USER'S MANUAL

DH99E

USER'S MANUAL

Emergency Telephone System Control Panel

Table of Contents

Before operating this device, be sure to read this manual carefully. After commissioning and acceptance, the manual shall be retained by special personnel and kept properly for future reference!

Chapter 1 Brief introduction of fire telephone products

The fire telephone system is the special communication equipment for fire fighting, pursuant to the national standard GB16806-2006 Fire Linkage Control System.

This system is composed of the fire telephone host (hereinafter referred to as host), fire telephone extension (hereinafter referred to as extension) and fire telephone jack (hereinafter referred to as the jack), and is suitable for communication and dispatching in a fire or emergency in the building. In case of fire alarm in the application site, the site personnel can call the host through extension and contact the control center in time. The operator in the control center can also call the extension at the site through the host to know the situation on the site.

1.1 Product features

1) With the two-bus technology, the power supply and communication are compatible on two buses, and are not divided into the positive and the negative, convenient for debugging.
2) It has perfect detection measures, which can detect the short circuit and open circuit of the bus, and make sound and light alarm.
3) The anti-interference performance of hardware and software allows for the adaptability to various complex environments.
4) The voice is subject to differential transmission on the bus, with strong anti-interference capability.
5) The application of silica gel button presents a beautiful appearance, good hand feeling and long service life.
6) The host and extension can call each other and make full-duplex call, and the host can communicate with three extension telephones at the same time.
7) It has the function of recording and displaying the calling and answering time, and can query 120 records of calling and response time between the host and the extension.

8) The recording is subject to circular coverage, first-in-first-out mode and automatic recording is enabled during a call.

1.2 Technical parameters

1) Power supply:

   Mains power: AC 220V (+10%, -15%, 50Hz)

   Standby power supply: External DC24V

2) Bus current: ≤600mA
3) Frequency range: 300～3400Hz
4) Transmission attenuation: ≤5dB
5) Recording duration: more than 20min
6) Length of bus: ≤1,500m
7) Weight: ≤10kg
8) Dimensions: 406×331×174（mm）
9) Working environment: Temperature 0～+40℃, RH ≤95%
10) Bus capacity: up to 99 code addresses (set by code switch in binary mode)
11) The host supports communication with at most 3 extensions simultaneously
12) Support up to query and playing 99 segments of recording
13) At most 120 call messages can be recorded
14) Line condition: extension loop resistance (exclusive of phone resistance) ≤ 300 Ω

Chapter 2 Appearance and functions of fire telephone

2.1 Front panel

See Fig. 1

Fig. 1 Front panel

Table 1 Description of the areas on the front panel

No.	Name	No.	Name
1	Telephone LC	6	Key lock
2	Telephone indicator		
3	Telephone keys area	7	Broadcast keyboard plate (reserved, no function)
4	Telephone handle		
5	Telephone speaker jack		

2.1.1 Description of functional keys and indicators (see Fig. 2 and Table 2)

Fig. 2 Functional keys and indicators

Table 2 Description of front panel indicators

Indicator	Color	Description
Power	Green	Normally on when system is normally provided with power.
Call	Red	The indicator is normally on when an extension is calling or the host is calling extension, and remains off in other cases.
Communication	Red	The indicator is normally on when the host and extension are communicating, and remains off in other cases.
Mute	Green	In case of extension calling or failure, press "Mute" and the indicator is normally on, and remains off in other cases.
Standby power failure	Yellow	The indicator is normally on if no standby power is connected, and remains off in other cases.
Recording/Playback	Green	The indicator is normally on during communication or broadcasting recording, and remains off in other cases.
Storage failure	Yellow	The indicator will flash in the event of internal memory shortage less than 10%, and is normally on when recording is full, namely when the internal memory is 0, and remains off in other cases.
Bus failure	Yellow	The indicator is normally on in case of bus short/open circuit, and remains off in other cases.
Extension failure	Yellow	The indicator is normally on in case of extension address loss or repeated code, and remains off in other cases.
Mains failure	Yellow	The indicator is normally on in case of abnormal mains power condition, and remains off in other cases.

