USER'S MANUAL

泛海三江

Multi-Area Agent Releasing Control System

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Warning: The system may be damaged in the area where the input of AC power supply is beyond AC 270V for long time unless AC 220V is connected with the voltage stabilizer. Power for the voltage stabilizer must be over 300W.

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I. Overview

Multi-area Agent Releasing Control System includes JB-QB-QM200/n（n＝2－4） Agent Releasing Control Panel (hereinafter briefed as JB-QB-QM200/4 or the control panel, with JB-QB-QM200/4 agent releasing control panel as the main) and agent releasing device, HFC-227ea heptafluoropropane (hereinafter briefed as HFC-227ea) agent , smoke detector (JTY－GD－01K), thermal detector (JTW－ZD－01K), alarm bell (or fire alarm sounder, hereinafter alarm bell represent), etc. It is applicable to fully put out electrical fire, liquid fire or fusible solid fire, fire on solid surface and gas fire. It can be used safely and effectively in most places, such as the computer room, communication equipment room, power distribution room, precise instrument room, generator room, oil depot, chemical flammable materials warehouse and stack room, file room, cashbox, etc.

II. Features

- Detect and alarm simultaneously by smoke and thermal detector in each area
- Hardware WATCHDOG and software filtering algorithm
- Check electromagnetic valve connection for the trouble of open circuit.
- Max. delay timer for fire alarm is 2 seconds
- High-power: the start-up time of electromagnetic valve in each area can be different, which can reach 3A/DC24V, with the control panel output of 6A/DC24V.
- Release delay timer: 20 seconds.
- Distinguish the alarms of trouble/fire/release delay/release.
- Control panel alarms when trouble occurs and resumes automatically when trouble is solved.
- Full electrical switch of AC and DC power supply.
- Monitor the status of backup batteries, against overcharge and overdischarge; Low-consumption design-7.0 AH battery, the system can work on up to 48 hours.
- Protect the keyboard by a lock to prevent wrong operation.
- HFC－227ea: Low poison, efficient extinguishing, with no impact on ozonosphere
- HFC－227ea: Clean after fire extinguishing, with no electric medium.
- Agent releasing control device can be directly placed in a protected room without the need to arrange another room; the installation is convenient.
- Complies with:
  - ✓ GB16806-1997 *"General Technical Conditions of control for Fire Protection Equipment"* in China
  - ✓ ISO9001 *"Quality Assurance System"*

III. Technical Parameters

1. Main Technical Parameters for the Control Panel

Input Voltage	AC220V
Output Power	165W
Max Output Current	6A
Battery Capacity	2×7.0Ah DC12V
Max Output Current for Start-up of Extinguishing Device	3A(last 10 secs)
Max Output Current for Alarms	1A
Operation Environment	Temperature：0℃～50℃ Humidity：≤95%（noncondensing）
Cabinet Dimensions （Length×Width×Height）	460mm× 144mm×620mm

2. Main Technical Parameters of the Detector

	JTY-GD-01K	JTW-ZD-01K
Operating Voltage	DC24V	DC24V
Supervisory Current	＜50μA	＜50μA
Current for Alarm	＜10mA	＜10mA
Operating Environment	Temperature：-10℃～+55℃ Humidity：≤95%（40℃）	Temperature：-10℃～+55℃ Humidity：≤95%（40℃）
Base	DZ-GD-01K	DZ-ZD-01K
Connection	Non-polarity two-wire system	Non-polarity two-wire system
Installation	Ceiling Exposure	Ceiling Exposure
Protected Zone	60m^2 (height h＜6m)	30m^2 (height h＜8m)
Cabinet dimensions	Φ100×40mm	Φ100×30mm

3. Main Technical Parameters for Alarm bell

Input Voltage	DC24V
Max operating current	18mA
Power	3W
Operating Environment	Temperature：-10℃～50℃ Humidity：≤95%（noncondensing）
Dimensions	ϕ150×58mm

