection, the ordinary connecting line can be used.

4.1.6 EXT.-connected FIP setup

Refer to the "(4.1.5)FIP/Extender setup".

4.1.7 Power setup

The system can monitor the power supply and specify the power for the host. The power setup interface is as follows:

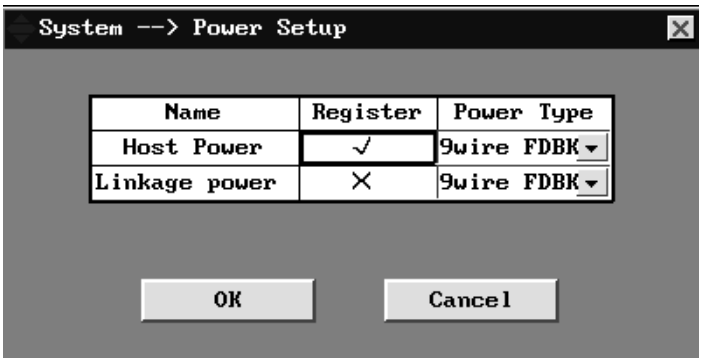


Figure 4-14 Power setup interface

Methods of modifying: click on "Registration" column of the corresponding power to show "√", press OK button to save the setup and exit, otherwise press Cancel button to retain the original setup and exit.

The user is not suggested to cancel the registration of host power supply unless special debugging is required.

4.1.8 Printer setup

The printer setup interface is as follows:

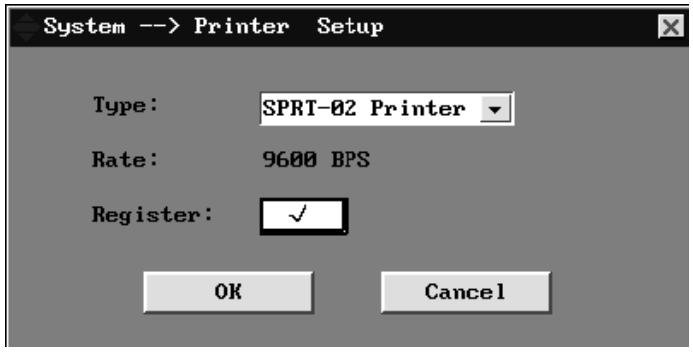


Figure 4-15 Printer setup

Method of modifying: the transmission rate of printer is fixed to 9600. Click on "Registration" column of the corresponding power to show "√". Press "OK" button to save the setup and exit, otherwise press "Cancel" button to retain the original setup and exit.

Friendly Reminder "SPRINTER-02" system is set as thermal printer. The jumper hat on the printer shall be removed or jump to one side. Its baud rate is set as 9600BPS.

4.1.9 Rename system

The system name in the title bar can be changed by selecting the function. The interface is as follows:



Figure 4-16 System rename interface

4.1.10 LCD Auto-off

If choose this function(" ✓ "is shown in front of the submenu) , LCD will shut off automatically after 5 minutes without system operation. Any key pressed or any move of the mouse, LCD will turn on again.

This function is to assure the longevity of LCD, so it's advised for the user.

⚠Attention If the system is in alarm (whether it's trouble or fire alarm), LCD Auto-off function will become invalid and LCD latches on. So dispose abnormity ASAP to ensure the longevity of LCD.

4.2 CAN-bus

The submenu of bus setup is as follows:



Figure 4-17 Bus setup menu

4.2.1 IO-Board setup

Modification: Choose IO-Board, click in "register", " ✓ "is shown. Press "OK" to save the setup and exit, or press "Cancel" to save the original and exit.The interface is as follows:

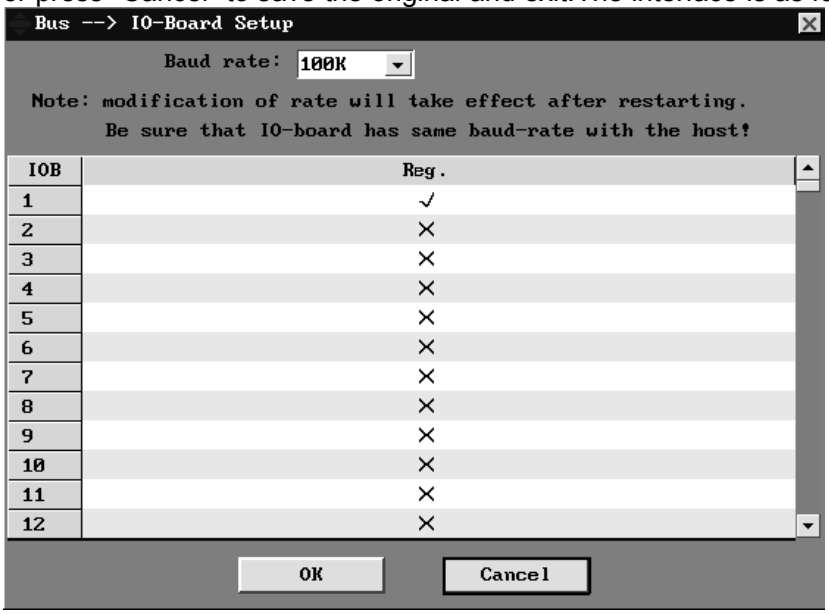


Figure 4-18 IO-Board setup

One host can manage 40 IO-Boards, the IO-Board connected in the system must register.

4.2.2 Detector/module setup

The setup interface of detector/module is a key and relatively complex one of the system. All detectors/modules controlled by the system can be set up in this interface.

The following section describes the line-by-line sheet setup of detector/module. As setup of the system imitates the spreadsheet of Windows operation interface, most of the operations are completed by the mouse, which operates drop-down box, horizontal scroll bar and vertical scroll bar. The spreadsheet allows the setup of detector/module to be simple, unified, intuitive and easy to understand.

Operating methods of the spreadsheet are exactly the same and similar to those of the microcomputer; therefore this manual will not describe each setup one by one in detail.

The figure below shows manufact type setup of detector/module:

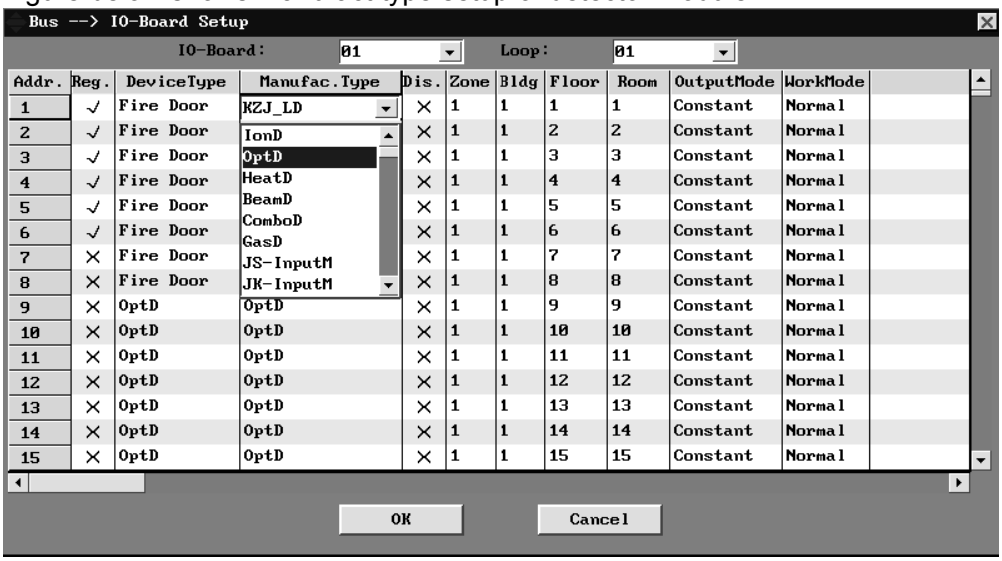


Figure 4-19 manufact type setup

The options of detector/module manufact type include:

Ion detector	Photoelectric detector	Thermal detector
Infrared detector	Combination detector	Gas detector
JK input module	Output module	JS input module
I/O module	Manual control button	Manual alarm button
KZJ-LD	Fire hydrant button	**Acousto-optic alarm apparatus**
Acoustic alarm apparatus	Light alarm apparatus	Bus indicating panel

The equipment type of detector is typically the same as its manufact type. The equipment type of module refers to the type of external equipment connected, wherein manual control button, manual alarm button, fire hydrant button, acousto-optic alarm apparatus, acoustic alarm apparatus and light alarm apparatus are special modules, and their equipment type is consistent with the manufact type.

As shown in the figure, the options of equipment type include interface ion, interface photo-electricity, temperature sensing cable and pressure switch; refer to Appendix 1 for the list of all equipment types available in the system currently. If the equipment to be accessed by the user is relatively special and is not covered by the list, it can be added by the function of "equipment type add". Refer to related instructions of "equipment type add" function for the specific operations.

The output mode refers to the mode of control of the control equipment by the module, which is only valid for modules of control type and not suitable for detectors and modules of non-control type.

If pulse output is used as the mode of module output, the driving signal at the module output end will switch off automatically after holding 5-10sec; in case of constant output, the driving signal will be maintained. Generally, the pulse output is used for the application of the equipment control end equipped with self-locking logic and is seldom used for other applications.

The zone number setup of detector/module is as shown in the following figure:

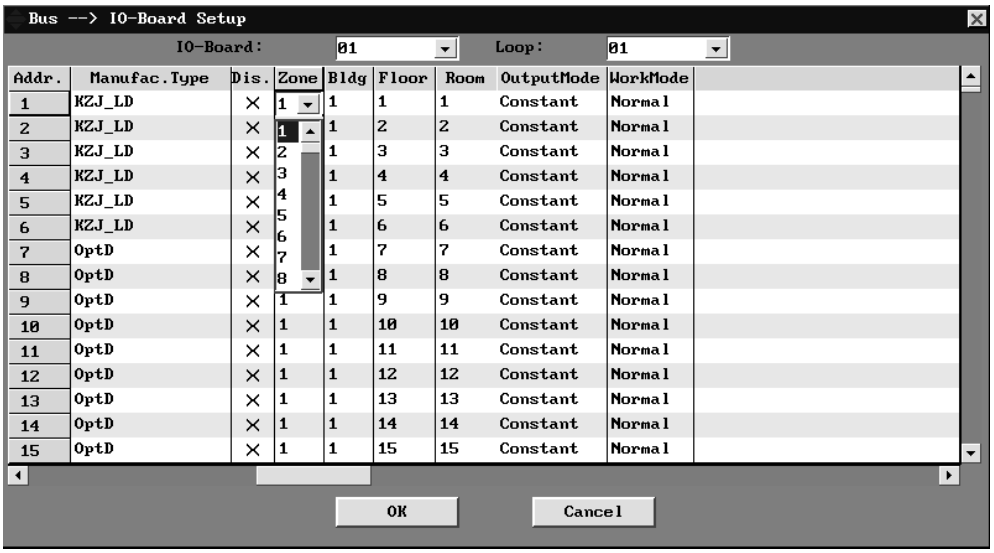


Figure 4-20 Setup of building number, floor number and room number

As shown in the figure, the building number is selected through the drop-down box and the input of floor number and room number is similar. The locations of detector/module can be described in detail by the character string of position description; otherwise, the setup information of building number, floor number and room number will be displayed.

The work mode setup of detector is as shown in the following figure:

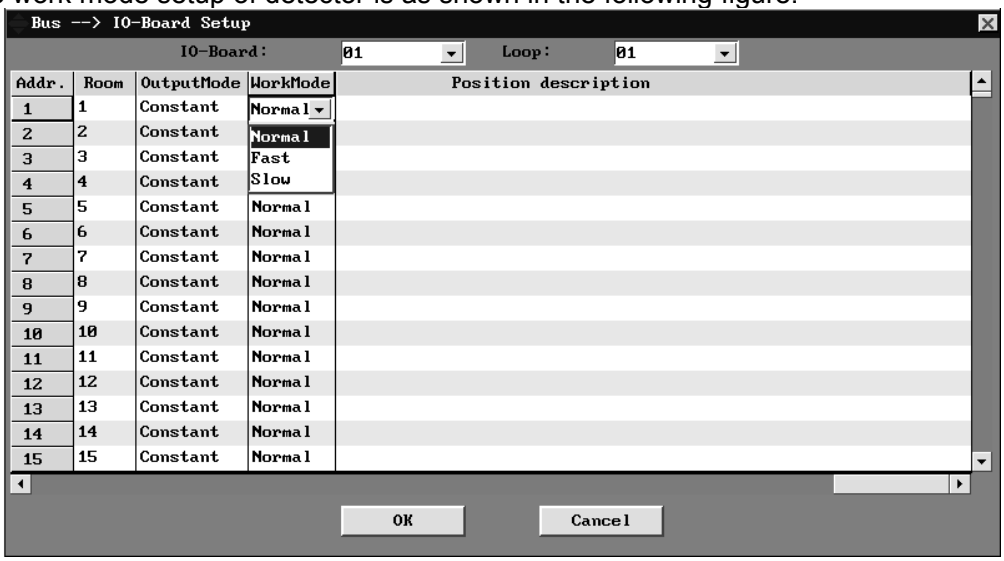


Figure 4-21 Work mode setup

The detectors in the system are provided with three work modes: normal, sensitive and stagnant. The detectors produced by our company possess extremely sensitive sensing property and thus it is suggested to adopt the normal work mode at ordinary circumstances. The other two work modes are suggested to be used at some special applications and it is "normal" mode by default.

The location descriptive information of detector/module is as shown in the following figure. As can be seen from the figure, the system initializes position description of each detector/module to blank and the user shall add or revise it as required.

If the position description has not been set, "building name + floor number + room number" will be displayed at alarm; the user may revise the position description, like "Middle Section of Corridor, East Side, 3F, Science Building, Guangcai Xintiandi", which will be displayed at alarm.

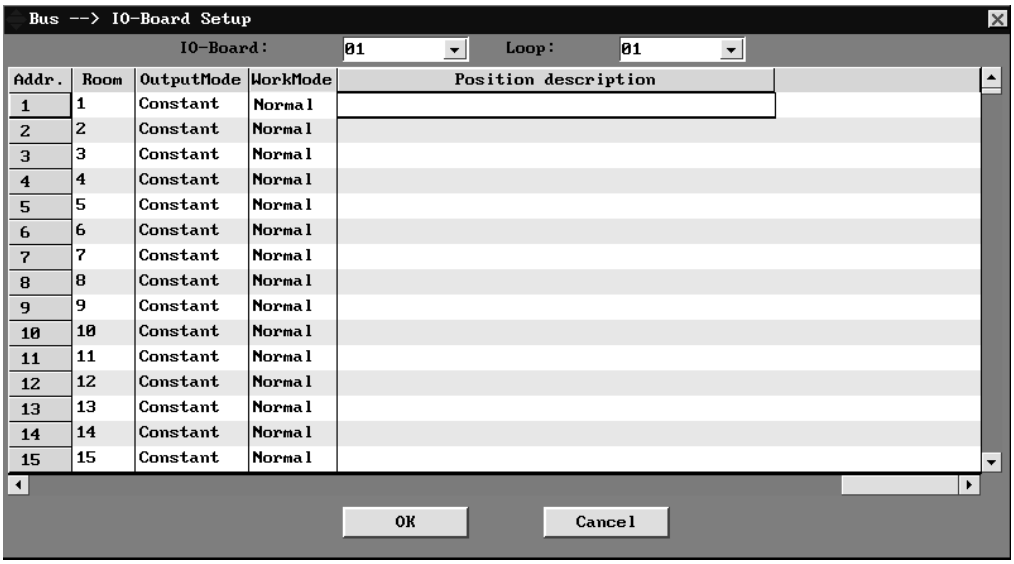


Figure 4-22 Position description setup

When "Pinyin input method" is prompted at the left bottom corner of the figure, it means "Pinyin input method" is in use currently and Chinese characters can be input by this. 10 Chinese characters or 20 English characters can be input into "position description" column for each detector/module, as their display information at the time of alarm output.

