Longhorn

LHD6000

INSTALLATION
MANUAL

INSTALLATION MANUAL

16.Table of zone types descriptions

Wire zones of the control panel

Zone number	Installation position	Type	Bypass or not
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Wireless zones

Zone number	Installation position	Type	Bypass or not
21			
22			
23			
24			
25			
26			
27			
28			

Keypad wire zones

Zone number	Installation position	Type	Bypass or not
41			
42			
43			
44			
45			
46			
47			
48			

Thank you for using LHD6000 alarm system of Longhorn. Please read the Installation Manual carefully before installing and using the alarm system in order to acquaint you with its remarkable performance and use this system better.

If you have any problem while using, please contact the installer or our Customer Service Center: 800 830 8196.

INSTALLATION INFORMATION

User name	
User address	
Installer name	
Installation company	
Installation date	
Tel of installation company	
Fax of installation company	
Alarm monitoring center	
Address of alarm monitoring center	
Tel of alarm monitoring center	
Tel of the control panel	
Note: This blank should be filled by installation principals and confirmed by relevant companies or principals.	

CONTAINER LOADING LIST

The components of the product are packed in a box as followed. Open the box and check it carefully. If finding deficiency, please fetch the provider in time.

Number	Name	Amount
1	Master controller	1
2	Wireless remote controller	2
3	Installation manual	1
4	Keypad	1
5	Accessory bag	1

Note: There are two anti-tamper switches of control panel, twenty-four EOL resistances (2.2k), two keys for cabinet of control panel, telephone line, telescopic antenna, keypad anti-tamper switch spring, screw, expansion pipe;and keypad fixed iron stand, connecting line, installation frame, keypad wring plate in secret installation. More keypads and remote controllers can be purchased in addition.

Types of fault	Potential reasons	Solutions
Code learn unsuccessful	Different detectors use the same code learn	Cancel this zone ,check the code learn again, make sure the detector code learn has not been used
	The different carrier frequency of the detector and the control panel	Confirm carrier frequency of the detector
	The detector does not work normally	Change the detector and try again
Wireless zone misinformation	Different wireless zones use the same code learn	Cancel this wireless zone change the code learn and try again

15. Technical parameters

Control panel:
Size: 274mm×264mm×86mm

Operating voltage: 220V AC

Static operating current: 120mA

Operating temperature: -10℃~+55℃

Keypad:
Size: 150mm×95mm×30mm

Operating voltage: 12V DC

Static operating current: 100mA

Operating temperature: -10℃~+55℃

Wireless remote controller:
Operating frequency: 315MHz/433MHz/868MHz (optional)

Effective distance: ≥50 m (without obstacles)

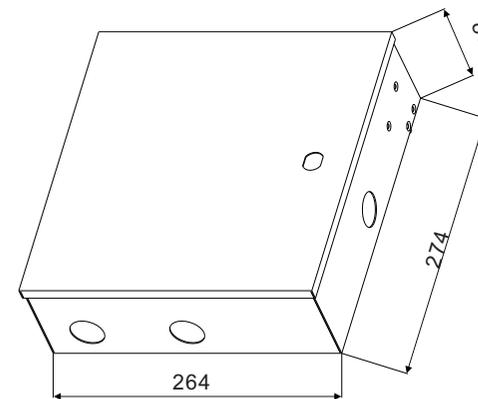Battery: two button batteries (2016), 75mAh

86

274

264

Figure 1: Appearance and dimension of
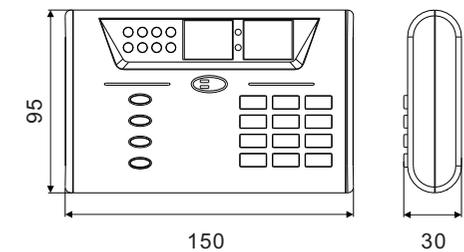the master controller

95

150   30

Figure 2: Appearance and dimension of
the keypad

3. Alarm warning devices such as bells may not alert people if they are installed in an improper position. If the alarm bell is installed outside, there are less likely to waken or alert people inside the bedrooms.

4. Telephone line used to transmit alarm signals may be out of service for any reason, or can not perform communication normally for vicious attack.

5. Unsuitable installation position of detectors. If smoke detector is installed in an improper position, it is not easy for smoke to enter the detecting area. Because of doors or walls, it is hard for the detector to sense fires in other rooms, e.g. the detector in the first floor can not sense fires in the second floor.

6. Lack of maintenance may lead to the system disabled. Weekly testing is required to ensure proper operation of the system.

14. Troubleshooting

Types of fault	Potential reasons	Solutions
The system does not dial to alarm when alarm happens	Do not set correct phone number	Set correct phone number
	User's phone is busy during alarm	Set two more phone numbers
Telephone can not work normally as the system is connected into telephone network	Few ringing attempts lead the system to hang up the phone automatically	Increase ringing attempts. Refer to ringing attempts adjustment
Remote controller can not operate the system	Battery is drained	Replace it with a new battery
	Enroll wireless remote controller without programming	Enroll wireless remote controller with programming
	Wireless remote controller is too far from the controller or blocked by obstacles.	Adjust the distance or angle between the system and wireless remote controller
Keypad can not operate the system	Keypad logout	Remove the keypad from the control panel, then connect it to the control panel again or restart the system
Wireless zones can not monitor normally	Do not enroll wireless detector or the detector is removed	Enroll the detector again.
The indicator of power on keypad does not work	The controller plug is not inserted in DC socket, or it is not connected well	Check the connection of the plug or replace the socket.
	Keypad is wired incorrectly	Check whether keypad is wired incorrectly or not, and wire
The system has no feedback when zone is touched	The zone is bypassed	Cancel bypass of the zone
	When disarm, zone 1,2,3 do not alarm; when arm-stay, zone 2 do not alarm.	Operate normally
Timed arm/disarm can not work	Timed arm/disarm is not set in valid status	Set timed arm/disarm in valid status
	Time for arm/disarm may be the same	Reset the time for arm/disarm
	When emergencies happen or the system enters delay status, it will not arm	Refer to Timed arm/disarm

CONTENTS

12. Answering alarm communication code

Communication between control panel and alarm center have two formats ADEMCO 4+1 and ADEMCO Contact ID.The event code identifications as followed:

ADEMCO Contact ID TABLE OF EVENT CODES

NO.	DEFINITION
100	Panic zone alarm
110	Fire zone alarm
121	Duress code, Duress zone alarm
131	Perimeter zone alarm
132	Active zone alarm
134	Entry/Exit zone alarm
137	Control panel anti-tamper alarm. Anti-tamper zone alarm
145	Keypad Anti-tamper
151	Gas zone alarm
301	AC power failure
302	DC power low-voltage
382	Keypad loss
401	Arm/Disarm operation
441	Arm-stay operation
455	Auto-arm/disarm failing
521	Bell canceling function
570	Zone bypass operation, zone /user is 99 represent all zones bypassed or all zones bypass canceling