4. Main Technical Parameters for Extinguishing Agent Device

Model	Maximal Load of Extinguishing Agent (Kg)	Figuration Size Length×Width ×Height (mm)	Deposit Pressure (20℃)	Action Pressure of Release Device	Time for Ejecting	Startup voltage Startup current	Operating Temperature	Startup way	Maximal operating Pressure
ZQW40	46	430×380×1500	2.5MPa	4.5±0.22 5MPa	≤8s	DC24V 1.2A	0℃~50℃	Electro-magnetic Startup	3.4Mpa
ZQW70	80	480×450×1700							
ZQW100	115	530×480×1700							
ZQW120	138	530×480×1900							
ZQW150	172	580×530×1900							

IV. System Installation and Connection

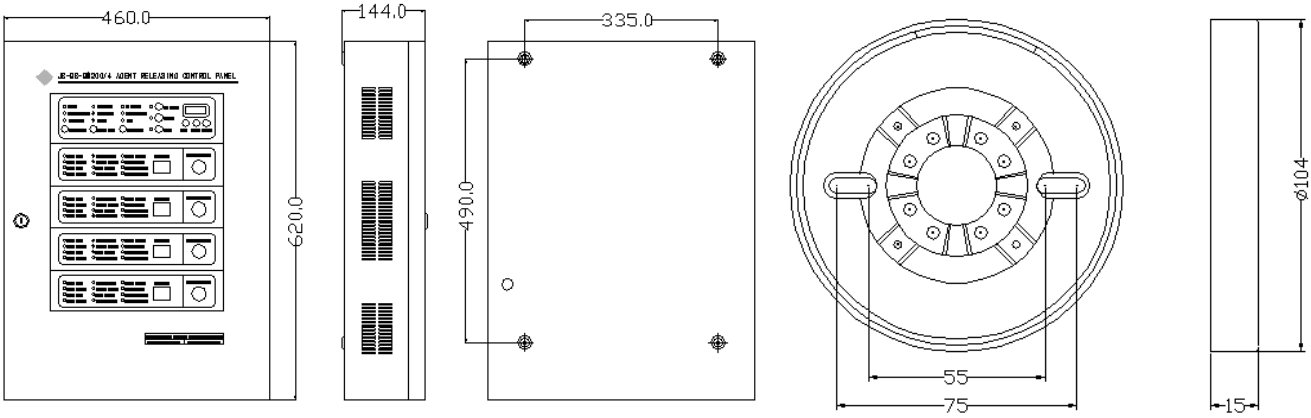


Figure 1

Figure 2

1. Installation of the control panel

Hang JB-QB-QM200/4 control panel stably on the dry, flat and bearing surface with the hanging hole in the back of the box, and ensure there is enough room for the wiring and the opening of the control panel. The installation dimension is shown in figure 1 (size unit: mm).

Note：

- At least the space of 1 meter needs to be saved for the operation on the front of the control panel.
- For the outlet hole on the top of the box, at least the space of 0.3 meter needs to be saved for the wiring.
- The bottom of the box is 1.1～1.3 meters from the floor.
- Ensure the heat diffusion hole (sound hole) on the side is open.
- The system resistance to earth must be ≤5Ω, there is an earth terminal (besides power supply) on the plate of the box, when necessarily please use it .
- The system must be placed indoors.

2. Installation of Detector

- Fix the base of the detector on the ceiling (The installation dimension is shown in figure 2, unit: mm).
- Fix the detector on the base.

3. Installation of Alarm Bell

- Fix the base of the alarm bell on the wall (the installation dimension is shown in figure 3,unit: mm).
- Hang the alarm bell on the base.