2.2 Rear panel

See Fig. 3

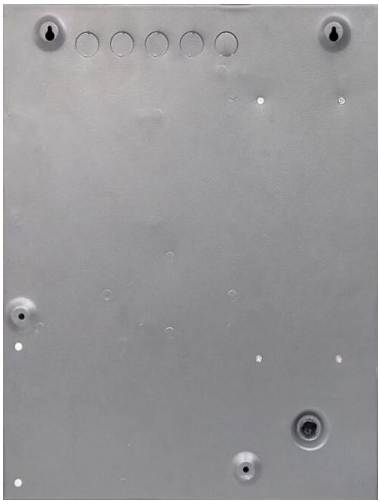

Fig.3 Rear view

Chapter 3 Installation and commissioning of fire telephone

3.1 Dimensions of chassis

Unit: mm

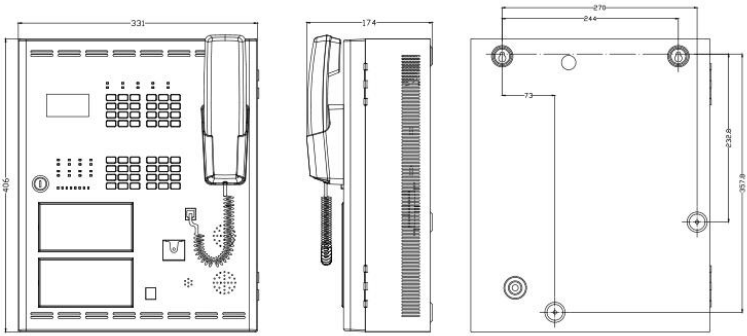

Fig. 4 Dimensions of chassis

3.2 Wiring requirement

3.2.1 Selection of bus wire: It is suitable to select a twisted pair with a wire diameter of not less than 1.5mm^2. The cable with a wire diameter of not less than 1.5mm^2 shall be used in the field with serious interference. The length of wiring shall be from the main machine to the farthest end extension, and the length of wire shall not exceed 1,500 meters.

3.2.2 Conduit wiring requirements: the metal pipe, the flame-retardant rigid plastic pipe or the closed type wire groove shall be threaded separately, and it is prohibited to pass through the same pipe together with the signal line, power line, audio line and the like in other transmission system lines or fire fighting systems.

3.2.3 Wiring:

1) Power line connection: Connect the mains supply correctly. The terminals corresponding to the three wires (red, blue and black) leading from the power supply module are fire telephone standby terminals, and the black line corresponds to a negative electrode. When the external DC24V power is used, please connect to the terminals corresponding to the red and black lines. The blue line corresponds to the reserved standby power terminal.

2) Output line connection: the two communication lines are connected to the terminals, regardless of the positive and negative, of the "Telephone Bus L1 L2"of the terminal interface board.

3.3 Functional check of telephone host

3.3.1 Start: After confirming that the installation and wiring are correct, turn on the mains switch. The "Power" indicator (green) on the front panel is illuminated after normal start-up, the LCD displays the time and "Initializing..." 8 seconds later, the LCD status is shown as in Figure 5, indicating that the system is working properly and is in standby mode. If there is no operation within 30 seconds, the liquid crystal automatically adjusts the brightness and restores the brightest when there is an operation.

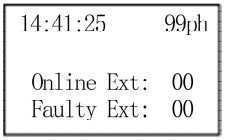

Fig. 5 Standby mode

3.3.2 Self-test: In the non-call and call state, press the Self-Test key and enter the operation password to perform the functional inspection on the LCD, indicator light and horn of the host. During the self-test, the LCD displays a white screen, the indicator lights are fully lit, and the horn beeps, indicating that the liquid crystal display, indicator light and horn are intact.

Note: The operation password defaults to 123456.

3.3.3 Key lock control: When the manager exercises inspection on the inside of the host, the front panel can be opened with the key. The front panel shall be locked at

ordinary times to prevent the non-operator from operating.

Chapter 4 Operating instructions

4.1 Host setting

Press the Menu key to enter the main menu after entering the correct password, and the right cursor can be moved up or down by the key "▲"or"▼". The main menu is divided into two screens, and the cursor stays on the first screen by default, as shown in Figure 6-1 and 6-2.

Fig. 6-1 Main menu 1

Fig. 6-2 Main menu 2

Note: After entering the menu, if the host is not operated within 30 seconds, the host will automatically return to the standby interface.