ADEMCO Contact ID OPERATION OF USER ARM/DISARM Number

00	Operation of using keypad without password such as arm-away disarm and arm-stay
01	User password to arm/disarm, by using keypad or remote telephone
02	Operation code of Arm/disarm by using keypad or remote telephone
11 ~ 15	Remote controller arm/disarm
21 ~ 25	Alarm for disarm/arm operation by using telephone numbers from 2 to 6
98	Using duress code to disarm, press 98 to send a disarm information before duress alarm information
99	Timed auto-arm/auto-disarm

ADEMCO 4+1 Table of event codes NO. Identification

NO.	DEFINITION
1	Plunder alarm, duress zone
2	Fire alarm, including fire gas and panic zone
3	Rob alarm, Entry/Exit /Active/Perimeter/ Anti-tamper zone
4	Disarm
5	Arm
6	AC power failure
7	Battery low-voltage
8	Restore default

13. Limitations of the alarm system

Although it is an advanced design security system, it does not offer guaranteed protection against burglary, fire, or other losses. Any alarm system, whether commercial or residential, is subject to compromise or failure-to-warn for a variety of reasons. These include:

1. Intruders may gain access through unprotected openings or have technical sophistication to invalidate the system.

2. Most detectors can not operate without power, so if AC power loss and backup power is void, the alarm system can not work.

If password is wrong, user can input password and operate again without inputting '#' in advance. The control panel will hang up if password is input incorrectly three times or user does not press any key in 30 seconds during the operations.

When alarming, the control panel dial user telephone. User can operate all of the functions above without input password and "#" , only input the operation digits directly. The prompt voice is like the above. If user press the operation digits（0，1，2，3，4）but not "5" ,after this command is operated ,the control panel will not dial any other telephones.

When alarming if there is no voice after receiving the telephone, the user can press any key (key '5' recommended), the control panel will send out voice immediately. This key will not be regarded as the operation digit.

Note: Do not press any keys during sounds 'Di' or messages can not be received correctly. User had better not press any key when the system is in voice alarm status. When dialing the telephone number of control panel, user can operate continually after inputting password correctly. It is necessary to input operate digit and '#'. Refer to 11.2 for detail information.

11.1 Telephone disarm
After hanging up the telephone number of the control panel , press '# + 4digits user password + 3 + # ' to disarm, for example, if user password is 1234,press '#12343#'. When the control panel dials to alarm, user can press 3 to disarm after hearing alarm voice.

11.2 Telephone arm-away
After hanging up the control panel, press '# +4digits user password + 1 + #' to arm, When emergencies happen, user has to disarm first and then arm the system again. For example, if user password is 1234, press '#12343#' and then press '1#' to arm after hearing prompt sounds. When the control panel dials to alarm, user can press 3 to disarm and then press 1 to arm after hearing alarm voice.

11.3 Telephone arm-stay
After hanging up the system, press '# + user password + 2 + #' to arm, When emergencies happen, user has to disarm first and then arm the system again. For example, if user password is 1234, press '#12342#'.

When the master controller dials to alarm, user can press 3 -2 to arm after hearing sound.

11.4 Telephone field monitor
After hanging up the control panel, press '# + 4digits user password + 4 + #' to monitor on the spot. For example, if user password is 1234, press '#12344#'.

When the control panel dials to alarm, user can press 4 to monitor his/her house after hearing sounds. The control panel will not dial any other numbers.

The field monitor time is about 30 seconds, this status will be over after hearing the prompt sound "Di" , and user can operate continually in ten seconds.

11.5 Current alarm type hearing
After hanging up the control panel, press '# + 4digits password + 5 + #' to hear present alarm type. For example, if user password is 1234, press '#12345#'. The control panel will play the alarm sounds 5 times and pause 5 seconds among them. If no key is pressed, the system will hang up automatically. If no emergency happens, user can hear 'Di-' twice.

When the control panel dials to alarm, press 5 to hear alarm type. The system will play the alarm voice 5 times and pause 5 seconds among them. If no key is pressed, the system will hang up automatically.

11.6 hang-up / stop dialing to alarm
When the control panel dials to alarm, user presses 0 after hearing alarm voice, the control panel will hang up automatically and not dial any other numbers.

When dialing via phone, the system can use operation digit '0' to hang up automatically.

SYSTEM INSTALLATION FIGURE

1. General

This is a new kind of intelligent security product. It transmits alarm information to the user via telephone network and is remotely controlled to deal with emergencies in time, ensuring user's personal and property safety. This product has complete functions, flexible
configuration, strong destroy protection and convenient operations, being suitable for residences, stores, factories, warehouses, banks, schools and hospitals, etc.

2. Main features and functions

● Connect 8 or 16 programmable wired zones and 8 programmable wireless zones

● Connect 4 keypads at most, each of them can extend 2 programming wired zones

● Dial alarm center, user's cell phone or fixed telephone automatically with voice alarm while emergencies happen

● Compatible with: ADEMCO 4+1 , Contact ID Communication protocol, it is capable of alarming in network or in personal phone alone

● Field monitor function

● 5 wireless remote controllers at most

● Anti-tamper of the control panel and keypad, anti-snipping of keypad communication line

● Optional accessories: probes of fire-proof and theft-proof; glass break detector, etc

● Wireless learn code function with simple usage

● Keypad programming and LED display

● Restore user's password to factory defaults by hardware and restore the system factory defaults by software

● Dial the alarm system via external telephone to arm/disarm in other places

● Record 40 latest alarm events

● 3 groups timed auto-arm/auto-disarm time setting

● Malfunction alarm: AC power fail, low voltage and telephone line loss

● Set real-time clock inside

● User addresses recording function

● Programmable relay output

3. Terms definitions

Detector: A facility that detects intrusion and abnormal state automatically via some electric or physical methods and outputs switch signals or wireless signals to the system for disposal, then sends out alarm signals, such as infrared detector, smoke detector, etc.

Protection Zone: An area within the detection range of one or one ground detectors, described by numbers in the system.

Bypass: Close one of the zones temporarily, so that it can not alarm while activating the zones freely.

Arm-away: The armed state while going out. All the zones without bypass are in alarm state.

Arm-stay: The armed state at night. All the zones are in alarm state except active zone.

Disarm: Cancel the alarm information that has happened. Close the entry/exit zones, active zones, perimeter zones. Other zones are still in armed state.

24-hour zone: No matter armed or disarmed, it is in effective detecting status. It is usually used in fire alarm, plunder alarm and other emergent alarm which can be cancelled only by password holder.

9.3.33 Zone type initialization
Enter: 950

Operations: (PROG→user password→#)→950→#.

9.3.34 System defaults restoring
Enter: 960

Operations: (PROG→user password→#)→960→#.

Functions: After the operations, all parameters restore to defaults in factory setting except user password and

9.3.35 Keypad logout
Enter: 990

Operations: (Program→user password→#)→990→#.