After "detector/module setup" is completed, press "OK" button to save the setup and exit, or press "Cancel" button to retain the original setup and exit.

As the contents required to be set in the detector/module setup window are plenty, the function of batch setting is incorporated to improve efficiency and quicken information setting.

The batch setting of detector/module is divided into batch setting row and batch setting column.

1. Batch setting row

Batch setting row refers to use of a selected row as the template and batch setting of equipment with consecutive address number, that is, the equipment at multiple consecutive addresses share the same equipment type, as follows:

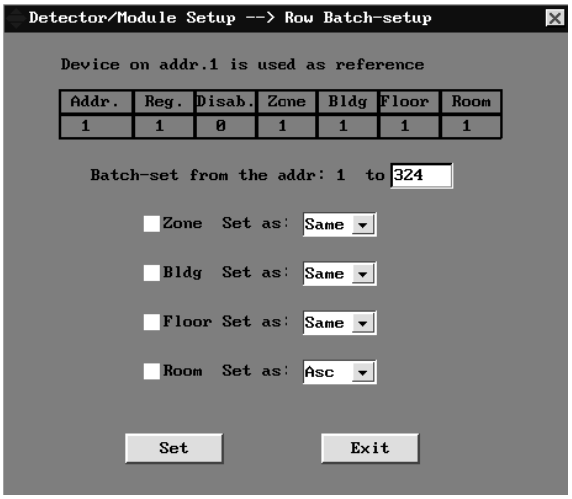


Figure 4-23 Batch setting row of detector/module

First, set the address end number required for batch setting on the template window; the start address is provided with the number of the address of the selected row (address 1 in this example); only zone number, building number, floor number and room number can be changed and set in the template window, equipment type and other property items shall keep the same as those of address 1; if zone number, building number, floor number and room number are not checked (boxes before them are not ticked), it means the original setting is not changed; if zone number is checked (box before it is ticked), it means the zone number is the same as that of address 1;if building number is checked (box before it is ticked), it means the building number is the same as that of address 1; if floor number and room number are checked (boxes before

them are ticked) and are set according to floor number and room number of address 1 and options selected in the drop-down list after it (i.e. "same", "ascending order" and "descending order"; "same" by default); if ascending order is checked in the drop-down list, the floor number of equipment at address 1 is 2, the floor number of equipment at address 2 is 3 and the floor number of equipment at address 3 is 4, and so on, which is also suitable for the room number. The issue of boundary value shall be noticed. If the floor number in ascending order reaches 200 and it is followed by equipment, then the floor number for subsequent equipment is 200. If the floor number in descending order reaches -10, then the floor number for subsequent equipment is -10. This is because the floor number is between -10 and 200. The boundary of room number can be disposed with the same method; the room number lies between 1 and 254. Confirm each parameter is correctly configured and then click on "Setup" button to update the list configuration information of detector/module setup. Click on "OK" button to save batch setting data, otherwise click on "Cancel" button.

2. Batch setting column

Batch setting column is supplementary to batch setting row, which refers to the batch setting of a single column; double-click column header requiring batch setting to generate window interface of batch setting column, as shown below:

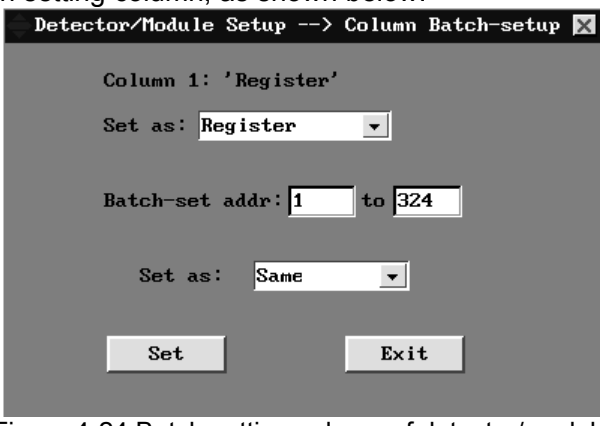


Figure 4-24 Batch setting column of detector/module

The setting interface is divided into three parts. The first part is to set equipment properties in the column (if the column header is equipment type, choose to set equipment type. If the column header is building number, choose to set building number). The second part is start address and end address of batch setting, with a range of address value of 1-324. The address number of batch setting column shall also be consecutive. The third part concerns the setting mode, namely "same", "ascending order" and "descending order". The equipment address number at the start address is considered as the starting point and the property value of each equipment is set according to different setting mode sequence setting properties in the first part, until reaching the end address.

Example 1: double click column header of equipment type and set "interface photo-electricity" for the first part, with start address 1, end address 324 and "same" setting mode, then the setting result is as follows: the equipment type of equipment at address 1 to address 324 is "interface photo-electricity".

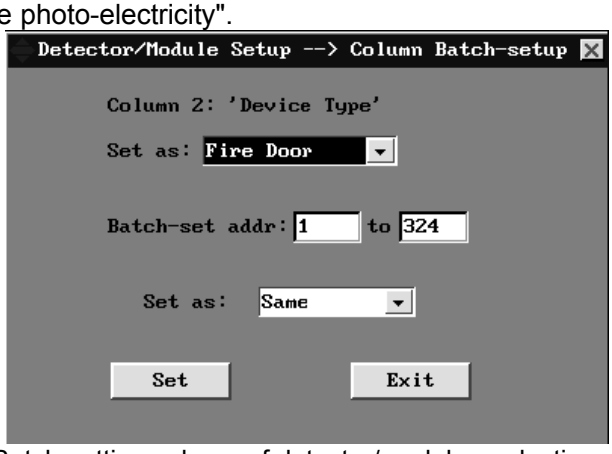


Figure 4-25 Batch setting column of detector/module - selection of device type

Friendly Reminder Other columns can be set in the same way.

4.2.3 Working mode setup

The function of work mode setup allows the user to change work mode of any equipment on the bus and can change work mode of all the 324 equipment on a circuit one-time.

The work mode setup interface is as follows:

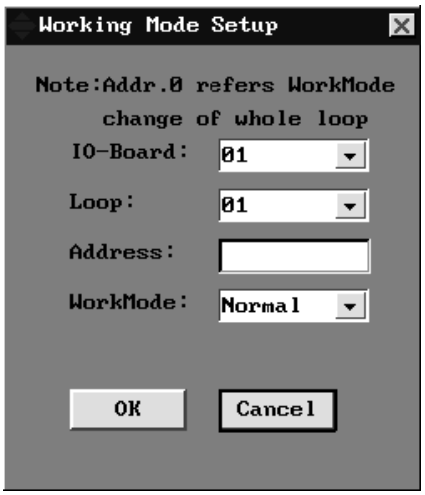


Figure 4-26 Work mode setup

Select interface board number, circuit number and work modes to be changed in the corresponding drop-down box; enter into address number of the equipment to be changed at "Address"; and then click on OK button, work modes of relevant detector/module will be changed and information of successful modification will be displayed.



Figure 4-27 Prompt of successful modification of work mode

If all equipment in a certain loop is required to be modified, enter 0 at "address".

The address value shall lie between 1 and 324, as each loop in the system can accommodate 324 equipment at most. If out of range, the system will give the following prompt:

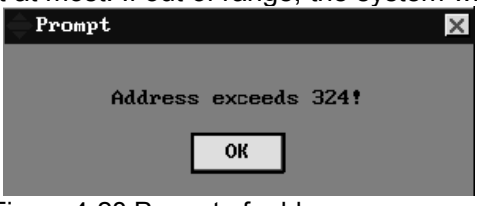


Figure 4-28 Prompt of address over-range

Click on OK and re-enter into correct address information.

4.3 Linkage

The linkage setup of this system adopts several unified man-computer interaction interface and is suitable for the linkage relation setup in different zones or different linkage logics. The goal is to reduce setup workloads of the user, facilitate the user to master setup methods and decrease the mal-operations by the user. The submenu of bus setup is as follows:

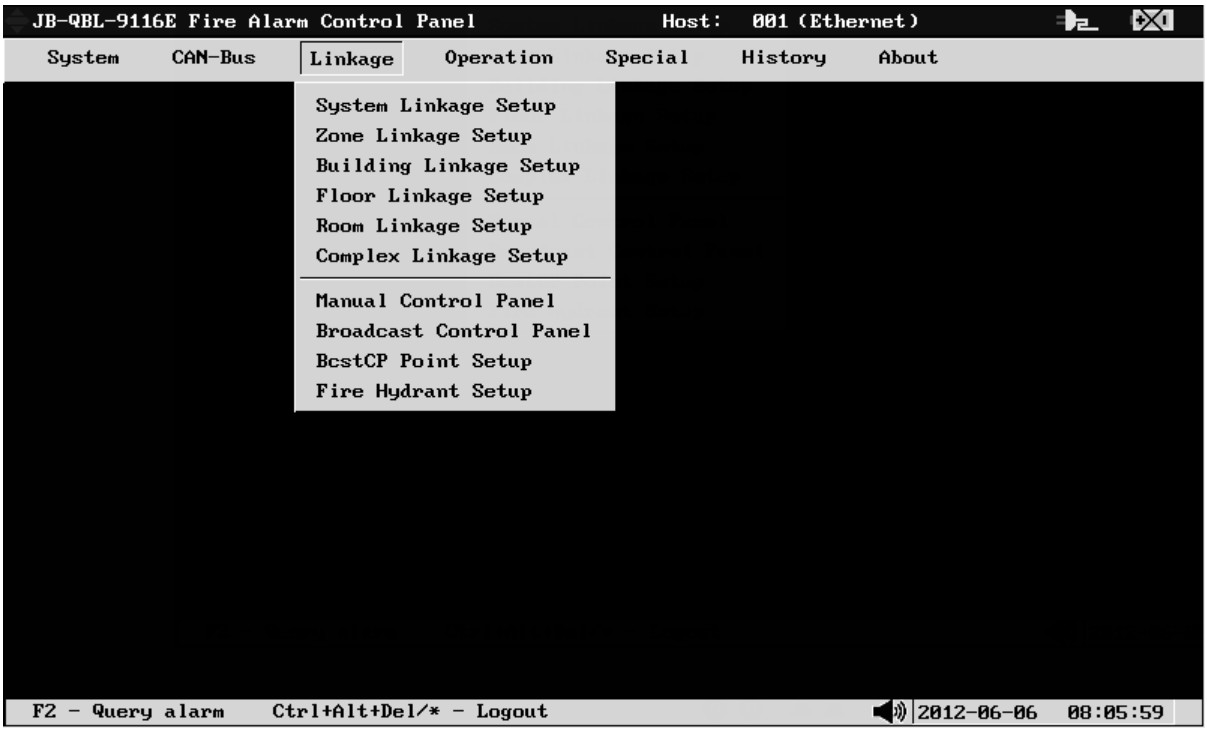


Figure 4-30 Linkage setup menu

4.3.1 System linkage setup

The following section gives a brief description of common issues of linkage setup with the system linkage as an example.The interface of system linkage setup is as follows:

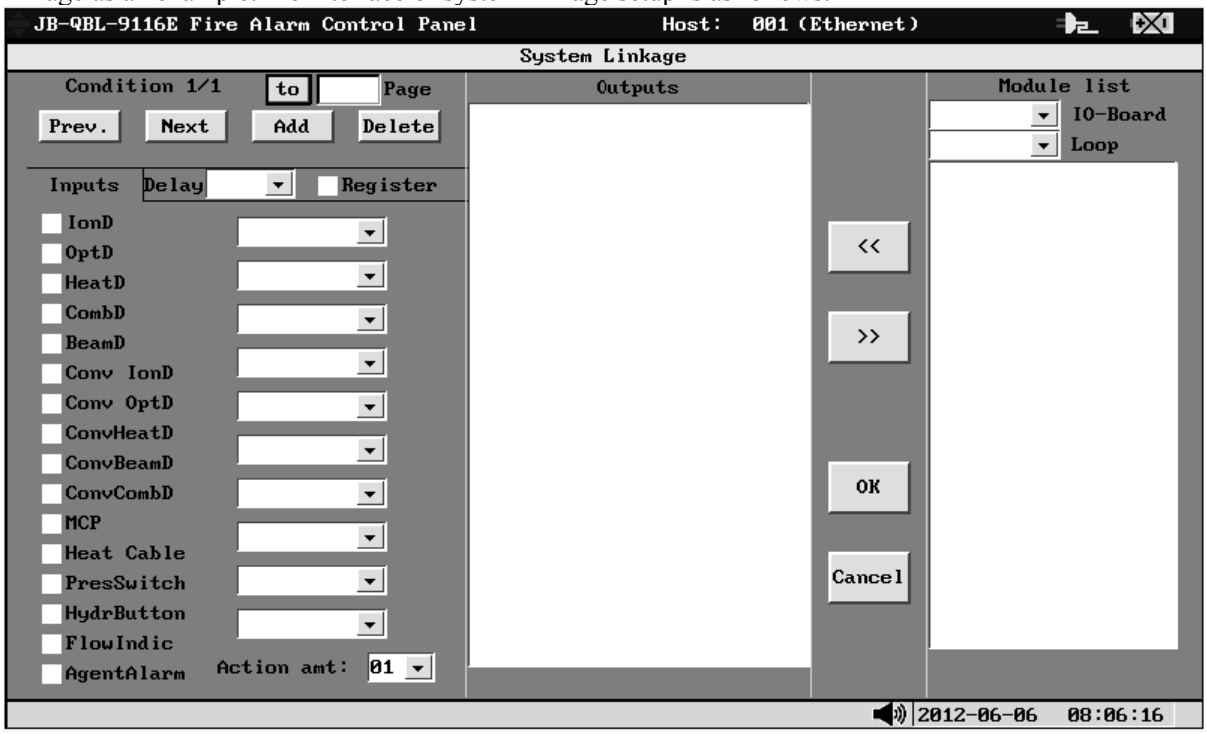
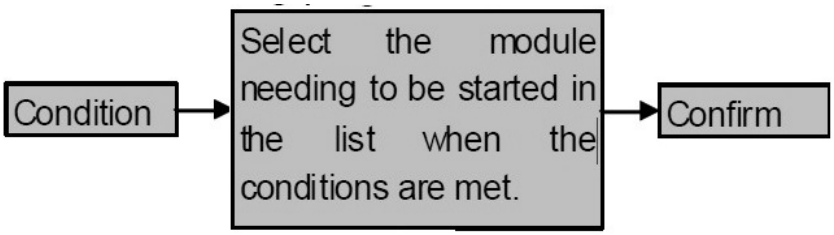


Figure 4-31 System linkage setup interface

The setup interface is divided into 3 areas: condition setting area, result output area and target selection area



Each page (i.e. display of the entire screen) corresponds to a linkage condition. The setup flow of a linkage condition is as follows:

Step 1: condition setting

Four buttons (Prev, Next, Add and Del) and a text input box are set above the condition setting area, which are used for inquiring, adding or deleting linkage conditions.