The operation permission to the host has two levels, and the operation with the permission requirement must input the password of corresponding level for confirmation. Entering Menu, Registration, Reset and Self-Test requires operation permission level one, and record deletion operation permission level two.

Note: The first-level and second-level password defaults to 123456 and 456789 respectively.

4.1.1 Password query and change

1) In standby mode of the host, press Menu key (enter the password), and the LCD will display as shown in Figure 7. The host waits for password input and identification. After entering the 6-bit password, press OK. If the password is entered incorrectly, the LCD screen will, as shown in Figure 8,

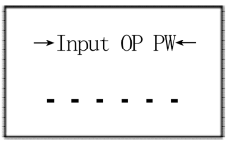

Fig. 7 Password input interface

prompt the input password invalid, and return to the standby interface after 3 seconds.

2) Press the Menu key and enter the correct password to enter the main menu, find "4. Password modification by "▲" or "▼" and enter the entry, as shown in Figure 9. Enter "1. Change the Operation Password" or "2. Change and Delete Password" and enter twice the same new password to complete the password modification, and return to the password modification interface.

Note: The operation password includes the password for entering menu, registering, resetting and self-checking, that is, the first-level password; and deleting the password refers to the recording deletion password, that is, the second-level password.

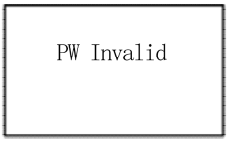

Fig. 8 Wrong password interface

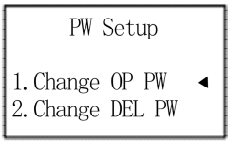

Fig. 9 Password change interface

4.1.2 Information query

Press the Menu key, enter the main menu after entering the correct password, select and enter "1.Information Query" by "▲" or "▼", as shown in the figure 10-1 and 10-2. In the information query interface, you can query the details of call records, enrollment status, fault status, memory status and current date.

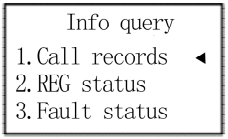

Fig. 10-1 Information query interface

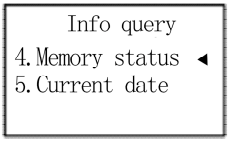

Fig. 10-2 Information query interface

1) Select and enter 1. Call History by clicking "▲" or "▼", and each call, answer or hang-up time can be displayed, as shown in Fig. 11-1, up to 120 call messages can be queried. The second row on the liquid crystal displays the words "Call information + Section number", as shown in Fig. 11-2, indicating how many pieces of recording have been recorded, and can be played with the playback key. "11#->Host" means 11# extension calls the host; the "Host-slave 11#" indicates that the host calls the 11# extension.

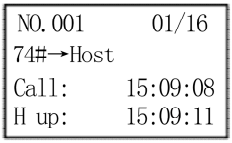

Fig. 11-1 Communication information interface

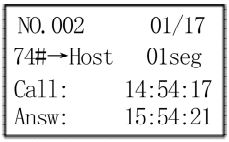

Fig. 11-2 Communication recording interface

2) Select and enter "2. Registration Status" by the "▲" or "▼", display the total number of extensions and extensions registered for the current system, as shown in Figure 12. The last digit of the first column indicates that the total number of currently registered extensions is 10, the highlighted "01", "02" and "14" indicates the registered extension, which can be viewed either forward or backward by the "▲" or "▼".

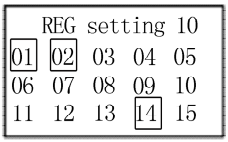

Fig. 12 Registration setting interface

3) Select and enter "3. Fault Status" by pressing "▲" or "▼", display the fault status of

current extension with address or the jack, as shown in Fig. 13. The last digit of the first column indicates that the total number of currently registered extensions is 2, the highlighted "08" indicates the faulty address. Page turning is enabled by pressing "▲" or "▼". The address is displayed when the registered address is found with fault, and the fault may be caused by address loss, repeated code, etc.