Functions: After keypad logout, the keypad can not perform any operation to the system .User can remove keypad from the control panel. Connect keypad to the control panel again for restoring the operation.

Note: If remove keypad from the circuit without logout, the system will send out an alarm of keypad loss,

10. Wireless remote controller operation

Wireless remote controller have 4 keys which can achieve operations of arm away/stay, disarm and panic alarm without user password. Press keys on the remote controller towards the control panel to perform corresponding operations.

10.1 Arm-away
Press 'Away' key on the wireless remote controller, the system enters arm delay status, status indicator on keypad keeps on, buzzer beeps continuously. When arm delay is over, buzzer stops chirping.

10.2 Arm-stay
Press 'Stay' key on the wireless remote controller, the system enters arm delay status, status indicator on keypad flashes, buzzer chirps once.

10.3 Disarm
Press 'Disarm' key, the system enters disarm status, status indicator on keypad is off, buzzer chirps once.

10.4 Panic
Press 'Panic' key for 2 seconds, the system will alarm automatically .The zone number is 17 and type is 'Panic'.
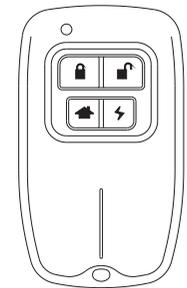
Arm away
Arm stay
Disarm
Panic

11. Remote telephone operation

User can dial telephone number of the control panel, and perform the operations: arm away/stay, disarm and field monitor and hearing alarm types.

Dial telephone number of the control panel for more than ringing attempts set. The system will answer automatically and announce the user with a sound 'Di'. Then user presses '# + 4 digits user password + 1 operation digit + #, the control panel will operate corresponding commands.

6 operation digits,1 means arm-away, 2 means arm-stay, 3 means disarm,4 means field monitor ,5 means hearing current alarm sounds,0 means hang-up / stop dialing to alarm.

For example, user password is 1234. To disarm the control panel, user can press '# 1 2 3 4 #' after switching on the system. If the operations are performed correctly, 'Di' will be heard once. If the operations are performed incorrectly, 'Di' will be heard twice.

9.3.26 User address recording   Enter: 700

Operations: (PROG→user password→#)→700→#.

Functions: Record user address. User can record sounds for 4 seconds, which can be achieved by 'Record' key on the control panel. While recording, the green indicator for recording is on. The recorder should face directly to the recording microphone on the control panel ensuring sounds distinctive. After recording, the green indicator will be off, and then the recording effect can be checked: Connect a horn to the control panel, press 'Play' key or input command, and then you can hear the record. If the sound needs to change, just to perform the steps above again.

9.3.27 Record playing   Enter: 71 X

Operations: (PROG→user password→#)→71→X→#.

Parameters definition: X=1~8 indicating 1~8 alarm type records playing. X=9 indicating user address playing.

Functions: Connect a horn to the control panel, play 8 alarm type records and user address record. The recorder

9.3.28 Event record reading   Enter: 80 XX

Operations: (PROG → user password → #) → 80 → XX → #.

Parameters definition: XX=01~40 event records.

Functions: The system stores 40 event records, which can be inquired by user any time. The system records alarm in zones, but no fault alarm for AC power loss, low battery, phone line disconnected, etc.

Note: XX=01~40 is event number in time order. The latest event number is 01, the rest are numbered in this way.

When the 40 records are restored, the latest event records replace the oldest event records. After inputting commands successfully, alarm type indicator displays corresponding zone type. Press '#' key to switch zone numbers and time messages which display on LED.

For example: User wants to inquire about NO. 5 alarm record, input: (PROG → user password → #) → 80 → 05 → #, then LED displays alarm zone number '- - 31' and 'Tamper' alarm indicator is on. Press '#'key to display '2006', press '#' key again to display '0 2 2 7', press '#' key to display '1 9 5 0', press '#' key again to display '- - 31',

9.3.29 All zones bypassed   Enter: 910

Operations: (PROG→user password→#)→910→#.

9.3.30 All zones bypass canceling   Enter: 920

Operations: (PROG→user password→#)→920→#.

9.3.31 All detectors in wireless zones removing   Enter: 930

Operations: (PROG→user password→#)→930→#.

9.3.32 All wireless remote controller removing   Enter: 940

Operations: (PROG→user password→#)→940→#.

Functions: After the operations, all wireless remote controllers are canceled; remote controller can not perform the

Entry delay: A period for user to enter detection area, activate the delay zone and disarm before the system alarms. During the period,user can activate several specified zones (entry zone etc) without alarm immediately. While exceeding the time, the system alarms if not disarmed. Zones with entry delay refer 7.1 zone type instructions .

Exit delay: A period for user to leave detecting area once the system armed. Zones with exit delay will not

4. Notices before using
● Disconnect the powers supply while open the cabinet.
● Don't disassemble the control panel and the keypad panel randomly to avoid accidents and damages.
● Please connect AC power to the control panel after ensuring the installation correct completely.
● Please use standby power (accumulator) to ensure the control panel can work normally when electric network fails.
● If the user has any problem while using, call our company for help.

5. System installation
5.1. General requirements of engineering installation
● Work out a protection scheme based on user's protection zone requirements, then decide the type and rating of the detector.
● Confirm the installation position and wiring direction according to the specific environment. Make sure the position invisible without affecting its reliability. It is better to wire in concealed way.
● The construction scheme and engineering drawings must be filed for maintenance later.

5.2. Control panel installation
● Mount the keypad in a position convenient to operate, and mount the control panel in a position invisible and convenient to connect AC power and telephone line.
● Avoid obstacles around the antenna of control panel.
● Please use standby power to ensure the control panel can work normally when electric network fails.
Note: Only professional engineering installer can install, connect power line and provide service.

5.3. AC power connection
● 220VAC input, 15V/2A output, 50Hz transformer.
● Connect 15V output port of transformer to '15VAC IN' of the control panel.
● Transformer-secondary supplies power only for the control panel; can not share with other units.
● Total current of the detector and the control panel should be less than 2A.
● Total current of the main power supply is offered overload protection by BX300 (1A) fast-blow fuse. Do not substitute a higher rated fuse while replacing the fuse.
● If AC power disconnects and the system is connected to standby power, the control panel will alarm for AC power failure. AC indicator on keypad will be on, and buzzer will chirp twice in every two minutes until chirps 15 times(30minutes) ; when AC power restores, AC power indicator will be off.
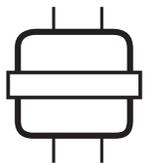
Transformer

5.4 Standby power connection
● The control panel uses 12V/7.0Ah sealed lead-acid rechargeable battery as standby power.
● There is a red and a black power cords with plugs in the master controller for standby power connection. Connect the red power cord to the positive terminal of standby power and the black power cord to the negative terminal of standby power.

● Standby power is offered overload protection by fast-blow fuse BATTERY(1A). If the fuse opens, remove the short or overload condition, and then replace the fuse before restoring power. Do not substitute a higher rated fuse.