- Adding a linkage condition: click on Add button
- Deleting a linkage condition: click on Del button
- Viewing or editing the linkage condition on the previous page: click on Prev
- Viewing or editing the linkage condition on the next page: click on Next
- Viewing or editing a certain linkage condition: enter serial number of the linkage condition into the text box before "Pg", enter or click on To button

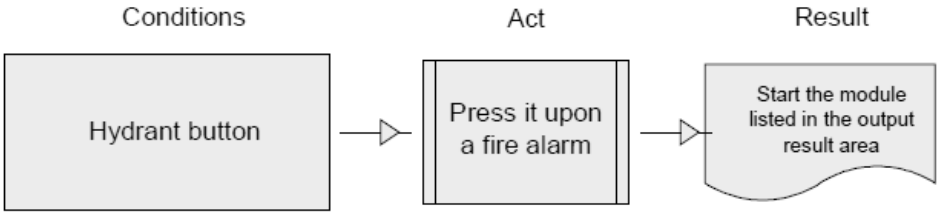
The system will display another linkage condition when any of the above operations is carried out. "Cond. 1/3" at top left corner of the display means currently there are 3 system linkage conditions and the first one is displayed at the moment. If the linkage conditions are large in number, enter into the page number to skip. If the corresponding modules of a linkage condition are multiple, the page switching may take 2-5s.

The edit area for current linkage condition is set below the condition setting area.

- "Delay": select the time interval between condition satisfied and action of module;
- "Reg": check the option to activate the linkage action on this page;
- "Input type": composed of check box at the left side and drop-down box at the right side. The relation between input type is "or";

"Fire QTY": the number of fires required to satisfy the conditions. For example, 01 means the conditions are satisfied when the alarms is generated at any 1 point. The system can achieve composite functions of multiple arbitrary alarms and the maximum composite number is 99.

Therefore, the linkage conditions in the above figure are as follows:



Step 2: select the module required to be started when conditions are satisfied

Click on a certain module in the list box and click on << button, to add this module into the result list area. Except for "manual control panel linkage setup", a linkage condition can be used to start multiple modules, therefore step 2 and step 3 can be repeated to add multiple output results.

The modules started by a condition are limited in number and a condition can be used to start 200 modules at most. If the number exceeds 200, the user must set another different number with the same conditions, to correspond to modules with numbers exceeding 200.

Check a module in the "Result list" and click on >> button to delete the module from the result list.

The display of result output column in the figure is as follows:

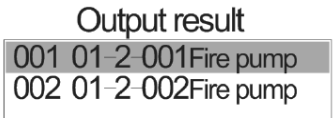


Figure 4-34 Output result

If it is indicated that the linkage condition is true, two modules (module 1 and module 2) will be requested for action. The two modules control fire pumps.

⚠Attention In the linkage interface, only the module address number can be selected, the equipment controlled by the module shall be set at the detector/module setup form.

Step 3: confirm

Press Confirm button and the system will save the linkage condition and exit the linkage setup interface. Press Add, Next or Prev to switch to another linkage condition setup interface to proceed. At switching over, the system will save the linkage conditions set just now.

The setup of a linage relation is completed after conducting the above 4 steps. The following section will present respective diagrams.

The operation of "delay" drop-down box is as shown in the following figure:

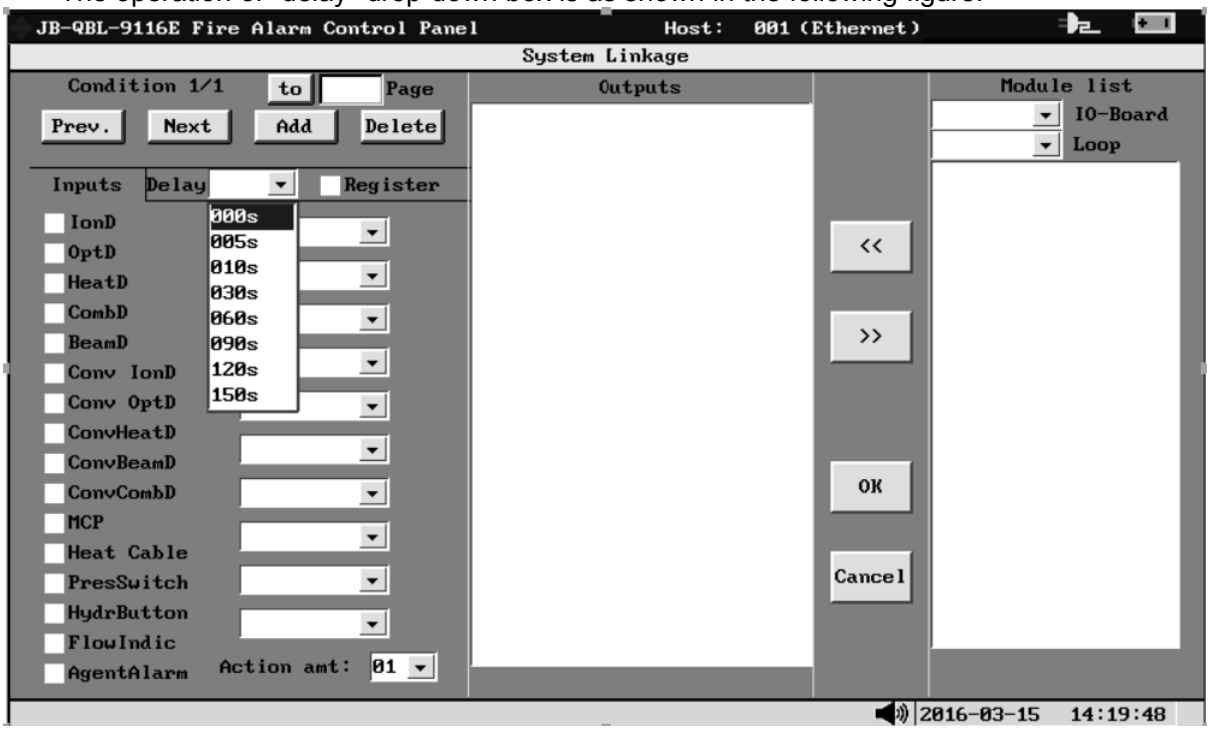


Figure 4-32 Delay selection

There are 8 time selections for delay: 0s, 5s, 10s, 30s, 60s, 90s, 120s and 150s.

Selection of input type, as follows:

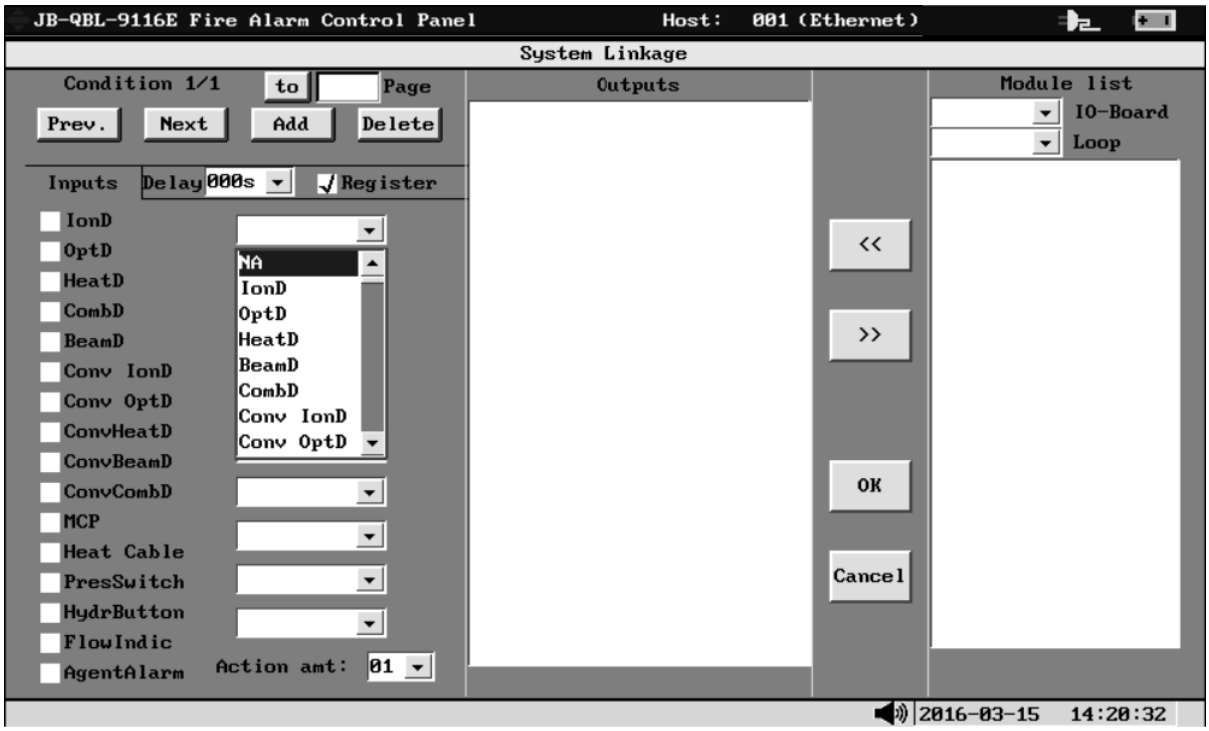


Figure 4-33 Selection of input type

The 5 types commonly used by the system are presented by check boxes and 4 drop-down selection boxes are given for selection of any equipment type. If the types to be selected exceed 9, a linkage condition can be set additionally, pointing to the same output results.

The selection of linkage alarms is as shown in the figure below:

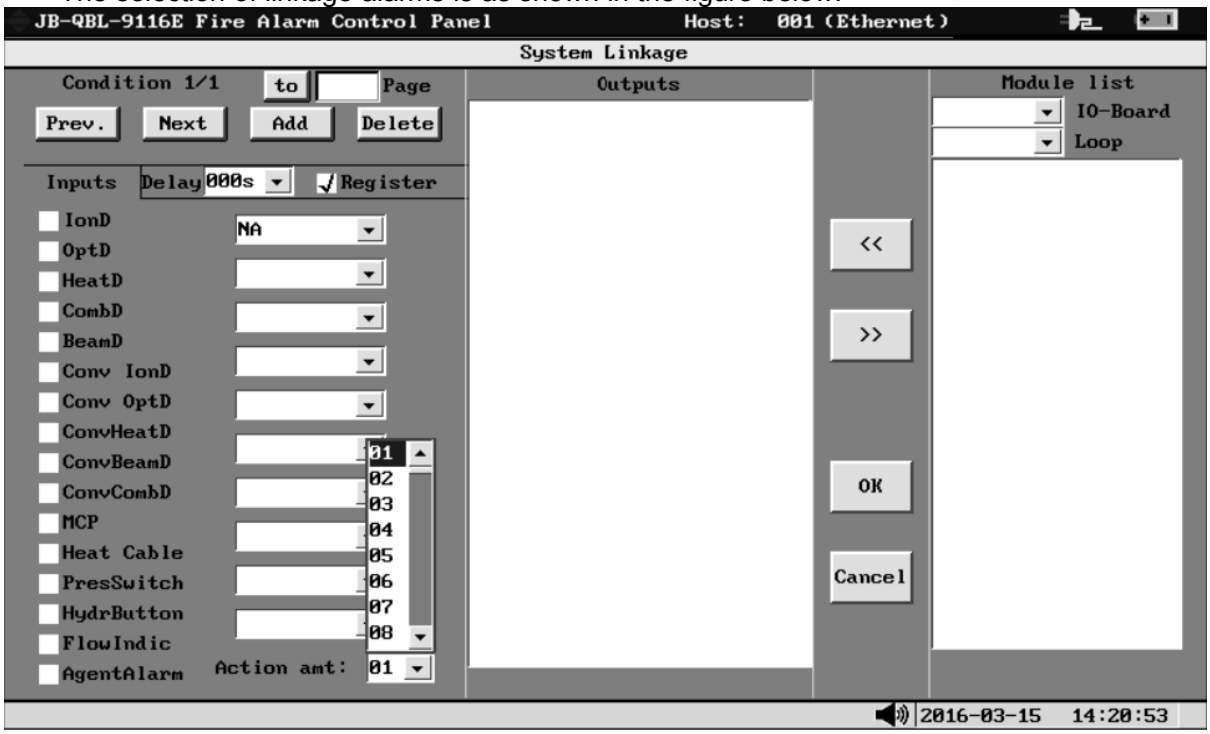


Figure 4-34 Linkage alarm selection

The default value of linkage alarm is 01, which means the condition is satisfied when any one equipment reports alarm. In some applications, the following linkage relations may be possible due to high reliability requirement of linkage action:



At this moment, set the linkage alarm number as 02 and consider the module controlling

"fire pump" as the output result, after that, the linkage relation is completely set. The system supports complex linkage of any 99 points at most.

A complete linkage condition must include the following element:

12) Complete zone condition (for example, the room linage must include start room number and end room number)
13) Type condition (that is, at least one equipment of a certain type is checked)
14) Delay time
15) Output result (that is, at least one module is requested for action when the condition is satisfied)

If the user input these elements incorrectly during setup, the system will deny and present corresponding prompt when OK button is pressed.

Attention For secondary trigger of linkage:

Two equipment types will be triggered secondarily according to actual application requirements of the system:

- Far sound equipment

Note: The so-called "secondary trigger" means that when an activated module is stopped manually and the linkage condition is satisfied again due to new fire alarm, the module is requested for the second time.

The setup of other linkage types in the system is identical to that of system linkage. The difference is the input box for other information is added in the linkage condition setup. The following section gives a brief description based on the illustration.

4.3.2 Zone linkage setup

The drop-down selection box is incorporated into the zone linkage. The corresponding options will be displayed only after zone information is registered.