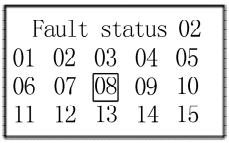

Fig. 13 Fault status interface

4) Select and enter "4. Internal Memory Status" by pressing "▲" or "▼", and display the recording storage status in the host, as shown in Fig. 14. You may view the recording memory space under "Internal Memory Status". When the memory usage is greater than 90% during recording, the Storage Alarm indicator lights up; when the memory usage reaches 100%, the indicator light is always on, the host gives an alarm sound, and the alarm sound can be eliminated manually. After recording has been deleted, the memory occupancy is restored to 0%, the Storage Alarm indicator is off.

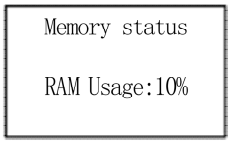

Fig. 14 Internal memory status query interface

4.1.3 Recording query and deletion

This system can store a recording period of 20 minutes, and the recording module will record the content of each call, and the "Record/Playback" indicator (green) is ON. After the call is finished, the recording is stopped automatically, and the "Record/ Playback" indicator on the host panel is off.

1) Recording query: There are three ways to inquire the recording:

Method 1: After entering the main menu (with the first-level password), select and

enter "1.Information Query" by pressing "▲" or "▼", and select the "1. Call Records" to display each call, answering, or hang-up time, up to 120 pieces of information, 99 segments of call records, which can be queried forward or backward by pressing "▲" or "▼", as shown in Fig. 11-1. The second line displays the words "Call Information + Segments", as shown in Fig. 11-2, showing the recorded content. At this time, press the "Playback" key to play the sound, the "Record/Playback" indicator (green) on the host panel is ON, and press "Stop" may stop playing or automatically stop playing when the segment of record is expired, and the "Record/Playback" indicator on the host panel is off.

Method 2: under Standby mode, directly enter Recording Query interface by pressing "▲" or "▼", move forward or backward with "▲" or "▼" to select the specific recording segment, and press "Playback", the "Record/Playback" indicator (green) on the host panel will be ON, and you may stop playing by pressing "Stop", then the "Record/Playback" indicator on the host panel is off.

Method 3: under Standby mode, directly enter the Call Information Query interface with the key "Backspace/Query", and then operate in the same procedures specified in the Method 1.

Note: All recording information is stored in chronological order, and the recording information includes the contents such as the time, address, recording segment number, etc.

2) Delete Recording: After entering the main menu (with the second-level password), select and enter "3. Delete Recording" by "▲" or "▼", as shown in Fig. 15. Select Yes with "▲" or "▼" and press OK, and delete the stored recording after entering the correct second-level password. You may exit the settings by selecting No and pressing OK or Exit, and return to the previous main menu interface.

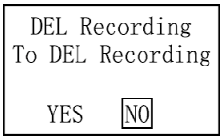

Fig. 15 Delete Recording interface

4.1.4 Time query and setting

1) **Time query:** Press the Menu key, enter the main menu after entering the correct password, and select and enter "1.Information Query" by the key "▲" or "▼", and then select "5. Current Date" to see the time, as shown in Fig. 16, press the Exit key to return to the previous level screen.

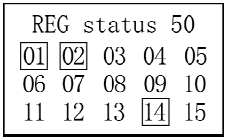

Fig. 16 Current date query interface

2) **Time setting:** After entering the main menu (with the second-level password), select "5. Time adjustment" with "▲" or "▼", and the setting interface is shown in Fig. 17. Start time setting from "Date", increase or decrease the number in the range of 0-9 with "▲" or "▼", and press OK after setting and also proceed with the next setting. After setting the last digit of date, the system will automatically jump to "Time" setting, and you may press OK after time setting to return to the main menu interface.

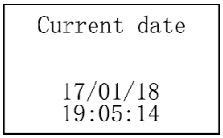

Fig. 17 Time setting interface

4.1.5 Online extension query and registration

1) **Registration query:**

In the Standby mode, directly enter Information Query interface with the "Backspace/Query" or the "Menu" key, enter the main menu after entering the correct password, select "1. Information Query", and select "2. Registration Status" and enter Registration Status interface with the key "▲" or "▼", as shown in Fig. 18.

The last number in the first column means that the total number of registered extensions is 50, and the highlighted "011", "02" and "14" refers to the extensions registered, others means those not registered. You may view the contents by turning page with the key "▲" or "▼".