● The system checks automatically the state of battery. If disconnect to standby power or voltage of standby power , the control panel will take operation of low-voltage, "Low-voltage" indicator on keypad will be on, and buzzer will chirp twice in every two minutes until chirps 15 times(30minutes).

12V 7.0Ah
sealed lead-acid
rechargeable battery
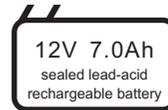
Battery

5.5. Keypad installation

The keypad provides two modes of installation for various surroundings: concealed installation (fixed on the wall by 86 box, wiring board and bracket) and open installation (fixed on the wall by screws).

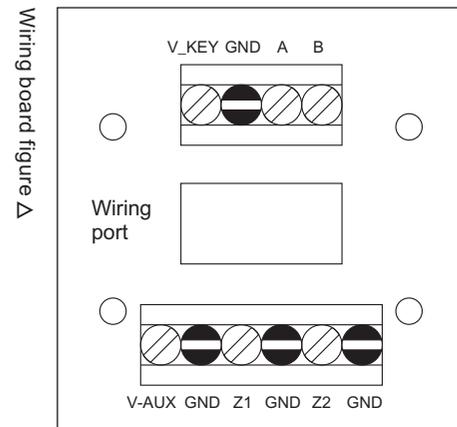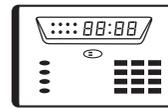### 5.5.1 Concealed installation

● Keypad wiring board terminal

V_KEY: Power input terminal on the keypad, offered overload protection by fast-below fuse V_KEY (1A) of the master controller.

GND: Power ground.

A&B: Data line for communication between keypad and the master controller.

V_AUX: Power input terminal of two wire zones extended by keypad, connecting to anode of the power supply.

Wiring board figure △

V_KEY GND A B

Wiring port

V-AUX GND Z1 GND Z2 GND

Bracket installation figure △

Gang socket
Tamper switch
Fixed card hole
Fixed grab fixed iron stand
Screw hole
Wall
Bracket
Screw hole
Screw fixed leg

120
80
10.6
20
33
30

△ Bracket figure (Unit:mm)

Functions: Add or reduce wireless detectors as required.

For example: Cancel NO.23 detector in wireless zones, press: (PROG→user password→#)→62→23→#.

9.3.22 Wireless remote controller code learn   Enter: 63 X

Operations: (PROG→user password→#)→63→X→#.

Parameters definition: X=1~5, number of wireless remote controller.

Functions: The system can enroll 5 wireless remote controllers at most to do operations of arm away/stay, disarm and panic, add wireless remote controller as required. After inputting command, press any key of wireless remote

9.3.23 Wireless remote controller removing   Enter: 64 X

Operations: (PROG→user password→#)→64→X→#.

Parameters definition:X=1~5, number of wireless remote controller.

Functions: The system can enroll 5 wireless remote controllers at most to do operations of arm away/stay, disarm and panic, cancel wireless remote controller as required. After canceling some remote controller they will have no

9.3.24 Zone bypass   Enter: 65 XX

Operations: (PROG→user password→#)→65→XX→#.

Parameters definition:

XX means zone bypass number.

X=01~16 (16 wired zones, and 09~ 16 are expanded wired zones);

XX=17(remote controller and panic key in the keypad.)

XX=21~28 (8 wireless zones);

XX=30(control panel with anti-tamper function)

XX=31~34(keypad controller with anti-tamper function)

XX=41~48 (4 keypads have 8 wired zones);

XX=51~54 (4 keypads loss)

Bypass for all wired zones in factory default setting, no bypass for other zones.

Functions: User needs to close some zone temporarily, then the zone can be activated freely without alarm. At this

9.3.25 Zone bypass canceling   Enter: 66 XX

Operations: (PROG→user password→#)→66→XX→#.

Parameters definition:: XX means canceling bypassed zone number.

XX=01~16 (16 wired zones, and 09~ 16 are expanded wired zones);

XX=17(remote controller and panic key in the keypad

XX=21~28 (8 wireless zones);

XX=30(control panel with anti-tamper function)

XX=31~34(keypad controller with anti-tamper function)

XX=41~48 (4 keypads have 8 wired zones);

XX=51~54 (4 keypads loss)

Press(PROG→user password→#)→36→1→0800→#→36→2→2200→#

Note: Before performing the functions above , please set 'Timed auto-arm/auto-disarm selection' first, refer to 9.3.7. Auto-arm/disarm time must be different .They can't be operated at the same time.

9.3.19 Zone type setting   Enter: 40 XX Y

Operations: (PROG→user password→#)→40→XX→Y→#.

Parameters definition:

XX means wireless zone number.

X=01~16(16 wired zones, and 09~16 are expanded wired zones); X=21~28(8 wireless zones);

X=41~48 (4 keypads have 8 wired zones);

Y means zone type: type code Y=1/2/3/4/5/6/7/8

Y=1, entry/exit zone;

Y=2, active zone;

Y=3, perimeter zone;

Y=4, panic zone;

Y=5, fire zone;

Y=6, gas zone;

Y=7, anti-tamper zone;

Y=8, duress zone.

In factory default setting, zone types of 8 zones ahead are numbered correspondently. Zone 1 is type 1(entry/exit zone), zone 2 is type 2(active zone)...The expanded 8 wired zones and keypad wired zones belong to type 3(perimeter zone), and all wireless zones belong to type 4(panic zone) in the factory default.

Functions: Modify zone types.

For example: Set wireless zone 21 as gas zone, wire zone 3 as fire zone, press (PROG→user password→#)→40→21→6→#→40→03→5→#

Note: When the system is in arm- away status, all zones are valid; when the system is in arm- stay status, active zone is invalid, but other zones are still in valid ; when the system is in disarm status, fire zone, gas zone, panic

9.3.20 Code for wireless zone   Enter: 61 XX

Operations: (PROG→user password→#)→61→XX→#.

Parameters definition:X=21~28, indicating zone number of wireless detector .

Functions: Add or reduce wireless detectors as required.

For example: Enroll NO.23 detector in wireless zones, press:

(PROG→user password→#)→61→23→#.

Note: After inputting command, user has to activate a wireless detector in 1 minute, the code will fail. Moreover,

9.3.21 Wireless zone detector canceling   Enter: 62 XX

Operations: (PROG→user password→#)→62→XX→#.

Parameters definition:X=21~28, indicating zone number of wireless detector .

● Connection between the wiring board of keypad and the control panel: Connect V_KEY, B,A and GND port in the control panel to those in the keypad wiring board respectively, and fix them by screws.

● Advised to use twisted pair line (RVVP4 1.0). The distance between keypad and the control panel can reach 120m.

● Connection between wiring board and keypad : Insert one end of connecting wire into the interface slot at the back of keypad, and the other into the interface port of wiring board.

● Keypad fixation: Press spring of anti-tamper switch in the spring hole, then hang the keypad on installed fixed iron stand. Ensure the spring is pressed tightly by the fixed iron stand.