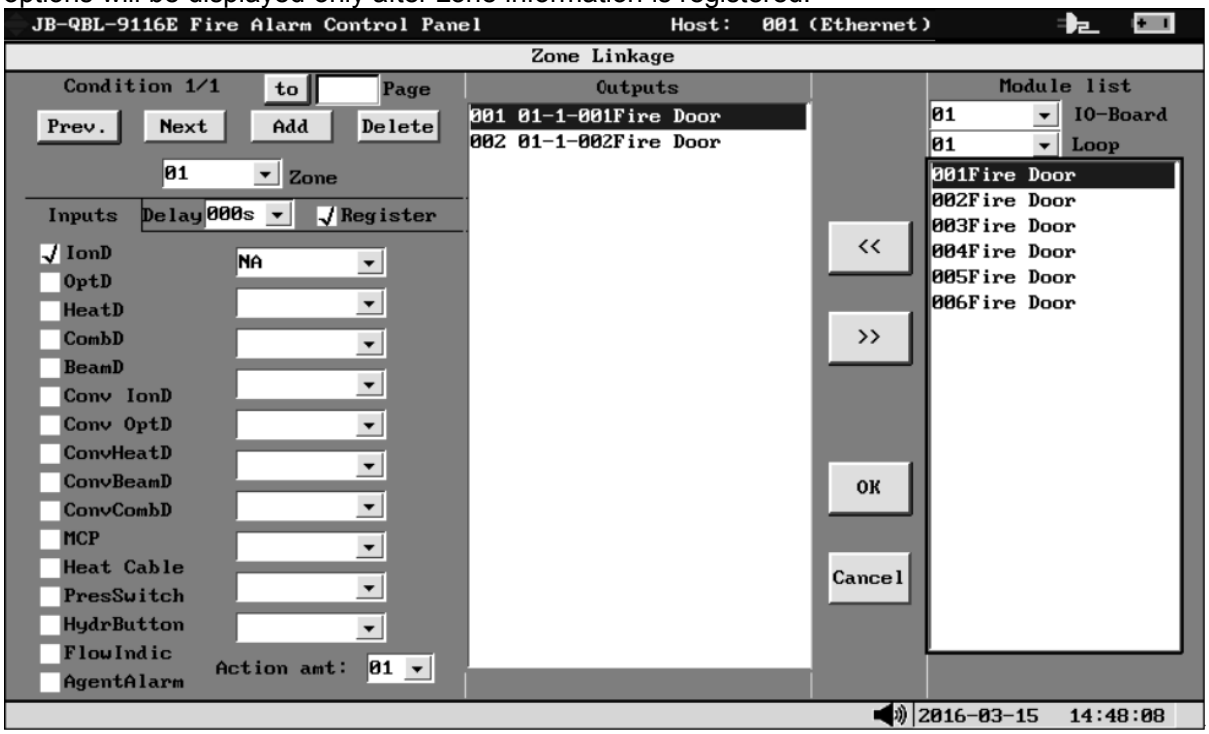


Figure 4-35 Zone linkage setup

4.3.3 Building linkage setup

The drop-down selection box is incorporated into the building linkage. The corresponding options will be displayed only after building information is registered.

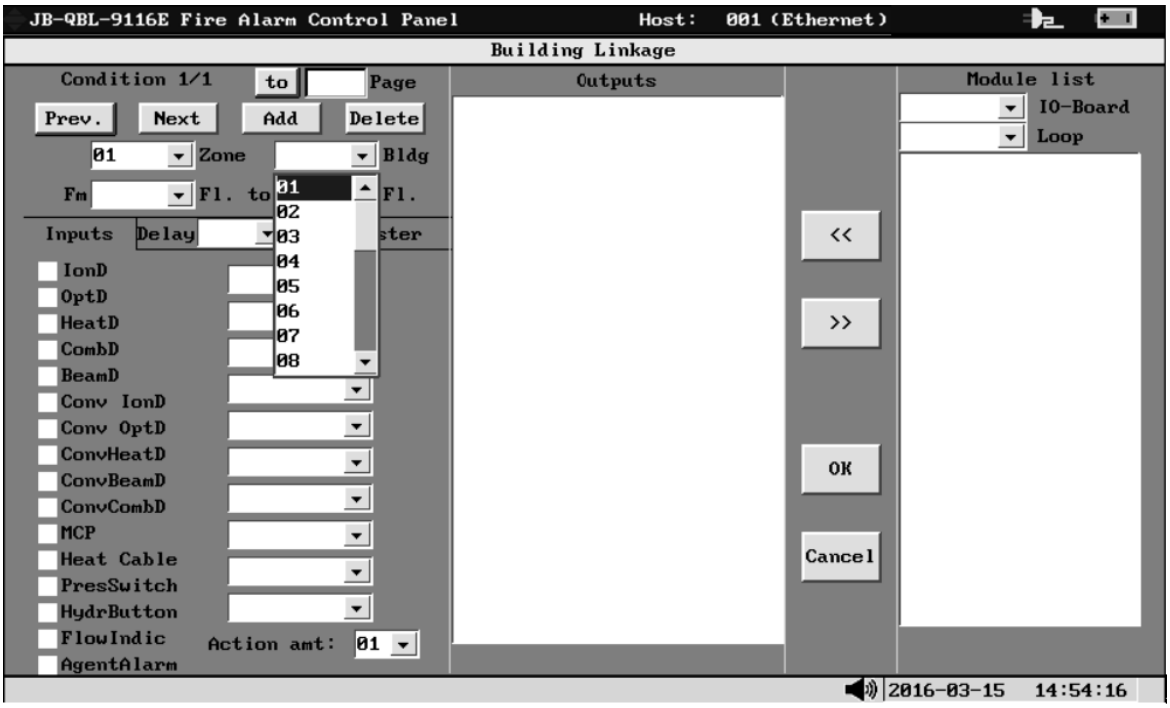


Figure 4-36 Building linkage setup

4.3.4 Floor linkage setup

The floor-related linkage conditions in the system include two types: type output and point input.

The figure below presents the floor linkage setup of type output, floor options are unavailable in the condition setup, a check box "scroll" is added only and a certain or some equipment types can be selected in the optional module list.

The floor linkage linkage of type output means: when detector or module of any specified type at any floor gives an alarm, the equipment of a certain type or some types at the floor will carry out actions completely. If "scroll" is selected, the equipment of same type at adjacent floors will carry out actions in the meantime.

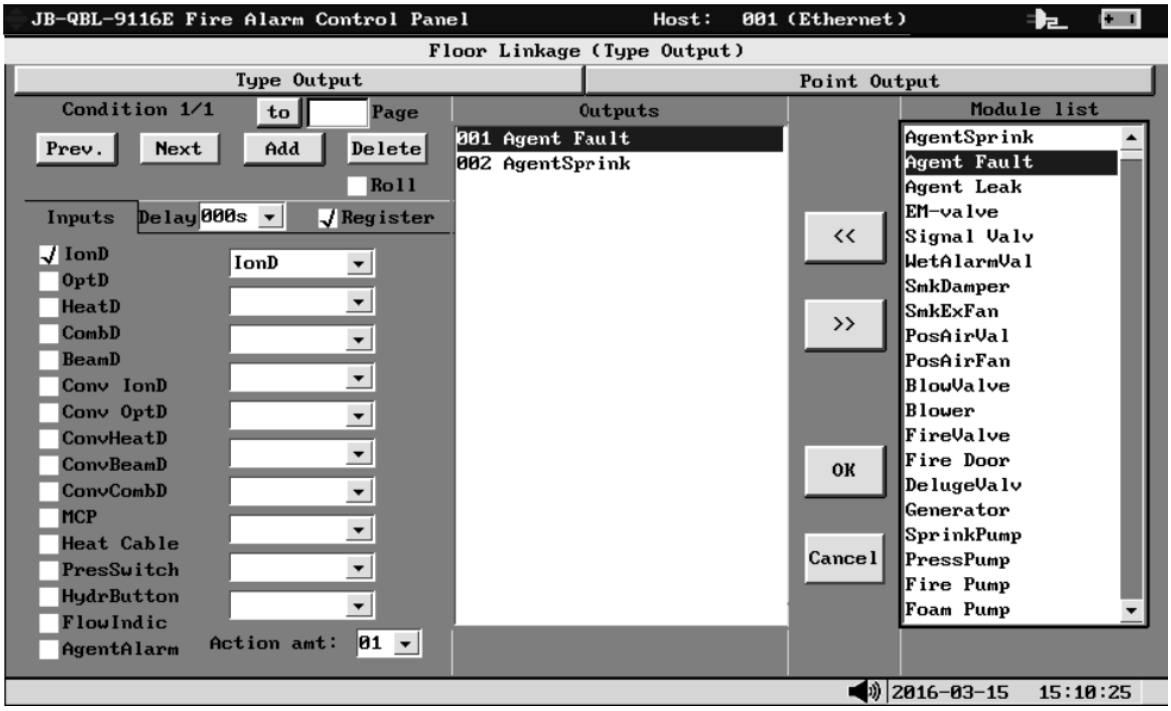


Figure 4-37 Floor linkage - type output

The linkage relation can be used cooperatively with the function "equipment type add", which can greatly reduce setup workload of the user.

⚠Attention The linkage relation of floor type output shall be immediately started and cannot be set at delay time!

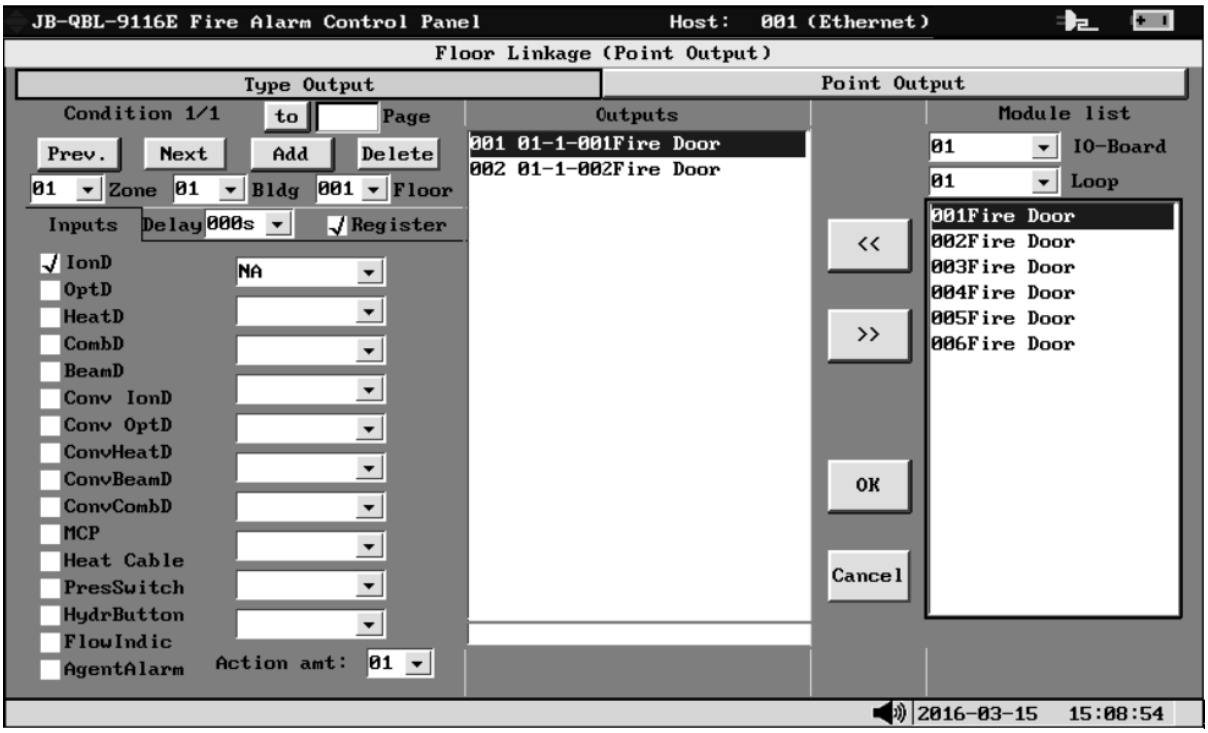


Figure 4-38 Floor linkage - point output

The figure shown above is the floor linkage of point output type and certain floor in the system can be selected by drop-down box, which means The alarm of detector or module of any specified type at the floor will cause the modules listed in the result list to act.

4.3.5 Room linkage setup



Figure 4-39 Room linkage setup interface

For room linkage, start room number and end room number at a certain floor can be selected by drop-down box, which means: When detector or module of any specified type at all rooms with a number between start number and end number at the floor gives an alarm, all modules listed in the output result list will be activated.

4.3.6 Complex linkage setup

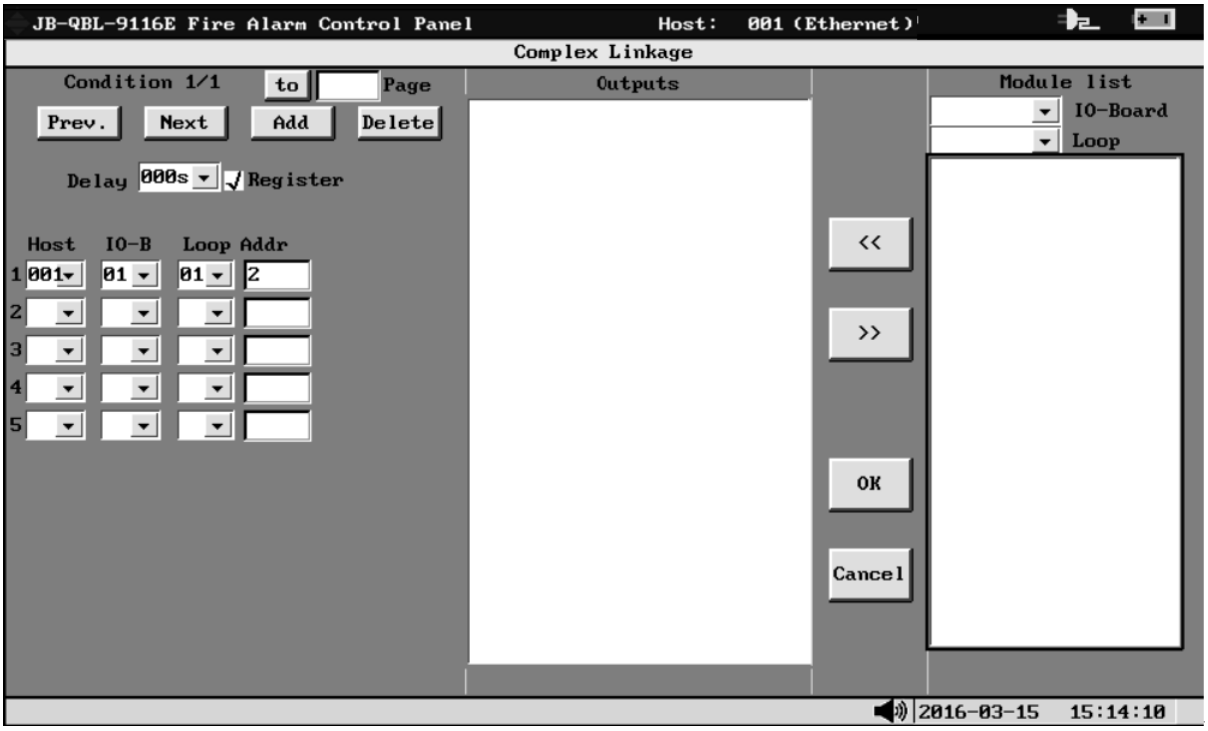


Figure 4-40 Complex linkage setup interface

The complex linkage setup differs greatly with the above linkage relations and the specific addresses of 1-5 detectors or modules can be set in the condition column. The semanteme of complex linkage: **start all modules listed at the result list when all the set detectors or modules generate alarms.**

Attention The host number can be set in the condition column, which means detector or modules participating in the compound operation may come from any host in the networking system! Less than 5 detectors or modules can be set in the condition column and the remaining input columns must be kept empty if the number is less than 5. If the user requires more than 5 detectors or modules, dummy modules can be used for setup.

4.3.7 Manual control panel

Manual control panel setup is completely different from other linkages. It connects a direct control button with a module in the loop. The integrated meaning is: direct control button corresponds to a module selected completely controls the start/stop of the module listed in the result list.