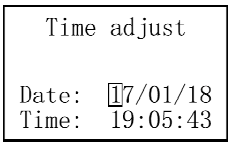

Fig. 18 Registration status interface

2) Automatic registration: In the Standby mode, press Registration, enter the Automatic Registration interface after entering the correct password, as shown in Fig. 19. The host will automatically conduct routing inspection from 1 to 99 and register online extensions. After registration, it will automatically return to Standby mode, and the registration result can be viewed in the Registration Setting and Registration Status.

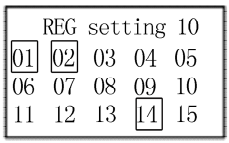

Fig. 19 Automatic registration interface

3) Manual registration: Press Menu, enter main menu after entering the correct password, select "2.Registration Setting". Its difference from the Registration key on panel is that, the latter enables automatic discovery and registration of online extensions, while the Registration Setting is for manual registration, you may select the extension address number to be registered with "▲" or "▼", press OK to register the corresponding extension or cancel the registration by pressing OK again, as shown in Fig. 20.

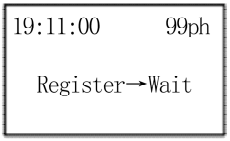

Fig. 20 Manual registration interface

4.2 System operation

4.2.1 Host calls the extension

In the Standby mode, input two-digit extension number, LCD will display the extension number and the status of "Host is calling an extension", as shown in Fig. 21-1. The extension being called will ring, ring-back tone can be heard at host handle, and the "Call" indicator (red) on the host panel is ON, and call record is saved. After off-hook at the extension, "Host->04#" on the LCD is changed to "Host<->04#", indicating the communication status, as shown in Fig. 21-2.

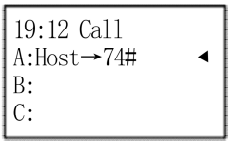

Fig. 21-1Host calling display interface

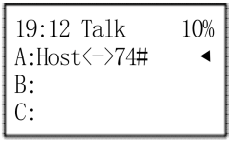

Fig.21-2 Communication interface

Note: For a host calling an extension, if the extension is not off-hook within 1 minute, the host will hang up automatically. The host can call up to 3 extensions at the same time, and then the other extension calling the host will be provided with the busy tone from host.

4.2.2 An extension calls the host

In standby mode, the caller at extension side can hear the ring back tone after off-hook, the LCD displays the extension number and the "An Extension Calls the Host" state, as shown in Fig. 22-1, in which the "Host<-" section flashes, the host horn sends "beep" sound, and after pressing "Mute", the call sound can be eliminated. Press the "Get Through" key to get through the extension, and the LCD will convert to "Host<-04#" from "Host<->04#" and enter the call state, as shown in Figure 22-2.

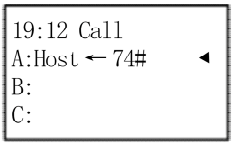

Fig. 22-1 An extension is calling the host

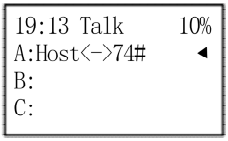

Fig. 22-2 Communication interface

Note: If the extension calling host is not answered within 1 minute, the host automatically hangs up and returns to the standby state, and the extension is provided with busy tone.

4.2.3 Get-through and on-hook

1) **Get-through:**

a. After the host has successfully called an extension, it is able to communicate by the called extension after off-hook. As shown in Fig. 22-2, the LCD indicates that the host and the address extension have entered the call state, and the "Communication" indicator (red) is lit. 20% in the first column on the LCD indicates that the current recording module has occupied 20% of the nominal memory.

b. When a single extension calls the host, press the "Get Through" key to connect the extension; the LCD converts to the "Host <-04#" from "Host<->04#" and enter the call state.

c. When multiple extensions call the host, select the extension that needs to be got through with the key "▲" or "▼", and press the key "Get Through" to enter the communication state.

d. The recording will be started automatically after the host and extension are communicating with each other, the "Recording/ Playback" indicator (green) is ON and the call contents are saved.