△ Rear cover of keypad sketch
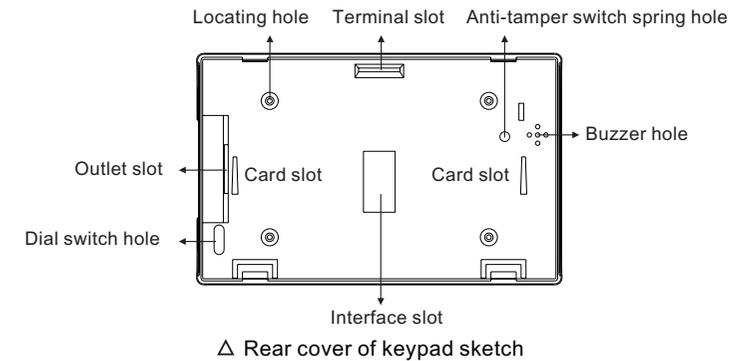
5.5.2 Surface installation

● Connect keypad to the control panel and fix the keypad on the wall through the four locating holes at the rear cover of keypad..

△ Keypad PCB wiring sketch
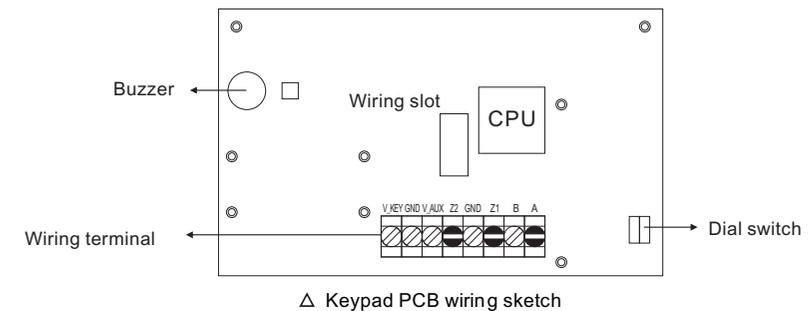
● Wiring terminal on keypad plate

V_KEY: Power input terminal on the keypad, offered overload protection by fast-below fuse V_KEY (1A) of the master controller.

GND: Power ground.

A&B: Data line for communication between keypad and the master controller.

V_AUX: Power input terminal of two wire zones extended by keypad, connecting to anode of the power supply.

Z1&Z2: Two wire zones extended by keypad.

● Connection between the wiring terminal of keypad and the control panel : Connect V_KEY, B, A and GND port in the control panel to those in the keypad wiring board respectively, and fix them by screws. See correspondent

5.5.3 Keypad address

Different addresses need to be set when connecting one more keypads to avoid address clash. It can be reached by adjusting address dial-up switch on keypad back. See the table below:

1	2	ID
OFF	OFF	1(NO1 keypad)
OFF	ON	2(NO2 keypad)
ON	OFF	3(NO3 keypad)
ON	ON	4(NO4 keypad)

Note: Dial-up switch: ON terminal is 'ON', another terminal is 'OFF'.

5.6 Bell output terminal

● The biggest drive capacity of bell terminal (+BELL -) is 0.5A /12VDC.

● Connect the two power lines of the bell to "BELL+" and "BELL-" terminalsof the control panel..

● Bell will chirp once, indicating the bell works normally when the system is powered up and initialized.
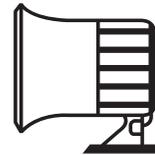
Note: The bell is ineffective when using standby power.

5.7 Anti-tamper switch installation

● Fix anti-tamper switches in cabinet of the control panel, mounting on the rim and the side near the wall of the cabinet respectively and connect to SW200 and SW201 terminals of the control panel. See the location of anti-tamper switch in 5.11.

### 5.8 Auxiliary power output terminal

● The V_AUX terminal provides positive 12VDC for wire detector.

● The V_AUX terminal is offered overload protection by fast-below fuse V_SENSOR(1A). If the fuse opens, remove the short or overload condition, then replace the fuse. Do not substitute a higher rated fuse.
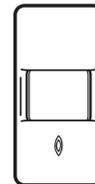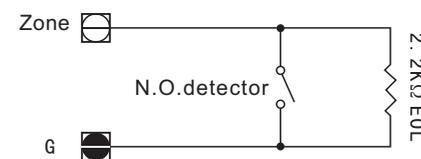
5.9 Loop input

Each loop is connected to an end-of-line (EOL) resistor. For different detectors, modes of connection are shown as followed:

● When connecting N.C. detector, connection mode:

Zone
N.C.detector
2.2KΩ EOL
G
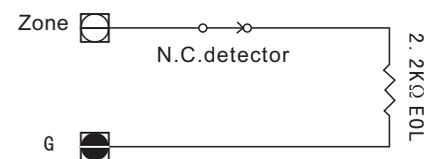
● When connecting N.O. detector, connection mode:

Zone
N.O.detector
2.2KΩ EOL
G

5.10 Telephone line connection

● Connect telephone line to 'LINE IN' interface of the control panel(refer to the figure below)

● Connect telephone or facsimile machine to 'LINE OUT' interface of the master controller, which can ensure no effect on telephone or facsimile machine.

● To achieve field monitor, connect monitoring module to 'MIC JACK' interface of the control panel.

field monitor   telephone line

MIC JACK LINE OUT LINE IN
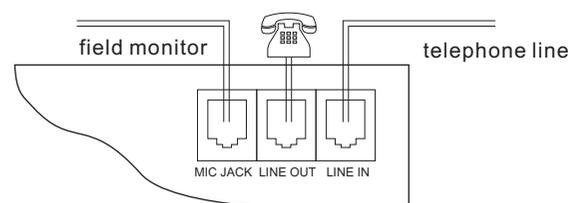
XX=10(100 seconds)

XX=20(200 seconds)

XX=30(300 seconds)

The factory setting is XX=04(40 seconds)

Function: The system entry delay time adjustment.

9.3.14 Year setting   Enter: 32 XX

Operations: (PROG→user password→#)→32→XX→#

Parameters definition: XX=00~99, indicating year,default is XX=00.

Functions: Set year in real-time clock, default value is 2000 and the last two digits is set by user from 2000 to 2099.

For example: Set year 2006, press (PROG→user password→#)→32→06→#.

9.3.15 Date setting   Enter: 33 XXXX

Operations: (PROG→user password→#)→33→XXXX→#

Parameters definition: XXXX is for date setting, XXXX means XX month XX day, default value is XXXX=0101,ie, Jan.1.

Functions: Set date in real-time clock.

9.3.16 Clock setting   Enter: 34 XXXX

Operations: (PROG→user password→#)→34→XXXX→#

Parameters definition: XXXX is for clock setting, XXXX means XX hour XX minute(24 hours), default is 0000.

Functions: Set clock in real-time clock.

For example: Set 16:39, press (PROG→user password→#)→34→1639→#

9.3.17 Timed auto-arm time setting   Enter: 35 X YYYY

Operations: (PROG→user password→#)→35→X→YYYY→#.