The corresponding relation between direct control button and module is one-to-one, so only one module address can be added in the result list of manual control panel setup.

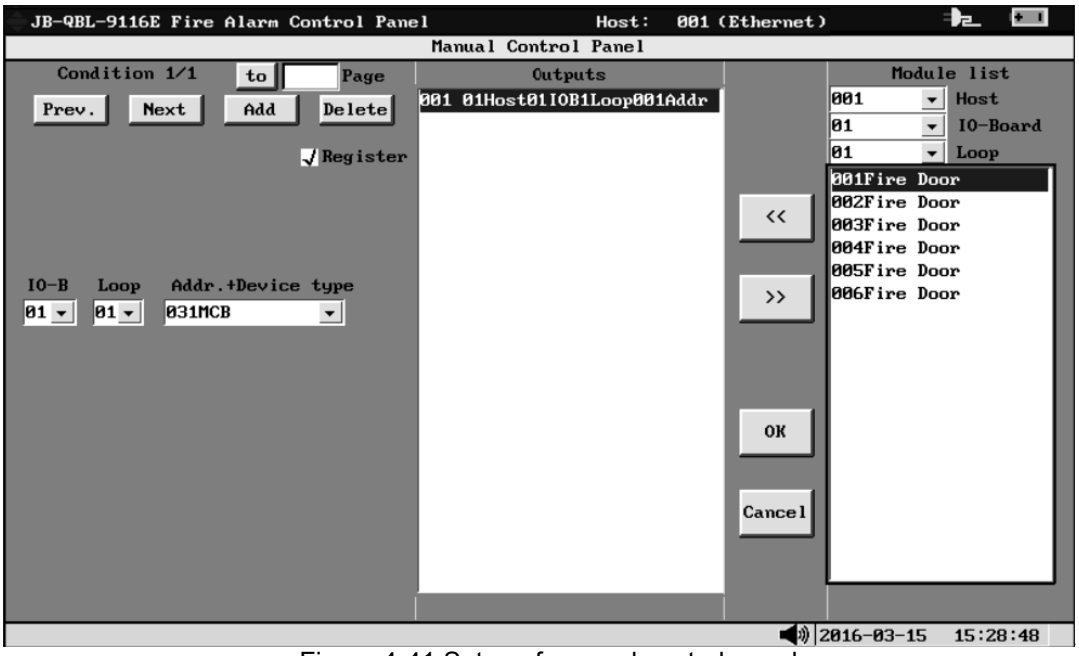


Figure 4-41 Setup of manual control panel

4.3.8 Fire Hydrant Setup

The four/six-wire fire hydrant produced by our company can be used as four-wire fire hydrant and is compatible with the functions of old six-wire fire hydrant. When used as four-wire fire hydrant, the corresponding relation between water pump shall be set by the setting function. The goal is to reduce the difficulty of actual installation and debugging of six-wire fire hydrant.

Thick linkage means: **When the water pump selected at the condition setting column starts or stops and "all fire hydrants" are chosen as the output result, then all fire hydrants in the loop will have the corresponding optical signal indication. Otherwise, the fire hydrants displayed at the output result list will have the corresponding optical signal indication.**

Note: The corresponding fire hydrants only will generate optical signal indication with this function, and thus they will not displayed at the alarm interface and the historical information.

The corresponding relation of this type shall be provided with at least one output result, therefore at least one data shall be added in the output result list as the result, even though all fire hydrants have been selected as the output result.

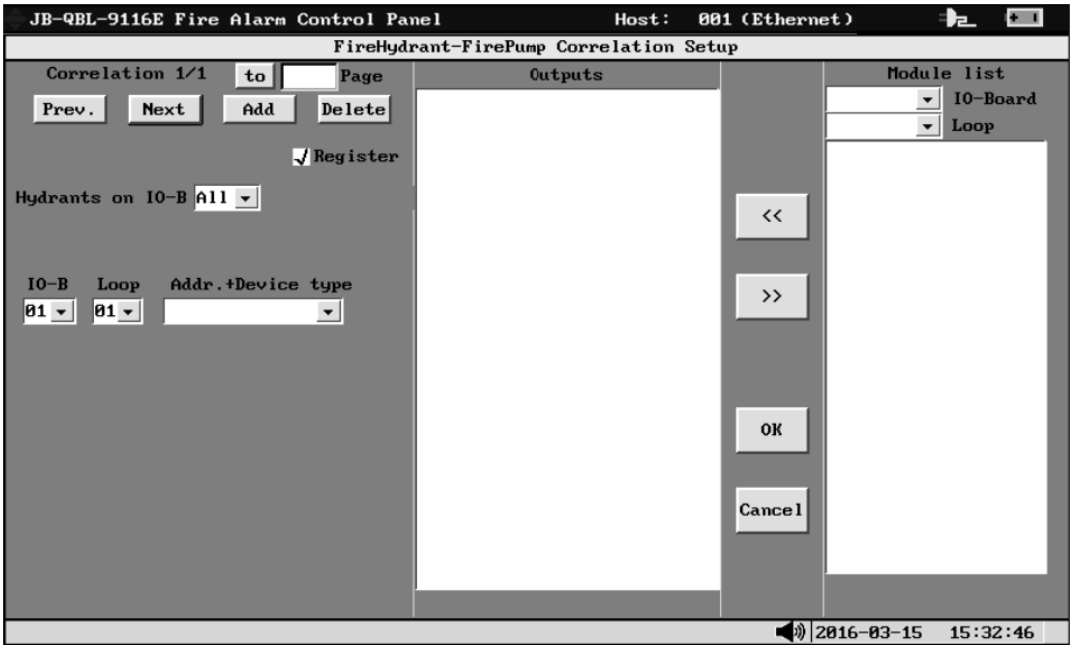


Figure 4-42 Setup of fire hydrant-water pump corresponding relation

4.4 Operation

This chapter introduces options in "Operation" submenu. "Operation" submenu is as shown in the figure below:

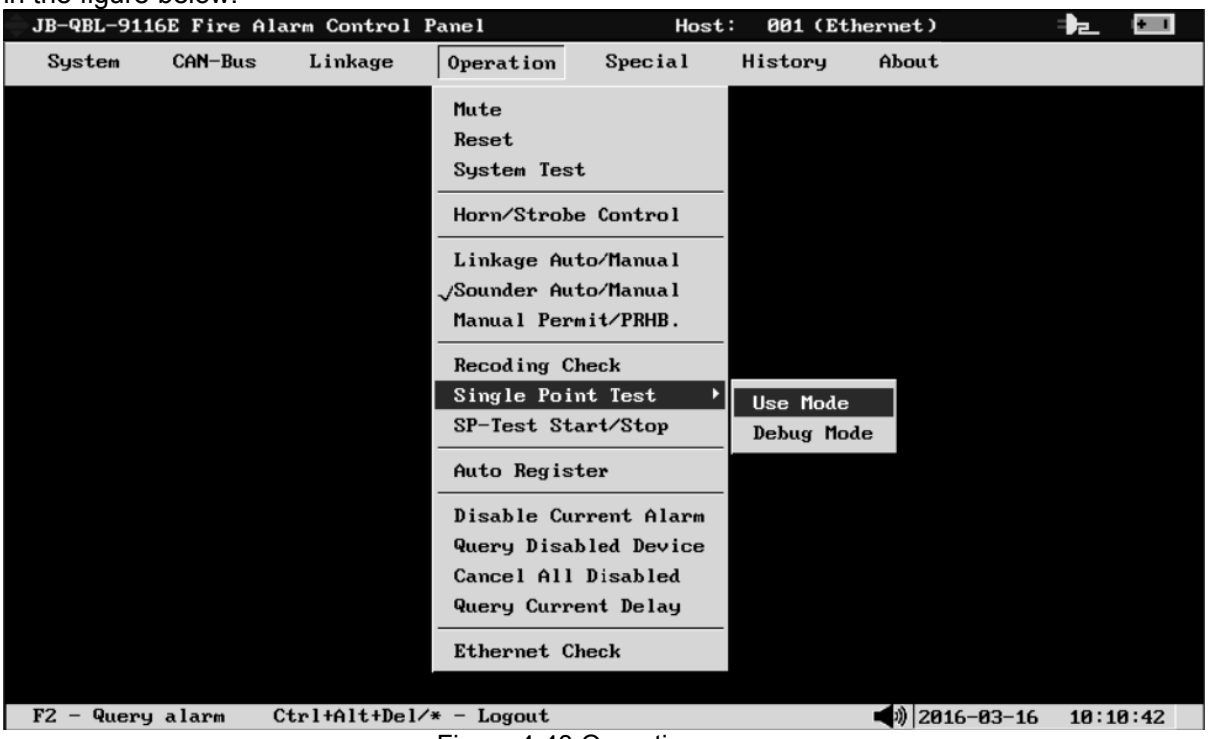


Figure 4-43 Operation menu

4.4.1 Mute,Reset,System test,Horn/strobe control,Linkage Auto/Manual,Sounder Auto/manual,Manual permit/PRHB

The function of the above 6 operations are identical with the keys on the panel. Refer to the "panel function".

4.4.2 Recoding check

The repeat address check aims to check the repeated address number of devices in the loop.

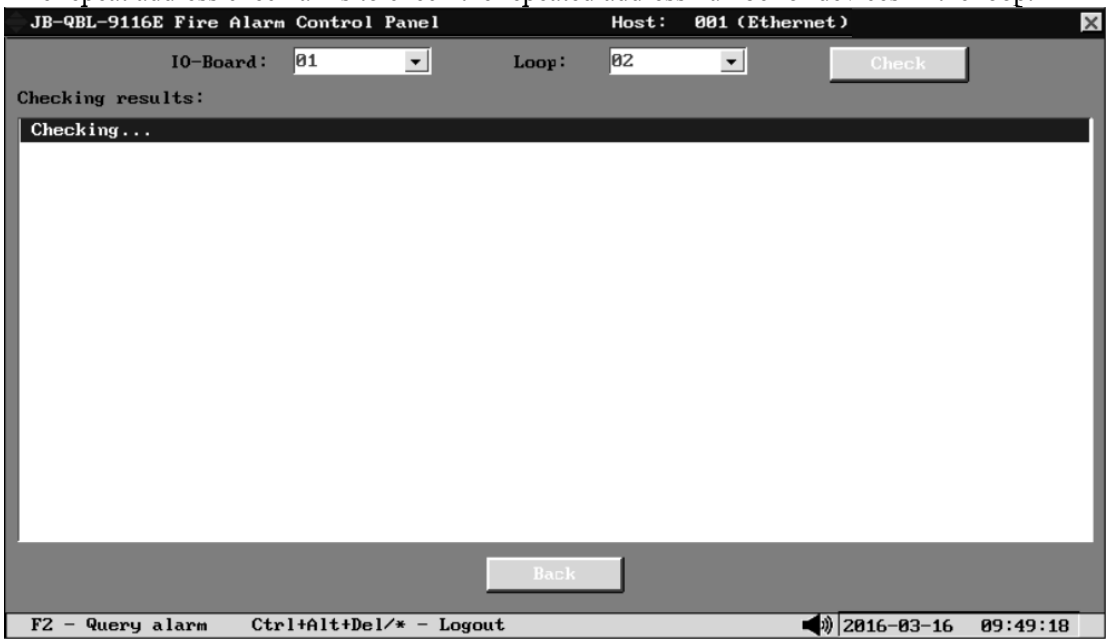


Figure 4-44 Repeat address check interface

Select "Check" to carry out the repeat address check. Now, "Check" and "Back" buttons are disabled.

When the check is completed, all repeated addresses in the loop will be displayed. Now it can check again, or exit the repeat address check by pressing "Back". The time-out error will be displayed if repeat value and stop command have not been obtained within 120 sec, and the test shall be carried out again.

4.4.3 Single Point Test

The single point test can be used to test operating state of detector/module on site and is generally used for debugging or fault diagnosis. This document does not describe it in detail. Click on "Single Point Test" —> "Use Mode"/"Debug mode" menu items, the address selection dialog box will pop up on the screen, as shown below:

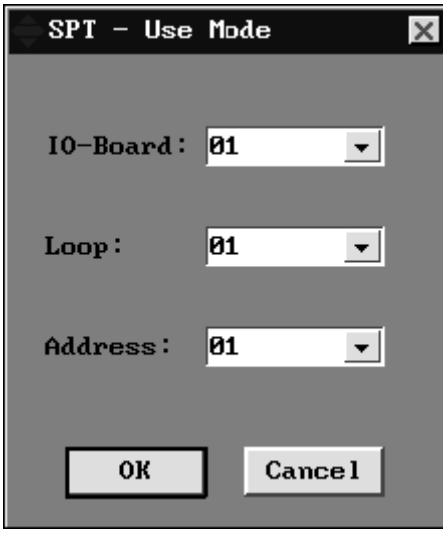


Figure 4-45 Single-point test - debugging mode

Enter IO-Board number,loop number and the bus address point requiring single point test and click on "OK" button to start the relevant test, and the screen display is as follows:



Figure 4-46 Single-point test result

The curve in the figure represents current state of detector/module. The scale is marked on vertical coordinate at the left side of the screen, from which the information return value can be read. The user may click on "Exit" button at the right bottom corner of the screen at any time, to exit out of the single-point test state. The figure above shows the smoke blowing test of photoelectric smoke detector and the changing process of smoke concentration value can be seen from the figure.

The lower section displays the following contents:

manufact type: indicating actual manufact type of detector/module being tested.

Current state: indicating the state of detector/module being tested, such as normal, short-circuit, alarm and fault.

On-line state: indicating whether detector/module being tested has repeated address on the loop. If repeated address is shown, detector/module being tested might be in error state and the returned value is invalid.

Background value, alarm value and drift value: shown only when the photoelectric smoke detector is under test, indicating the corresponding background value, alarm value and drift value.

As the alarm function of the system will be lost temporarily during single-point test, the modes are divided into USE MODE and DEBUG MODE. UNDER THE USE MODE, the single-point test state will be exited automatically within 60s of the single-point test; under the DEBUG MODE, the system will return to normal monitor state from the single-point test state after 20 minutes of single-point test.

4.4.4 SP-Test Start/Stop

Click on SP-Test Start/Stop menu item, the dialog box of address selection will pop up on the screen, as illustrated in the figure below:

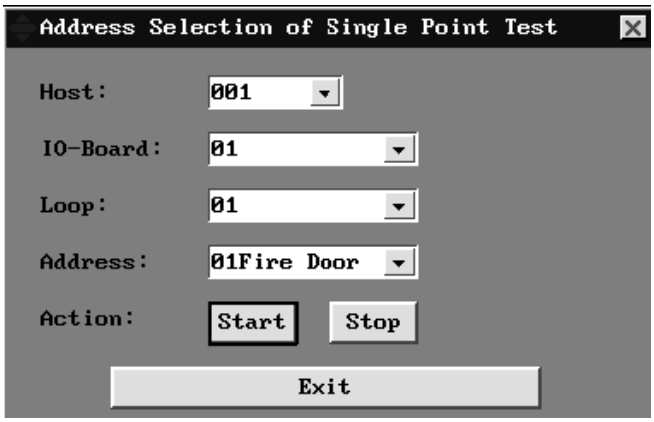


Figure 4-47 Address selection of single-start/stop

The user may select one of the module host number, loop number and addresses by drop-down box and click on Start or Stop to carry out corresponding operations; click on Exit button directly to exit out of the dialog box without performing any operation.