2) On-hook:

a. When a single extension calls the host, simply press the key "Hang Up" to hang up the extension and terminate the call.

b. When multiple extensions are calling or communicating, select the extension that needs to be hung up by clicking the "▲" or "▼", and press the "Hang Up" key to terminate the call or communication.

c. The terminated extension goes to busy tone; the recording will be stopped when the host has no call line.

d. When the extension handle is put down, namely hang up, the information will disappear from the LCD.

e. After the main machine handle is on-hook after off-hook, all extensions can be hung up.

4.2.4 Limitation on the line status and number

1) The number of "An Extension Calls the Host", "Host Calls an Extension" and "Calls" that exist simultaneously shall not be greater than 3.

2) When the total number of calling or communication lines is 3 routes, the host cannot call another extension, and the extension calling the host is given the prompt of busy tone.

Chapter 5 Description of supporting equipment for the fire telephone system

The host can be used with an extension and a jack, wherein the extension covers the telephone extension with address, the telephone handle with address, the telephone extension without address, and the telephone handle without address. The jack includes the jack with or without address. The system supporting equipment is detailed in Table 3, See Fig. 23 for the wiring diagram of the supporting equipment.

Table 3 List of supporting equipment for fire telephone system

Product name	Equipment model	Remark
Host	DH99E	Emergency telephone system control panel
Extension	DH9901E	Telephone extension with address
	DH9902E	Telephone handle with address
	DH9901KE	Telephone extension without address
	DH9902KE	Telephone handle without address
Jack	DH9905E	Jack with address
	DH9905KE	Jack without address

Note:

(1) The telephone extension with address (DH9901E) and the telephone handle with address (DH9902E) are only different in the form of buses, and both are collectively referred to as the extension.

(2) The telephone extension without address (DH9901KE) and the telephone handle without address (DH9902KE) are only different in the form of buses, and both are collectively referred to as the extension without address.

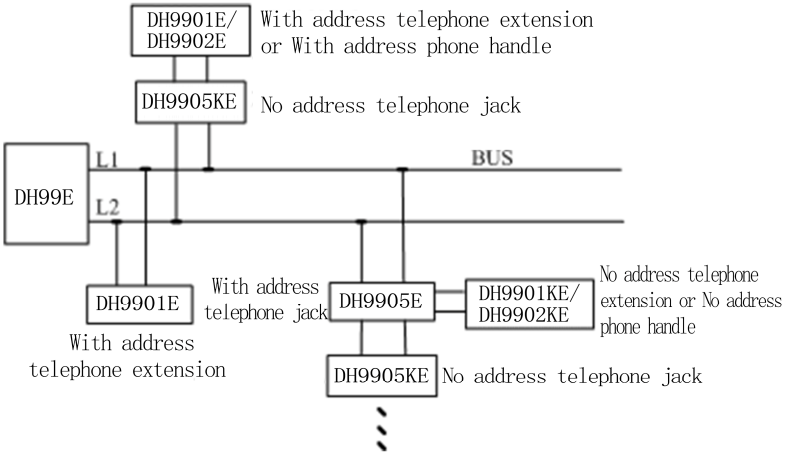

Fig. 23 Wiring diagram of supporting equipment

5.1 Telephone extension with address and telephone handle with address (collectively referred to as the extension)

1) The extension is used as the peripheral equipment of the host, and the power supply is provided by the host, regardless of the positive and the negative.

2) The extension is in standby mode, the red indicator light flashes once every 5 seconds; and when the extension is off-hook and the extension is set with address, the red indicator light is normally on.

3) The extension can call the host after off-hook, is given the ring back tone, and if the host does not operate or actively hangs up within 1 minute, the extension ring back tone is switched to busy tone; if the host is busy, the extension is answered with ring tone. For the host calling an extension, if the extension hook is in the standby mode after pressing flash-hook, the extension gives ring tone, and after off-hook, turns off the ringing tone.

4) Enter the communication state with ring tone; if the extension flash-hook is in the pop-up standby state, the extension gives the ring tone, and flash-hook bounces after being pressed, the extension will be in the communication state. The host will automatically hangs up the extension if the extension is not off-hook within 1 minute.

5) The effective address range of extension is 1-99, and the extension address does not allow the repeated number; otherwise, the extension cannot work abnormally. Both the telephone extension with address and the telephone handle with address

can be used in conjunction with a non-address jack (DH905KE) provided that no address jack is directly attached to the fire telephone bus.