Parameters definition:X means 1~3 groups arming time.

YYYY means YY hour YY minute(24 hours),default is 8888.

Functions: The system can set 3 groups arming time If user wants to cancel some set arming time, set YYYY as 8888.

For example: Set 08:00 and 22:00 as arm time,

Press:(PROG→user password→#)→35→1→0800→#→35→2→2200→#

9.3.18 Timed auto-disarm time setting   Enter: 36 X YYYY

Operations: (PROG→user password→#)→36→X→YYYY→#.

Parameters definition:X means 1~3 groups disarming time.

YYYY means YY hour YY minute(24 hours),default value is 8888.

For example: Set 08:00 and 22:00 as disarm time,

Functions: The control panel supports 4+1ADMECO and Contact ID communication.

9.3.10 Relay output type setting   Enter: 28 X

Operations: (PROG→user password→#)→28→X→#

Parameters definition:X=1,alarm output,X=2,fire output,X=3,arm output

The factory setting is X=2 ,fire output

Functions: Relay output type can be set as required. If alarm output is set, the relay will be closed while alarming and KG1 and KG2 are conducted. If fire alarm output is set, the relay will be closed only in fire zone. If armed

9.3.11 Buzzer chirp time setting   Enter: 29 XX

Operations: (PROG→user password→#)→29→XX→#

Parameters definition: delay time is among 0~ 30 minutes

XX=00(alarm but without alert)

XX= 01 (1 minute)
XX= 02 (2 minutes)
XX =10 (10 minutes)
XX =20 (20 minutes)
XX =30 (30 minutes)

The factory setting is XX= 10(10 minutes)

Function: Buzzer chirp time adjustment

9.3.12 Exit delay adjustment   Enter: 30 XX

Operations: (PROG→user password→#)→30→XX→#

Parameters definition: XX=00~30, indicating time, unit is 10 seconds, delay time is among 0~300 seconds.

XX=00(no delay)

XX=01(10 seconds)

XX=02(20 seconds)

XX=10(100 seconds)

XX=20(200 seconds)

XX=30(300 seconds)

The factory setting is XX=10(100 seconds)

9.3.13 Entry delay adjustment   Enter: 31 XX

Operations: (PROG→user password→#) →30→XX→#

Parameters setting: XX=00~30, indicating time, unit is 10 seconds, delay time is among 0~300 seconds.

XX=00(no delay)

XX=01(10 seconds)

● When telephone line is lost in self- checking status, the control panel will alarm for telephone line lost. "Loss" indicator will be on, and buzzer chirps twice in every two minutes until chirps 15 times(30minutes). When telephone line is restored, "Loss" indicator will be off.

5.11 Telescopic antenna installation

The cabinet of the control panel should be installed telescopic antenna for accepting wireless detector and remote controller. (refer to the figure below)
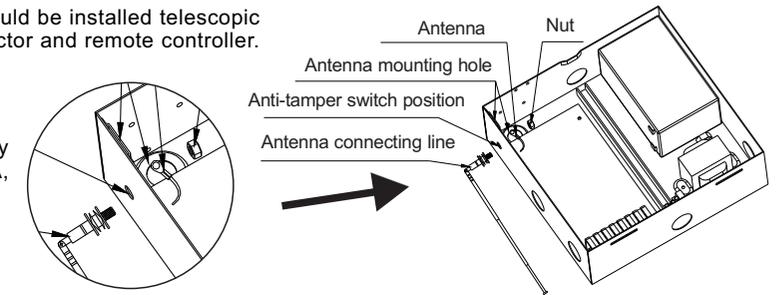
5.12 Relay output terminal

● The biggest load capacity of relay terminal (KG1,KG2) is 120V /3A, 24VDC/3A

Antenna   Nut
Antenna mounting hole
Anti-tamper switch position
Antenna connecting line

5.13 AC power connection

● Check line connection again, ensuring all lines are connected correctly.

● Switch on AC power, power indicator on the keypad will be on; buzzer will beep twice; back light of the keypad, alarm indicator and second clock indicator flash once; nixie tube display show '8888'. Keypad begins to initialize and then buzzer continuously beeps until nixie tube shows real-time again and second clock indicator flashes once a second. Then the system works normally.

6. Keypad panel composition

Keypad panel mainly consists of display range, alarm type indicators, power indicator, status indicator and keystrokes.

1. Alarm type indicators: relevant indicator is on when alarm (FIRE, GAS, PANIC, BURG, AC, TEL, BAT, ANTI-TAMPER, etc) happens. Intruder alarm includes entry/exit zone, active zone and perimeter zone.

2. Display range:

● Display real-time clock normally

● Display input digits when setting.

● Display corresponding alarm zone number when the system alarms.

Alarm indicators
display range
power indicator
status indicator
STAY
AWAY
DISARM
PROG
keystrokes

3. Power indicator: It will keep on after keypad is switched on.

4. Status indicator: Keep on when the system is in arm away status; flash when the system in arm stay status and keep off when the system in disarm status.

5. Back light: If any keystroke is pressed, back light is on, if no other keystroke is pressed in 30 seconds, back light is off.

6. Keys: 4 function keystrokes: arm-away keystroke, arm-stay keystroke, disarm keystroke and program/panic keystroke which has two functions, one is used to program, the other is used in emergent condition.

Number key (0~9), ' * ' keystroke and ' # ' keystroke: they are used in programming and arm/disarm operations. ' * ' keystroke is used for canceling the last input operation and ' # ' keystroke is for confirmation.

7. Alarm mode

Alarm types	protection zones	Alarm modes				
		Voice alarm	Alarm indicator	Keypad buzzer	Bell	Dial to alarm
Fire alarm	Fire zone	Yes	On	Chirp (time adjustable)	Chirp (time adjustable)	Yes
Gas alarm	Gas zone	Yes	On	Chirp (time adjustable)	Chirp (time adjustable)	Yes
Panic alarm	Panic zone	Yes	On	Chirp (time adjustable)	Chirp (time adjustable)	Yes
Burglary alarm	Perimeter zone Active zone Entry/Exit zone	Yes	On	Chirp (time adjustable)	Chirp (time adjustable)	Yes
Duress alarm	Duress zone	Yes	No	Muted	Muted	Yes
Anti-tamper	Tamper zone	Yes	On	Chirp (time adjustable)	Chirp (time adjustable)	Yes
Phone line loss	/	No	On	Chirp once in every two minutes	Muted	No
AC power failure	/	Yes	On	Chirp for 15 times all	Muted	No
DC power low-voltage	/	Yes	On		Muted	No

When the telephone alarms, sounds will be sent out in 5 seconds until the telephone is hung-up. If there is no sound or the user is unwilling to wait for a long period during off-hook, the user can press any key (key '5' recommended), the control panel will send out voice immediately. Broadcast the user's address first, then the alarm type. After all of the alarm types have been broadcasted, wait five seconds then it will be broadcasted circularly .If user not press any keys to operate, the voice of alarm type will broadcast again for five times, then the telephone will be hung-up automatically. The user can press keys to operate until the voice has been broadcasted for five times. See the specific operation in "Remote phone operations". Before broadcasting, keys operation can not be regarded as remote telephone command.