Click on drop-down button of address number and the system will list addresses of all output or input modules for selection by the user.

⚠Attention The module with reported line fault will not be listed. When selecting the module, the address of local machine can be selected only, which means the function of single-start/stop can be used to control any output or I/O module of the local machine.

4.4.5 Auto Register

The auto register refers to registering detector and module data on the registered loop. The register items include whether to register and the manufact type of the device. Press OK button for auto register. The auto register will take about 120 sec.

After registering successfully, the system will provide comparative results of auto register. The user may start detector/module setup interface, and now the auto register program changes two properties (register bit and manufact type) of the data in the original detector/module setup form. The debugger may change, save data or cancel the auto register at discretion.

If register fails or time is out, the system will indicate fault or time-out information.

The following figure is the system interface of auto-register:

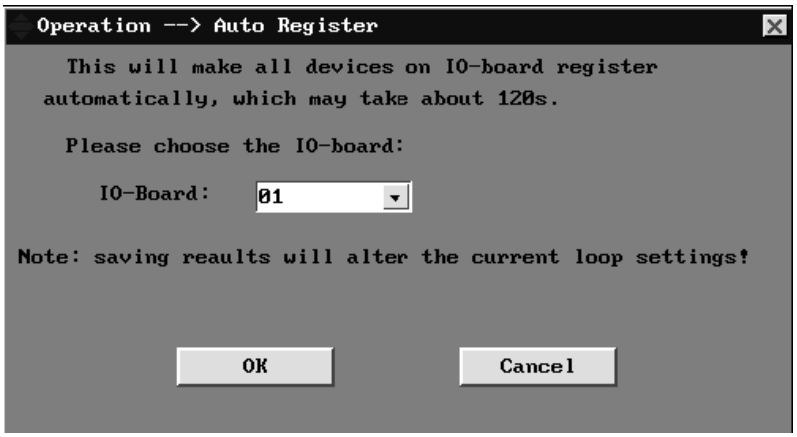


Figure 4-48 System prompt of auto register

The following figure shows comparative results given by the system after auto register:

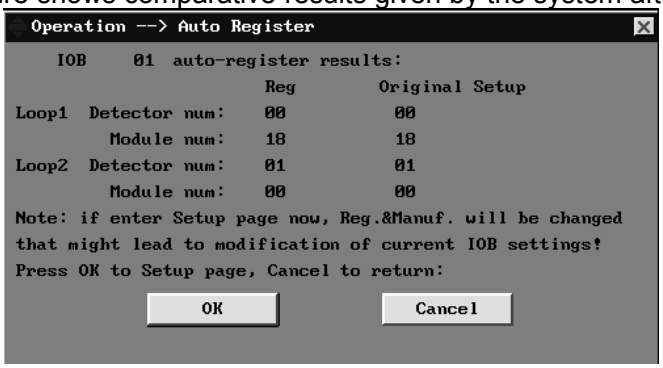


Figure 4 -49 System register result

The above figure shows that 5 detectors are registered in the original setting, but only 2 detectors are on-line currently; 10 modules are registered, but only 7 modules are on-line. The figure also prompts warning messages, such as "Press OK to enter setup interface" and "register and manufact type address will be changed", to prompt the user to make choice.

When auto register is in process, the time countdown will be displayed at the bottom of the screen. If current interface board is under communication, time-out error will occur when counting down to 0, and the system prompt is as follows:

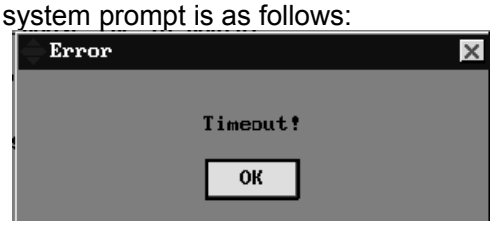


Figure 4-50 Timeout error of auto register

Warning **Auto register of the system may rewrite the system setting; proceed with caution!**

4.4.6 Disable Current Alarm

The function of this menu item is exactly the same as that of "DISABLE" on the panel.

4.4.7 Query Disable Device

The following form interface will pop up on the screen after selecting this menu item:

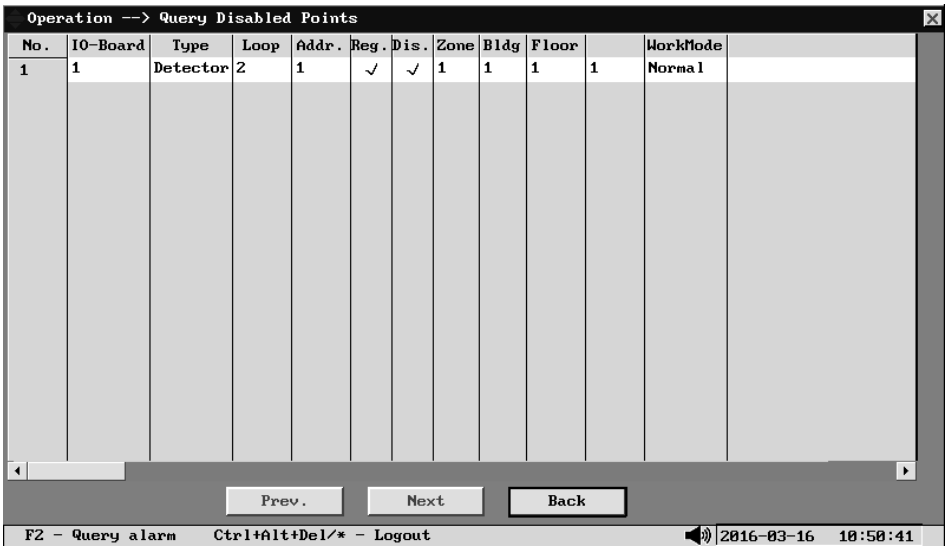


Figure 4-51 Query disable device

The entire screen can display 16 disable points; if the total number exceeds 16, click on Prev. and Next to turn page and inquire. Click on Back button to exit the isolation query interface.

The disable device query interface is for the user to acknowledge current disable condition of the equipment; the interface is not provided with rewriting function. It means the properties of detector/module cannot be changed at this interface.

4.4.8 Cancel All Disable

Click on this menu item and the system will cancel the disabled devices. The system will automatically search for all disabled devices and cancel all disabled marks.

This function offers a convenient way for the user to cancel disabled setting. If the disablement of individual point is required to be cancelled, enter into detector/module setup interface and rewrite corresponding disabled marks in the form.



Figure 4-52 Cancel all disable

4.4.9 Query Current Delay

In case of linkage, if the linked equipment is provided with delay time and is during the delay time, the linkage modules delaying at current can be inquired with this function. The delaying list will be empty when inquiring after all delays end.

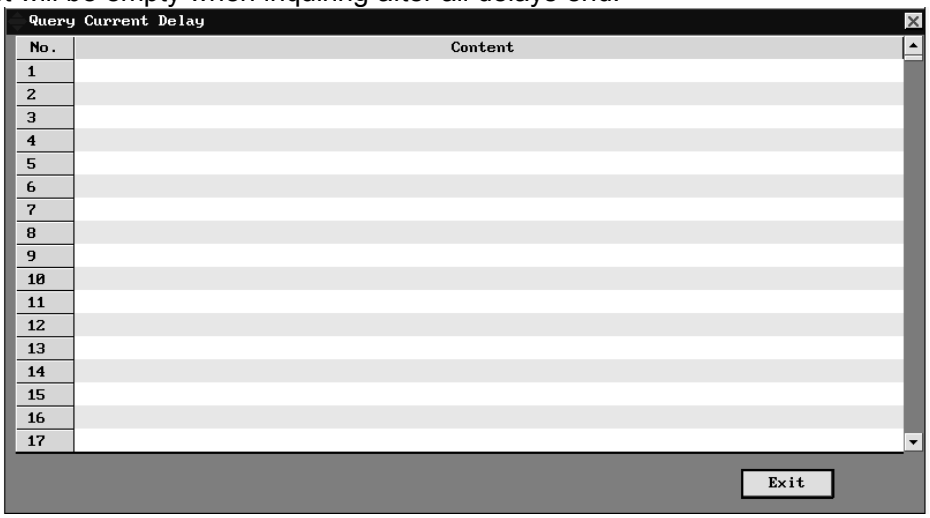


Figure 4-53 Current delays check

4.4.10 Ethernet Check

This is function is used to test the Ethernet network quality.The system normal prompt is as follows:

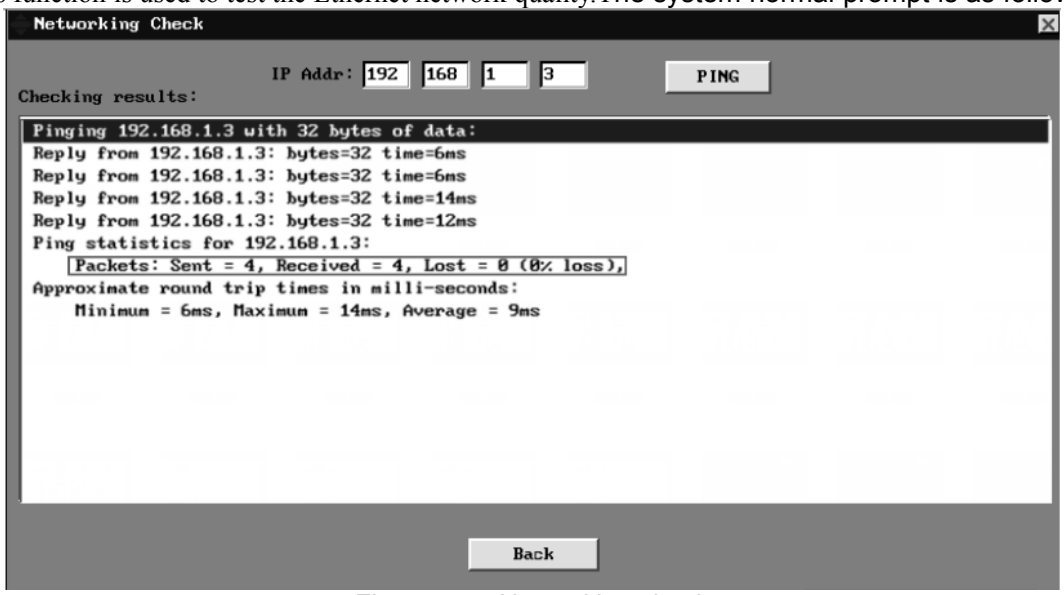


Figure 4-54 Networking check

4.5 Special

The menu of special operations is as shown below:

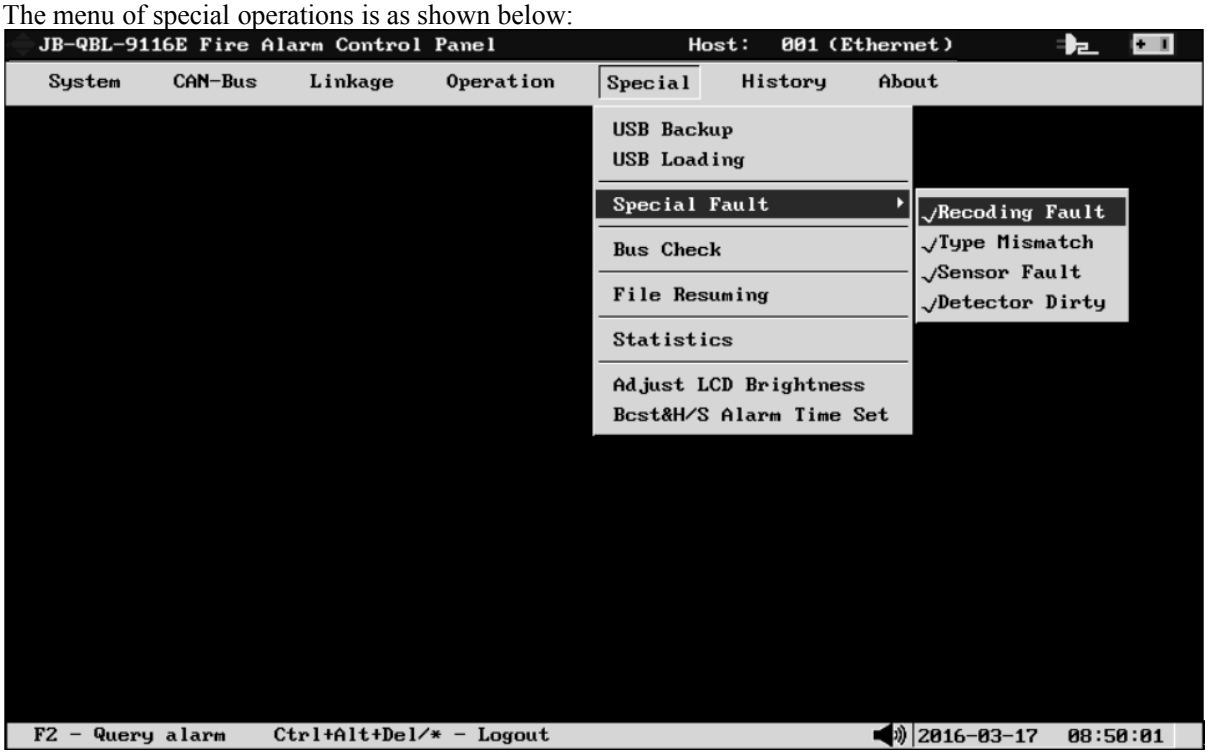


Figure 4-55 Menu of special operations

⚠Attention The special operations are only for system debugging and maintenance. Therefore, they are restricted to developers and debuggers of our company. The menu options of Special are not optional (grey) when logging in the system as the system administrator.

4.5.1 USB backup

Back up the system data into U disk. U disk is a standard device and the standard USB

interface is available on the system. Please format U disk by a card reader on a standard PC before usage. The capacity of U disk for data backup shall be greater than 2M. The system prompt is as follows:

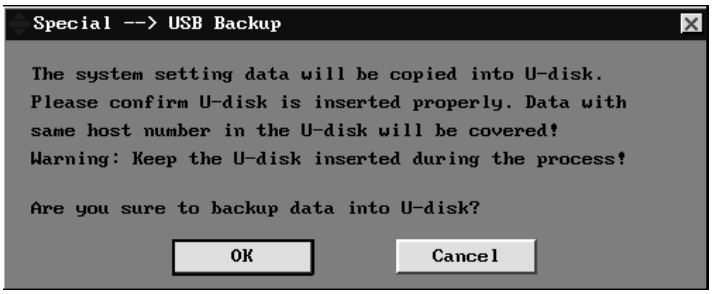


Figure 4-56 Prompt of U disk data backup

If U disk is inserted incorrectly, the system prompt will be as follows:



Figure 4-57 Prompt when U disk is not inserted

If U disk is inserted correctly and the remaining storage capacity satisfies the requirement, the system will proceed to copy setup data and historical data into U disk.

The system will indicate successful backup after all data are processed completely and the whole process will take 30-60sec.