5.2 Telephone extensions without address and telephone handles without address (collectively referred to as extensions without address)

1) The extension without address can be used together with the jack with address (DH9905E), or in conjunction with the jack without address (DH905KE) (provided that the jack without address has the address jack).
2) When the extension without address accesses to a jack and the flash-hook bounces, namely start to call the host, the red indicator light is on, and ring the back tone. Pulling out from the jack is equivalent to on-hook and the red indicator light is off. If the host hangs up the extension without address, the extension will be given the busy tone, and the red light is normally on.

5.3 Jack with address

1) As a peripheral device to the host, the jack with address (DH9905E) cannot be called by a host, and a power supply is provided by the host, regardless of the positive and negative.
2) In the standby state, the red indicator flashes every 5 seconds; the indicator light is normally on when the extension without address is accessed and the flash-hook bounces.
3) The jack with address does not allow the repeated numbers, otherwise the jack will not work properly. The jack with address can be used directly with the telephone extension without address (DH9901KE) or the telephone handle without address (DH902KE), and can also be connected with a multi-stage jack without address (DH905KE).

5.4 Jack without address

1) As a peripheral device to the host, the jack without address (DH9905KE) is

provided with power supply by the host, regardless of the positive and negative. The indicator light flashes once every 8 seconds when in the standby state, and the indicator light is off after accessing the extension with address.

2) If the jack without address is directly connected to a bus, it should be used together with the telephone extension with address (DH9901E) or with the telephone handle with address (DH9902E).

3) If the jack without address is directly connected to a jack with address (DH9905E), it can only be used together with the telephone extension without address (DH9901KE) or the telephone handle without the address (DH902KE).

Chapter 6 Other instructions for the fire telephone

6.1 Precautions

1) The power supply line connected to the commercial power shall be wound in three turns around the magnetic ring before accessed to the system, and the magnetic ring shall be firmly fixed by wires.
2) External DC24V is used as the standby power supply, and attention shall be paid to the positive and negative polarity, and the connection to standby power supply must be performed by the professional.
3) When in use, the housing of the host shall be reliably grounded.
4) The system shall operate in the environment of 0 ~ + 40 ℃, free from corrosive gas.
5) The host shall be in standby mode at ordinary times so as to automatically inspect the system and timely find various faults.
6) Conduct self-test on the system regularly to detect whether liquid crystal, audible device and indicators are in good condition.
7) Ensure the system with stable operation, and the time interval of continuous switch shall be greater than 10 seconds.
8) In the non-calling and calling state, press "Reset" key on the front panel and enter the first-level password to reset.
9) When a short circuit fault occurs on the bus, the system power supply shall be disconnected. After the fault is removed, the system can be re-energized.
10) When the system recognizes faults that cannot be ruled out, it may be the problem relating to the system circuit, and it is recommended to contact the manufacturer for repair.

6.2 Fault analysis and troubleshooting

See Table 4

Table 4 Fault analysis and troubleshooting

Fault	Possible cause	Solution
Bus related open circuit	The bus is not connected to the extension with address or the jack with address	The bus should be connected to at least one extension with address or jack with address
	Fuse damaged	Replace with the fuse of the same specification
Bus related short circuit	Short circuit	Check wires
System does not work after power-on	Wrong electrical connection	Check electrical connection
	Fuse damaged	Replace with the fuse of the same specification
Incorrect clock display	Button cell is not properly installed	Install button cell
The extension cannot call the host	Extension address is out of range	Change extension address
No alarm sound	The horn connection wire is not connected.	Connect the wires

Chapter 7 Accessories

Name	QTY	Unit	Remark
Instruction Manual	1	Copy	
2A fuse	2	pcs	5*20mm, for fire telephone interface terminal board
5A fuse	2	pcs	5*20mm, backup
6A fuse	2	pcs	5*20mm，PS-03 for standby power supply F2
Magnetic ring	1	pcs	Outer diameter Φ25, inner diameter Φ15, height: 12
Wiring harness	1	pcs	Used to secure the magnetic ring on the mains power line
Certificate of Conformity (on the equipment body)	1		
Conduit wire sleeve	6		
Door lock key	1	pcs	
Power line	1		
Fire telephone handle	1		
Base	1		
M4*8 screw	2		For installation base