8. Zone type and definitions of zone number
8.1 Zone type

Zone type	Disarm	Arm away	Arm stay	Exit delay	Entry delay	Acousto -optic alarm	Installation position or detector	Type number
Entry/Exit zone	Ineffective	Effective	Effective	Yes	Yes	Yes	Gate	01
Active zone	Ineffective	Effective	Ineffective	Yes	Yes	Yes	Indoor	02
Perimeter zone	Ineffective	Effective	Effective	No	No	Yes	Veranda window	03
Panic zone	Effective	Effective	Effective	No	No	Yes	Panic key	04
Fire zone	Effective	Effective	Effective	No	No	Yes	Fire probe	05
Gas zone	Effective	Effective	Effective	No	No	Yes	Gas probe	06
Tamper zone	Effective	Effective	Effective	No	No	Yes	Anti-tamper device	07
Duress zone	Effective	Effective	Effective	No	No	No	Duress key	08

9.3.4 Operation password modification   Enter:22 XXXX

Operations: (PROG→user password→#)→22→XXXX→#

Parameter definition: XXXX is 4 digits operation password. The factory setting is 1234.

Functions: User can modify operation password which can only be used to disarm except programming.

9.3.5 Ringing attempts adjustment   Enter:23 X

Operations: (PROG→user password→#)→23→X→#

Parameters definition: X means ringing attempts=1~ 9 times(X=0 indicating no phone remote control and no automatically receiving the telephone) The factory setting is 6.

Functions: The system is able to operate in remote place. When user in other place dials phone connected to the master control panel, the system will lift the telephone automatically. User can input password to arm or disarm.

Note: If user telephone uses the same telephone line with the master controller, set ringing attempts as many as possible to avoid clashing between telephone normal operation and system remote operation. After setting ringing attempts, the system begins to accept user remote operation.

9.3.6 Bell on/off setting   Enter: 24 X

Operations: (PROG→user password→#)→24→X→#

Parameters definition: X=1, on; X=0, off. The factory setting is X=1 (on).

Functions: User can choose using bell alarm or not. Setting the bell, it will be on when the system alarms; otherwise only buzzer on keypad chirps.

9.3.7 Timed auto-arm/auto-disarm option   Enter: 25 X

Operations: (PROG→user password→#) →25→X→#

Parameters definition: X=1: valid (Timed arm/disarm allowed).

X=0: invalid (Timed arm/disarm not allowed)

The factory setting is X=0 (Timed arm/disarm not allowed)

Functions: The system can be set auto-arm or auto-disarm in certain moment as required. After setting the

9.3.8 Telephone line checking on/off option   Enter : 26X

Operations: (PROG →user password→#)→26→X→#

Operations definition: X=1, on

       X=0, off

       The factory setting is X=1,on

Functions: When the control panel is not connected with telephone, use this command to forbid checking the

9.3.9 Agreement selection   Enter: 27X

Operations: (Program →user password→#)→27→X→#

Parameters definition: X=1：4+1 Agreement, X＝0：ContactID Agreement,

9.3.1 Alarm telephone number Setting/canceling   Input: 11 XY…Y

(1) Set alarm phone number

Operations: (PROG→user password→#)→11→XY...Y→#

Bracket means in programming status, it is not necessary to input 'PROG → user password→#', enter command status directly.

Parameters setting: X=1~6, indicates 1~6 groups telephone, 1 is alarm number of the alarm center, 2~6 are personal phone numbers.

Y...Y: indicates phone number needed to dial (1~15 digits), phone number is null in factory setting.

Functions: The system can be set 6 groups of alarm phone number. NO. 1 is for the alarm center. If user sets the first number, when alarm happens, the system will announce the alarm center and sent out alarm information according to ADEMCO Agreement. If user does not open service of the alarm center, the system begins to dial number from NO.2 according to alarm information set. After putting through a phone, the system plays corresponding alarm sound. If user does not deal with alarm information, the system will continually dial the number set 5 times.(refer to Remote phone operation).

For example:if user wants to set NO2&3, operation as followed: Program→User password→#→11→2→phone number→#→11→3→phone number→#

Note: In duress alarm status, the telephone will not dial the second, the third and the fourth these three groups of telephones but the alarm center, the fifth, the sixth group of telephones. Recommended: the fifth, the sixth group of telephone numbers should not be set like the personal mobile phone number.

(2) Alarm telephone number cancel

Operations: (PROG→User password→#)→11→X→#, Parameters setting: X=1~6, indicates 1~6 groups telephone 1 for the alarm center, 2~6 for personal telephone numbers.

9.3.2 User address code setting   Enter:20 XXXX

Operations: (PROG→user password→#)→20→XXXX→#

Parameter definition: XXXX = 4 digits user code. The factory setting is 1234.

Functions: After setting user code, when alarm happens, the alarm center will distinguish which master controller is

9.3.3 User password modification   Enter:21 XXXX

Operations: (PROG→user password→#)→21→XXXX→#

Parameters definition:XXXX = 4 digits code. The factory setting is 0808

Functions: User can modify user password which ensure user's absolute authority to operate the system. User must hold password to operate the system. After setting password, user should ensure its safety and reliability.

Duress password: When user is under duress, user can press 'Disarm' key and input duress password. The control panel will display 'Disarm', send out alarm message to the alarm center or the receiver and keep alarm record (the zone number is 18). Duress password can be used to disarm but set parameters. Duress password is the last digit of user password plus 1, no carry, i.e. 9+1=0.

For example: If user password is 8889, corresponding duress password is 8880; if user password is 9999, corresponding duress password is 9990.

Restore password in factory setting: Hardware restores factory setting. There is a jumper 'CB400' on PCB of the master controller. Normally the jumper is in 'USE' mode, if user forgets password, he/she should turn off system power, turn jumper to 'DEFAULT' mode, then enable the system again to restore user password in factory setting. After the system is initialized successfully, user should turn jumper to 'USE' mode, or the system will restore

8.2 Definitions of zone number

The master controller: Wire zone: 01~16(9~16 zones is extended wire zones)

Wireless zone: 21~28

Help: 17

Duress code: 18

Tamper: 30

The keypad: Keypad 1: tamper + two-way zone: 31, 41, 42

Keypad 2: tamper + two-way zone: 32, 43, 44

Keypad 3: tamper + two-way zone: 33, 45, 46

Keypad 4: tamper + two-way zone: 34, 47, 48

When the keypad stops working without being cancelled, the master controller will alarm. Use anti-tamper zones: 51, 52, 53, 54 respectively indicating correspondent keypad disconnected.