Figure 4- 58 Successful USB data backup

⚠Attention The data of multiple hosts with different number can be backed up into a single U disk. If the host number is identical, the original document will be overwritten during data backup.

4.5.2 USB loading

Download the data in U disk into the system host. The host will search for all system files automatically and copy them into data Flash of the host. The operation needs to be reconsidered, as setup data of the host will be overwritten (note: historical files are copied during data backup, but ignored during data load). The system prompt is as follows:

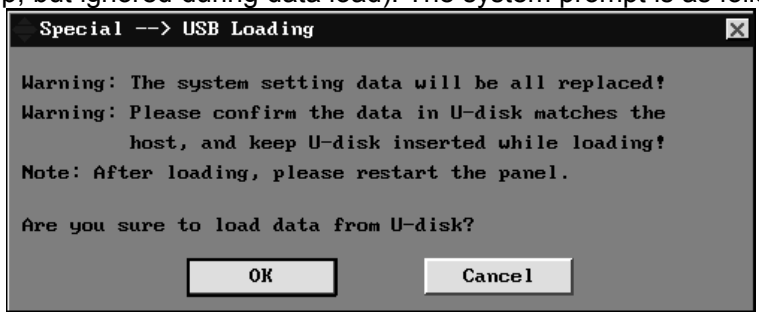


Figure 4- 59 Prompt of U disk data load

The system prompt is as follows after completion of data load:



Figure 4- 60 Prompt of successful U disk data load

Attention The newly-loaded data will take effect only after the system is re-electrified after loading the data!

4.5.3 Special fault

Special faults can be divided into repeated code fault type mismatch, sensor fault and sensor pollution.Alarm interface will display those fault types selected.

4.5.4 Bus check

Monitor the communication line of the host. Number of sending data packages and number of receiving data on the networked bus will be shown. Number of receiving data packages is relevant to bus communication quality, and meantime number of sending data packages and number of receiving packages on the corresponding bus will differ greatly in case of host fault. Normally, send data packages and receiving data packages of each bus shall be roughly same in number.

The interface of bus quality check is as follows:

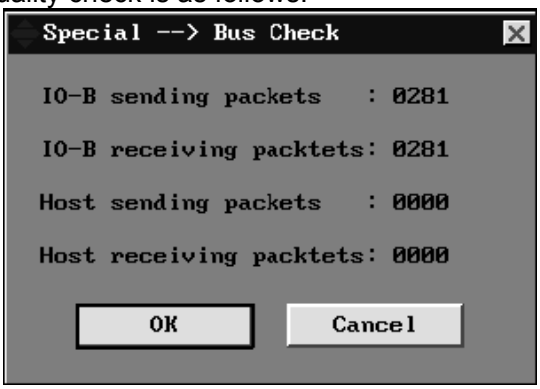


Figure 4-61 Bus quality check

Paraphrasing from the example in the figure: operation of the buses is basically normal, while the bus data is different slightly.

4.5.5 File Resuming

Clear all system setup and all data will be lost after the operation; therefore, File Resuming is dangerous. This function is used for production test only. The system prompt is as follows:

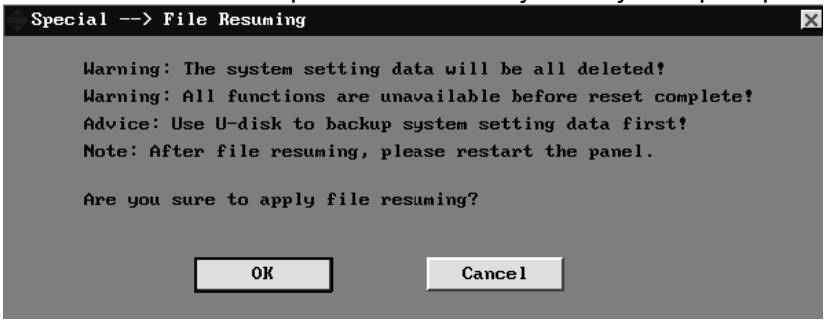


Figure 4-62 File Resuming

Warning To prevent important setup information from losing due to mal-operations, this function can only be used after logging in through "super user" password and ordinary users are not allowed to use it.

4.5.6 Statistics

The statistical function is used for counting registered number of zones, buildings and floors in the system and registered number of detectors and modules of each type set on the interface board. All information will scroll up and down on the display screen. The function is aimed to offer assistance to system debugging. Example of system prompt:

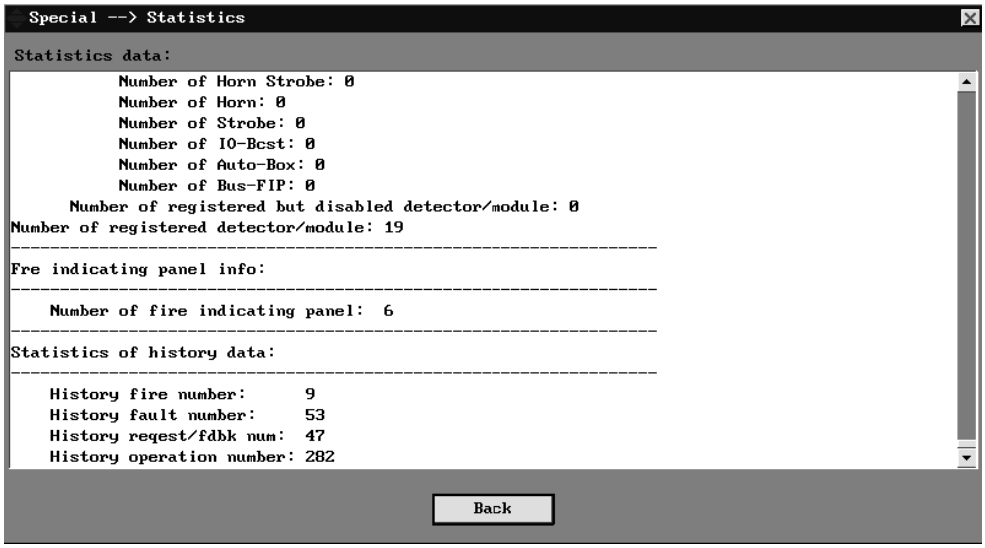


Figure 4-63 Statistics interface

4.5.7 Adjust LCD brightness

Remind the methods of modifying LCD brightness dynamically and display current LCD brightness. The brightness control via panel must be carried out in this window.



Figure 4-64 adjust LCD brightness

4.6 History

The query function of this system can be used to inquire various historical messages, which include the sub-items below:



Figure 4-65 History menu

Each sub-item can access 1000 historical records at most. If historical messages total more than 1000, the system will update automatically and overwrite.

Friendly Reminder **The system does not keep historical records in real time, which means certain historical messages will not be saved in case of sudden system power-down or mandatory reset. Generally, this situation will not occur under normal operating state.**

4.6.1 History fire

Inquire information of the latest 1000 historical fire alarms, with the format of each historical fire alarm as follows:

No	Time (Year/Month/Day/ Hour/Minute)	Company Code	Fire Description	Equipment Type Fault Type
1	16/03/17 10:16	00102001	Zone1building1floor1No1	OptD

The following figure is the query interface of historical fire alarms:

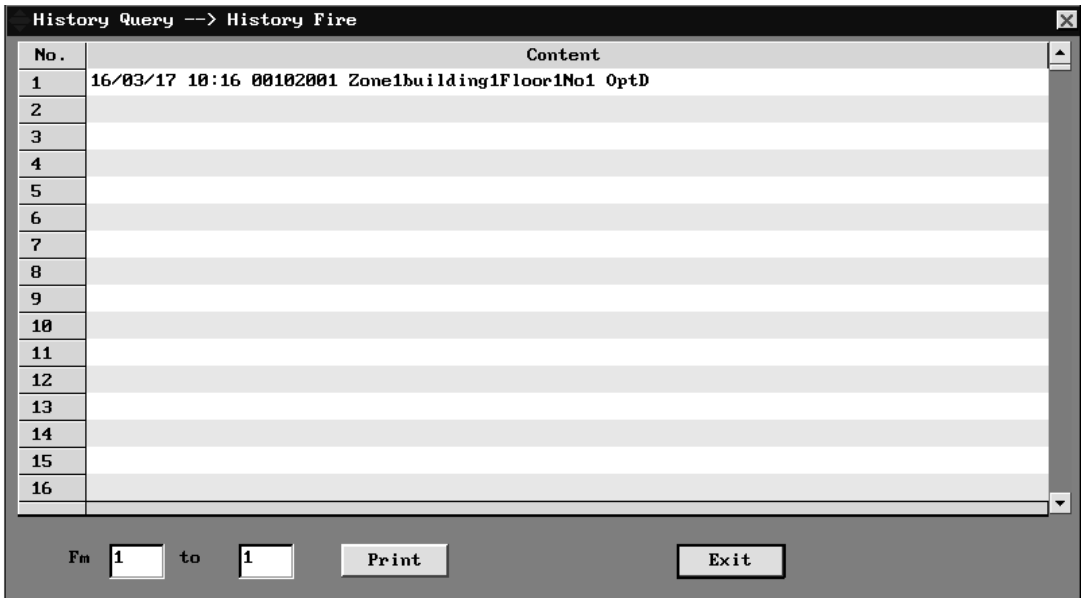


Figure 4-66 History fire alarm interface

To use print function of historical fire alarms, enter start number and end number of the historical fire alarm to be printed at the print column in the lower left corner. Click on Print to proceed through host printer.

4.6.2 History fault

Inquire information of the latest 1000 historical faults, with the format of each historical fault as follows:

No	Time (Year/Month/Day/ Hour/Minute)	Company Code	Fire Description	Equipment Type Fault Type
1	16/03/17 10:18	00101000	Host1 power AC fault	power fault

Query interface of historical faults is similar to that of historical fire alarms.

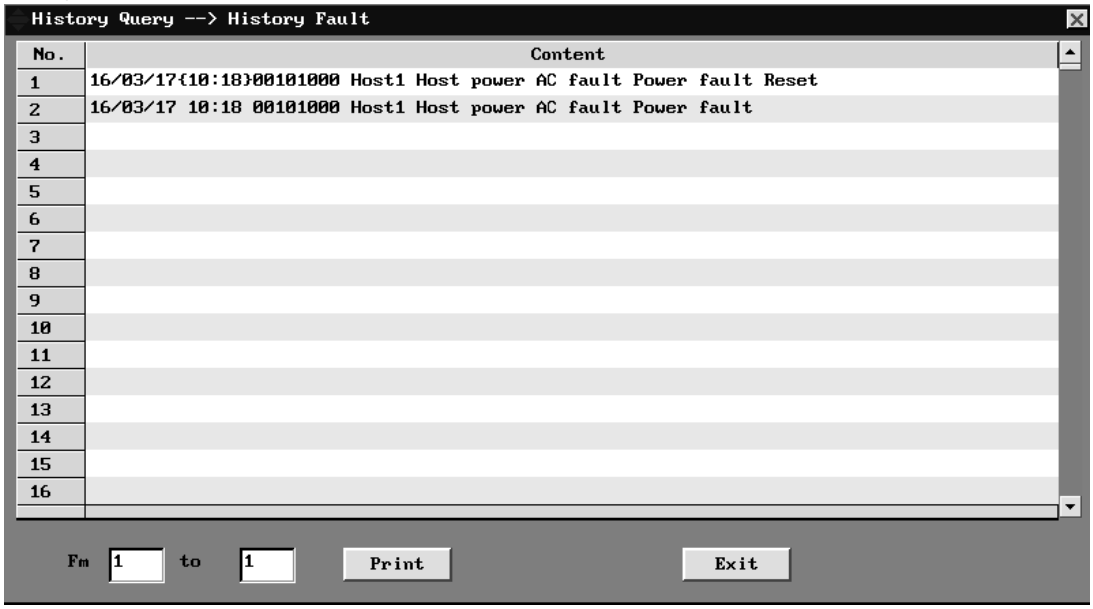


Figure 4-67 History fault interface

4.6.3 History linkage

Inquire information of the latest 1000 history linkage, with the format of each

request/feedback information as follows:

No	Time (Year/Month/Day/Hour/ Minute)	Company Code	Linkage	Equipment Type
1	16/03/17 10:14	00101001	Zone1building1floor1No1	Fire Door

The query interface of history linkage is similar to that of historical fire alarm, which lists request time and feedback time, as follows:



Figure 4-68 History linkage interface

4.6.4 History operation

Historical operations include the operations carried out on the system by the user, such as login in, reset and muting. The sub item can be used for inquiring information of the latest 1000 historical operations, with the format of each historical operation as follows:

No.	Date	Time	Operation description
1	16/03/17	10:20:36	Super user login

The query interface of historical operation is as shown in the following figure:

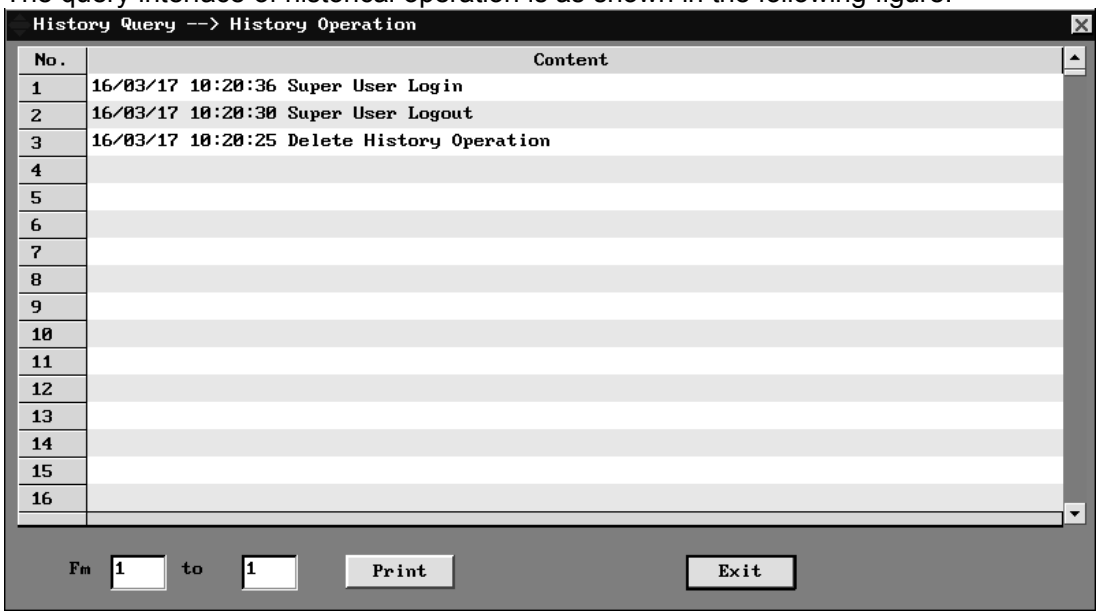


Figure 4-69 History operation interface

4.6.5 History deletion

The historical deletions can be used to remove historical faults, historical linkage, historical fire alarms and historical operations, and this historical information can be deleted by selecting relevant option.

Friendly Reminder Barring special circumstances, the user is not suggested to delete historical records. As important materials required for system maintenance, the historical records are kept circularly and the latest 1000 records will be saved; therefore, issues such as excessing storage capacity and failing to record will not occur.

4.7 About

On the main menu, click on "About" to enter into the system version query,system operation date and language select.



Figure 4-70 About menu

Attention Restart and login the system when the language is changed.

The current version number shown in the dialog box.

The system version can be updated on site. Our company will continuously improve the system, add new functions and be responsible for the real-time version upgrading of projects that have signed maintenance contracts with our company.

Chapter 5 Alarm Function

Alarm is the main function of the fire alarm linkage control equipment. The system can recognize, control and drive our company's bus devices and multi-wire devices, including intelligent detectors and modules. The alarm functions mainly include fire alarm, device linkage and handling and display of various faults.

For correct fulfillment of alarm function in this host, please ensure the following conditions:

- ✧ Bus devices needed in the engineering such as detectors and modules are in place and the engineering wiring is completed and correct;
- ✧ Address codes of detectors and modules are compiled (using the special encoder provided by our company) and no detectors or modules share the same address code;
- ✧ Device properties of every one of the host's detectors and modules are correctly set, such as building, floor, room, position description, work mode, manufact type, equipment type etc.
- ✧ All kinds of linkage information are correctly designed and set as per the engineering requirements;
- ✧ Correctly set bus manual control panel and multi-wire linkage unit;
- ✧ Correctly set printer, indicating panel and CRT-9000 fire control room graphic display system;
- ✧ Correctly set multiple hosts in the networking system.

On the premise of completing the above mentioned settings, the system can perform a full set of fire alarm functions.

Alarm function's sources of information:

1. **Fire alarms**: all kinds of **detectors** (such as ion, photoelectric, temperature, infrared, compound detectors etc.), manual alarm apparatus, interface module, monitoring module, fire hydrant button etc.
2. **Request**: **output module**, **input/output module.**
3. **Feedback**: **input module**, **input/output module.**
4. **Faults: breakdown of detectors and modules, short circuit or open circuit of loops, communication fault of indicating panels, communication faults of the host, power faults, printer faults.**

The following is the introduction of alarm interface and related information. The system's alarm interface is as followed:



Figure 5-1 Alarm interface

When a certain device in the system detects an alarm signal, the signal will be processed in the host for confirmation and linkage operation. The corresponding results will be displayed on the host screen with corresponding acousto-optic instructions simultaneously given by the indicator light and the buzzer.

The alarm interface locks the first alarm message of each alarm type (always exhibits in the first line, not participates in the scroll display). Alarm messages following the first one are in the circular scroll display with an interval of 5 seconds. The message stops scrolling for 15 seconds when the user chooses to view and the message will resume scrolling after 15 seconds.

Apart from the status information bars at the top and the bottom of the alarm interface, the other section is divided into three parts: fire information display, request/feedback information display and fault information display. In each part, the left side shows alarm message prompt and its corresponding entry number, while the right side shows the message's specific information.

Description of the information on the alarm interface:

1. Information entry number

Indicate number of alarms of all types occurred after system resumption. If current alarm is not silenced, its corresponding entry number will flash to prompt. It will stop flashing when the silencing action is performed. However, when a new alarm of a certain type is generated after silencing, the alarm entry number of that type will flash again until silenced.

2. Entry no.:

Indicate the sequence number of this alarm message in its alarm type.

3. Alarm time:

Indicate when the alarm is generated. For the request/feedback alarm, the first time quantum indicates occurrence time of device request action, while the second time quantum indicates feedback time of device's action. If the quantum is shown as "--:--", the device performs no request or feedback action at present.

4. Location or content description:

For fire alarm and request/feedback alarms, this zone indicates where alarm message occurred. The geographic location information can be set on the property setup interface of the detector module.

For the fault alarm, information displayed in this zone is relatively complicated. If a fault happens in detector, module, bus manual control panel or multi-wire linkage unit, the display information will be the geographic location of the fault. For other faults, information of faults' types will be displayed, such as short-circuit loop of the detector bus, communication fault of the host, communication fault of the indicating panel, communication fault of the printer and power fault.

5. Device type:

Indicate the type of the device to which the alarm message belongs. The device type can be set on the property setup interface of the detector module. See appendix for code number of device types.

6. Manufacturer debugging code:

The manufacturer debugging code is used for system installation and debugging by the engineering debugger and is a kind of reference data. This zone consists of 8 digits with the following specific meanings: the first two three digits are the number of the host with alarm message; the next two digits are IO-Board number and loop number ;the last three digits are detector or module address.

7. Fault description:

The fault description indicates the specific fault type of this fault. Specific fault types include:

Loss	Open circuit	Short circuit
Repeated code fault	Device fault	Type mismatch
Sensor fault	Sensor pollution	Short-circuit loop
Open-circuit loop	Communication fault of	Communication fault of

	the indicating panel	the host
Power fault	Printer fault	

8. Activated alarm box

Activated alarm box is used to show which type of alarm messages in the alarm interface is under activated status and only such allows manual query operation.

Operations can be performed on the alarm interface:

a. Alarm information query:

- Activate the alarm type needed to query (fire alarm, request/feedback and fault information). There are three methods to choose from:
  - Use the mouse to click on the area of the alarm type needed to view;
  - Press the Left and Right keys on USB standard keyboard;
  - Press the Select key on the host panel keyboard.
- Drag the scroll bar of the alarm message list. There are three methods to choose from:
  - Use the mouse to click on or drag the scroll bar on the right side of alarm type area;
  - Press the Up and Down keys on the host panel keyboard.

b. Sound silencing:

- Press MUTE key on the host panel;
- Click on sub item of MUTE menu on Operation menu;

Note: After silencing operation, the alarm will still sound if new alarm message occurs in the system and the entry number of its corresponding alarm type will flash to prompt.

c. Reset:

Restore the status when the system just powered on. All alarm information will be erased and the alarm interface will be switched to normal running status of the host. There are two ways to choose from:

- Press Reset key on the host panel;
- Click on sub item of Reset menu on Operation menu;

The figure below is the actual display interface of alarm window:

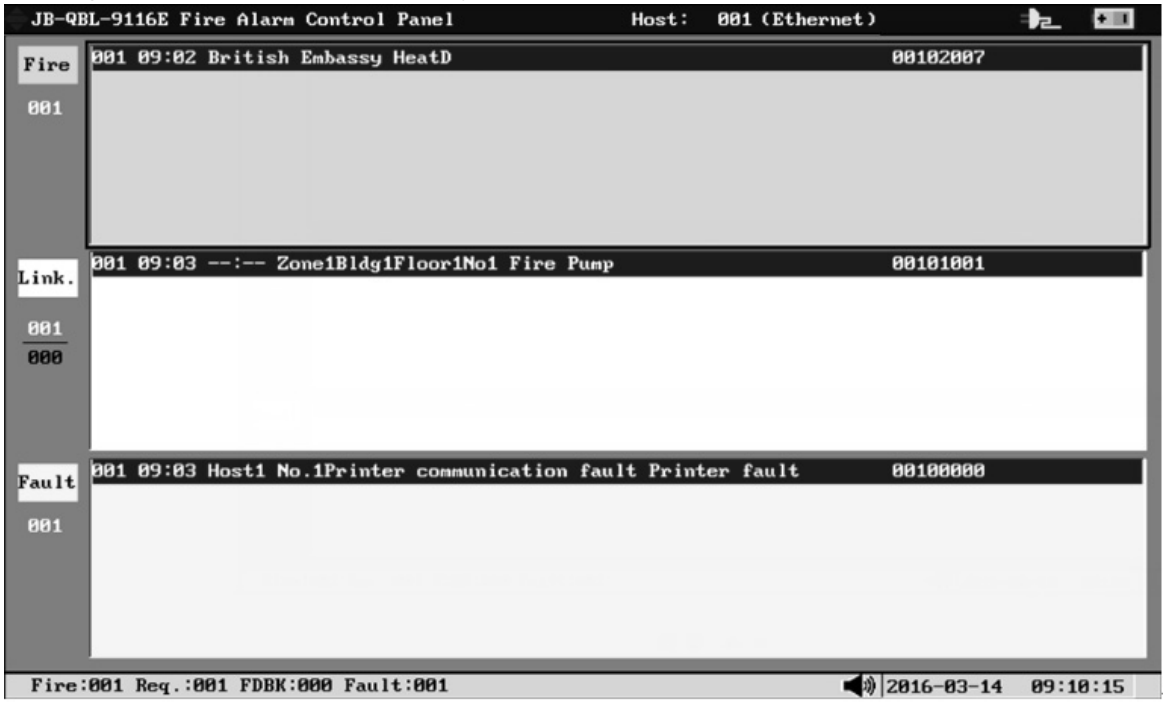


Figure 5-2 Actual alarm window

Introduction of the above figure:

1. The figure shows one fire alarm, one request, no feedback and one fault detected in the system;
2. Each detector or module alarm has non-zero manufacturer debugging code; therefore the actual address coding can be calculated;
3. The power state is that the main power is normal and the standby power is charging;

4．The first fire alarm, the first request and the first fault are displayed in different colors;

5．Fire alarm shows information concerning building, floor and room;

6．Total number of fire alarms, requests, feedbacks and faults as well as current data and time are displayed in the status bar;

Chapter 6 Analysis and Elimination of Possible Causes of the Fault

✧ Fault phenomenon: No action is generated from alarm bell and acousto-optic alarm apparatus when the system reports a fire alarm.

Handling methods and possible causes:

a. Please check whether the far sound indicator light on the panel has been lit.
b. Whether there is fault information about that alarm bell or acousto-optic alarm apparatus on the host.
c. Whether there is 24V power on the site of alarm bell or acousto-optic alarm apparatus.
d. Whether the control module type of the alarm bell is set as far sound or acousto-optic alarm apparatus;
e. Whether there is output of far sound/acousto-optic alarm apparatus in linkage setup.

✧ Fault phenomenon: No request action is generated from the device when the system reports a fire alarm.

Handling methods and possible causes:

a. Please check whether the automatic/manual indicator light on the panel is on.
b. Whether there is linkage setup data in linkage setup or the "register" item in linkage data is not checked.

✧ Fault phenomenon: After reporting a fire alarm, there is a device requesting for action but no action from the field device is shown.

The device's feedback signal needs to return through a control-monitoring module. Possible causes:

a. The field device is not under auto mode; therefore, it cannot be controlled by the module and it fails to start.
b. The device has started but the feedback signal line falls off.
C. The field device is not connected to the power supply.

✧ Fault phenomenon: The host reports faults of main power and standby power at the same time.

Handling methods and possible causes:

a. Whether the main power feedback cable of the host is well connected
b. Main power breaks down and standby power is in under-voltage condition.

✧ Fault phenomenon: The printer prints messy code at the time of alarm.

The host of MN3010 series can set multiple printer types and their communication parameters. Possible causes:

a. The printer type set is not consistent with that of equipped printer. It is the thermal printer when set as "SPRT-02 printer" and discrepancy fault of printer types will occur when set as other types.
b. The setting of the printer's communication rate is not correct. Normally, it is set as the thermal printer when delivery, with a rate of 9600BPS. The communication rate of the printer can be obtained through its self-test and the operations are as follows: press left button first to turn off the power light and then press right button and press left button immediately, the printer starts self-test. The printed self-test result contains the communication rate.

✧ Fault phenomenon: When two or more hosts are networked together, host 2 can receive the alarm message from host 1, but host 1 cannot receive data from host 2.

The networking of MN3010 series host adopts a non-master-slave mode, which means no master or slave distinction between networking machines. The alarm message of one host can be transmitted to the other through the networking line only when they have registered each other’s host number. The fact that host 2 can receive the alarm message

from host 1 indicates the networking line has been connected and host 1 has registered host 2 in its networking setting; The fact that host 1 can't receive alarm message of host 2 only indicates that host 2 fails to register host 1.

✧ Fault phenomenon: When the host is networking, with small communication distance and low rate, the data packages received are far less than the ones sent during bus quality check, and the host networking is abnormal.

The networking of MN3010 series host adopts a relevant advanced CAN BUS protocol at the current, which requires serial connection of networked hosts only and prohibits star connection. Besides, the protocol asks for the setup of a 120Ω terminal resistance at both the beginning and the end of the networking without too much terminal resistance in between, to ensure a high-speed and reliable networking bus.

✧ Fault phenomenon: The host reports short/open circuit.

Hosts of MN3010 series will report "short-circuit fault" automatically in case of short-circuit or bus leakage current (more than 0.5A). When the circuit reports open-circuit fault, check whether the connection of bus output terminal is well and then carry out single-point test for any one-bus terminal, to examine whether the light at this address is blinking. If the light is blinking, it means the bus circuit on the mainboard is at fault.

Chapter 7 Appendix

Appendix1: List of Equipment Types

Types of alarm equipment:

1. IonD (Ion smoke detector)
2. OptD (Photoelectric smoke detector)
3. HeatD (Heat detector)
4. BeamD (Infrared detector)
5. CombD (Composite detector)
6. ConvIon (Interface ion detector)
7. ConvPhoto (Interface photoelectric detector)
8. ConvTherm (Interface heat detector)
9. ConvBeam (Interface infrared detector)
10. ConvCombn (Interface composite detector)
11. Callpoint (Manual button)
12. Heat (CableTemperature sending cable)
13. PresrSwith (Pressure switch)
14. Hydrant (Fire hydrant button)
15. FlowWater (Water flow indicator)
16. Gasalarm (Gas alarm)

Type of feedback equipment:

1. AgentSprnk (Gas spraying)
2. AgentFault (Gas fault)
3. AgentLeak (Gas weightlessness)
4. EMvalve (Electromagnetic valve)
5. SignlValv (Signal gate valve)
6. WetA-Valv (Wet alarm valve)
7. SmkDamper (Smoke exhaust valve)
8. ExhaustFan (Smoke exhaust fan)
9. PositiValv (Positive pressure air valve)
10. PositiFan (Positive pressure fan)
11. BlowValve (Blow valve)
12. Blower (Air blower)
13. FireValve (Fire damper)
14. Fire door (Fire door)
15. DelugeValv (Deluge valve)

16. Generator (Alternator)
17. SprinPump (Spray pump)
18. PresrPump (Stabilizing pump)
19. FirePump (Fire pump)
20. FoamPump (Foam pump)
21. Drencher (Water curtain pump)
22. CutPubPwr (Municipal electricity cut-off)
23. Lift-Down (Elevator forced landing)
24. CurtnHalf (Curtain semi-drop)
25. CurtnDown (Curtain full-stop)
26. Air-condt (Air conditioner)
27. Broadcast (Radio)
28. Sounder (Sounder)
29. PowdrExtn (Dry-chemical fire extinguisher)
30. EmrgncyLit (Emergency lighting)
31. EvacuSgnl (Evacuation light)
32. Return (Back)
33. Horn/Strob (Audible and visual alarm)
34. Horn (Sounder Alarm)
35. Strob (Visual Alarm)
36. ManualCtrl (Manual control button)
37. B-module (Broadcast Module)
38. FIP (Bus Indicating Panel)
39. PowerBox (Power Box)

Statement: This manual has gone through careful check to strive for correctness of the content. Any changes to the product due to the upgrading will not be further notified and the physical product may prevail. The newest version can be required freely from our company. Shenzhen Fanhai Sanjiang Electronics Co., Ltd. possesses the rights of final interpretation and modification!