9. Keypad operation

Operation display explanation

1. LED displays real-time clock, for example 11:25.

2. In alarm status, the left of the LED displays two digits "- -" and the right displays alarm zone numbers. Buzzer chirps continually, at the same time correspondent indicator is on. For example, if NO.17 zone alarms, the LED displays "- - 1 7".

3. Press the "Program" key when system is in disarmed status and password input is right. LED displays'- - - -' indicate the programming status. The commands and perimeters input will be displayed from the left to the right. When input more than three digits, the digits will move to the left, the last digit will display "-" but not itself .For example, when input '1 2 3', displays '1 2 3 -', while input a '4' more, displays '2 3 4 -'.

4. In the programming status, press '#' key to disposal the command and parameters . If the command and parameters input is fault or can not be performed, the system will exit the programming status automatically and displays clock, at the same time, buzzer beeps 5 times; Input the right command, buzzer beeps twice and displays '- - - -'. It is able to exit the programming status by pressing '#' key return to the clock status.

5. Programming or inputting passwords, press '*'key to delete a digit. After deleted all digits, press '*' key to exit present status and return to display clock.

6. When programming, if the user does not press key in one minute, the system will exit the programming status and return to display clock.

9.1 Password input

Operation: "Disarm" or "Program" key → user password → '#' confirmation.

After pressing " DISARM " or " PROG " key, the system enters password input status '- - - -'. Continue to input password, and LED displays 'H' from the left to the right, the right side displays '-'. For example, when input 2 digits, LED displays 'H H - - '. If password is in error, the system exits input status and displays clock and buzzer beeps 5 times. If input wrong password for 5 times continuously, the keypad can not operate with password in 30 minutes. Restart the system unlock the keypad .when the keypad is locked, press any keys in the keypad the backlight will flashes twice. User password is 0808 in factory setting.

9.2 Function key operation
9.2.1 Arm-away

Press 'AWAY key, then the keypad buzzer beeps continuously and the status indicator is on. The system enters arm-away delay. When arm delay is over, buzzer stops beeping and the system enters

9.2.2 Arm-stay

If the system is in 'DISARM' status, press 'STAY' key and enters arm-stay status; if the system is in 'AWAY' status, press 'STAY' key , input user password or operation password and press '#' key confirm then enter arm-stay status. Then the indicator flashes.

This method is available if the user is at home. At this time, active zone is ineffective, but other zones in arm status.

When any zone alarms, disarm the system first and then arm.

9.2.3 Disarm

Press 'DISARM key to disarm the system, enter user password or operation password (4 digits), then press '#' keystroke to confirm, status indicator is off, the system enters disarmed status.

After disarming, zones are valid except entry/exit zone, active zone and perimeter zone.

9.2.4 Panic

Press 'DISARM' key for 2 seconds, the system will alarm. Zone number is 17 and the type is Panic.

9.3 Parameters setting

To program the system, press 'DISARM' key--- user password---press '#' keys and enter programming status. In the status, continually set parameters and numbers according the command code in the table below. Nixie tube displays corresponding status or inputted digits.

Note: Program the system only in disarmed status.

No.	Setting items	Keypad operations	Parameter / Select	Default
1	Set alarm received telephone	→11 →X →Y →#	NO. X(X=1~6) phone number (1 alarm center), Y=1~15 digits phone number.	Null
2	User address setting	→20 →X →#	X=4 digits user code	1234
3	User password modification	→21 →X →#	X is the 4 digits new user password	0808
4	Operation password modification	→22 →X →#	X is the 4 digits new operation password	1234
5	Ringing attempts adjustment	→23 →X →#	X=1~9 times (X=0 indicating no phone remote control and no automatically receiving the phone)	X=6
6	Bell open/closed setting	→24 →X →#	X=1on,X=0:off	X=1
7	Timed auto-arm/auto-disarm option	→25 →X →#	X=1:valid, X=0:invalid	X=0
8	Telephone line checking on/off	→26 →X →#	X=1on,X=0:off	X=1
9	Protocol select	→27 →X →#	X=0:Contact ID, X=1:4+1	X=0
10	Relay output type setting	→28 →X →#	X=1:alarm output, X=2:fire alarm output, X=3:arm output	X=2
11	Buzzer and bell alarm time adjustment	→29 →X →#	X=00～30 the delay time are 01~30minutes	X=10, 10minutes
12	Exit delay adjustment	→30 →X →#	X=0～30 the delay time are 10~300seconds	X=10, 100seconds
13	Entry delay adjustment	→31 →X →#	X=0～30 the delay time are 10~300seconds	X=04, 40 seconds
14	Real-time clock Setting: year	→32 →X →#	X= year (2 digits)	X=00
15	Real-time clock Setting: month day	→33 →X →#	X= month day(4 digits)	X=01 01
16	Real-time clock Setting: hour minute	→34 →X →#	X= hour minute(4 digits)	X=00 00

No.	Setting items	Keypad operations	Numerical value/selection	Factory fault setting
17	Timed auto-arm moment setting	→35 →X→Y→#	X=1~3 (NO. X auto-arm moment) Y= hour minute (4 digits)	Y=88 88
18	Timed auto-disarm moment setting	→36 →X →Y→#	X=1~3 (NO.X auto-disarm moment) Y= hour minute (4 digits)	X=88 88
19	Zone type setting	→40 →X →Y→#	X=01~16(16 wire zones and 09~16 are extended wire zones); X=21~28 (8 wireless zones); X=41~48(4 keypads have 8 wire zones); Type code Y=1~8	The default value refers to 9.3.17.
20	Detector code restoring and reading in wireless zone	→61 →X →#	X=21~28(NO. X detector in wireless zone);	
21	Detector code restoring and reading in wireless zone canceling	→62 →X →#	X=21~28(NO. X detector in wireless zone);	
22	Wireless remote controller code	→63 →X →#	X=1~5(NO. X wireless remote controller);	
23	Wireless remote controller code canceling	→64 →X →#	X=1~5(NO. X wireless remote controller);	
24	Zone bypass	→65 →X →#	X=01~16(16 wired zones and 09~16 are expanded wire zones); X=17 is panic zone; X=21~28(8 wireless zones); X=30~34 (the control panel and 4 keypads have 5 anti-tamper zones.); X=41~48 (4keypads have 8 wired zones); X=51~54 (4 keypads loss);	No bypass except wired zones
25	Zone bypass cancelling	→66 →X →#	Ditto	
26	User address recording	→70 →0 →#	Record user address	
27	Recorded sound playing	→71 →X →#	X=1~8 play sound of alarm type, X=9 play sound of user address	
28	NO. 1~40 event records reading	→80 →X →#	X=01~40, read 1~40 records	
29	All zones bypass	→910 →#		
30	All zones bypass cancelling	→920 →#		
31	All detector Code learns in wireless zones canceling	→930 →#		
32	All code learns of wireless remote controllers canceling	→940 →#		
33	Zone type initialization	→950 →#		
34	System defaults values restoration	→960 →#		
35	Keypad logout	→990 →#		