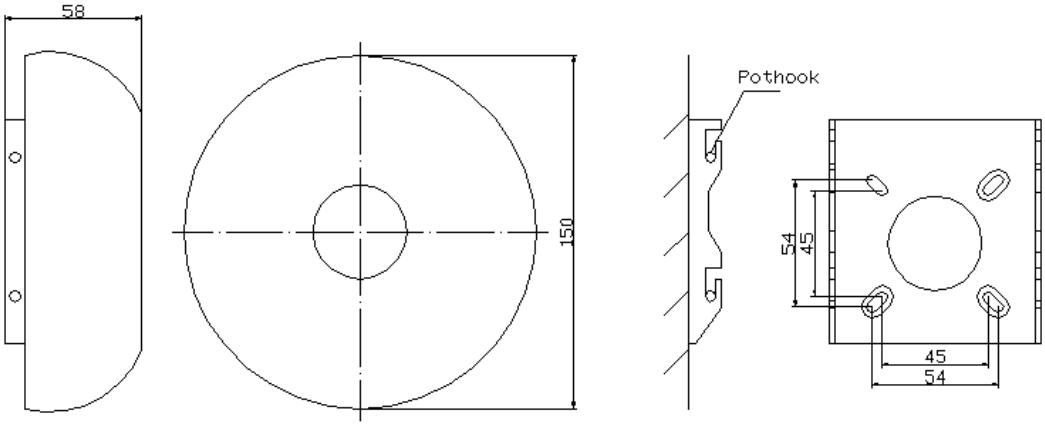


Figure 3

4. Installation of Agent Releasing Device

Structure of the agent releasing device and the main parts is shown in Figure 4.

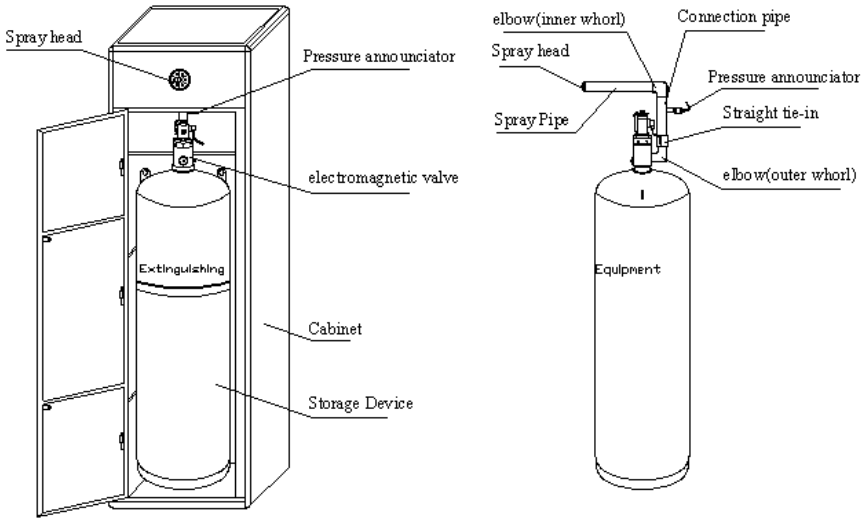


Figure 4

- First ensure the outlet elbow of the electromagnetic valve is firmly placed and the outlet of the elbow is vertically upward, and then carefully move the storage device into the cabinet. Short steel pipes can be used as rollers to push the storage device into the cabinet; be careful with the aluminum alloy profiles of the cabinet.
- Thin steel strip in the middle of cabinet is used to fix the storage steel cylinder in the cabinet.
- Connections between pipes and pipe accessories have been installed before leaving factory as is shown in figure 4. Note that the outlet of pipes should be aligned with the hole in the spray head on the panel of cabinet.
- Install the spray head, a screwdriver can be used to tighten the spray head into the small hole.
- Confirm the place of the agent releasing device. The principle is to place it by wall for convenient installation and maintenance. Check the load of the floor when necessary. Adjusting screws are placed at four corners of the bottom plate of the cabinet to ensure that the cabinet is stable.

5. System Connection

Schematic diagram of system connection is shown in figure 5

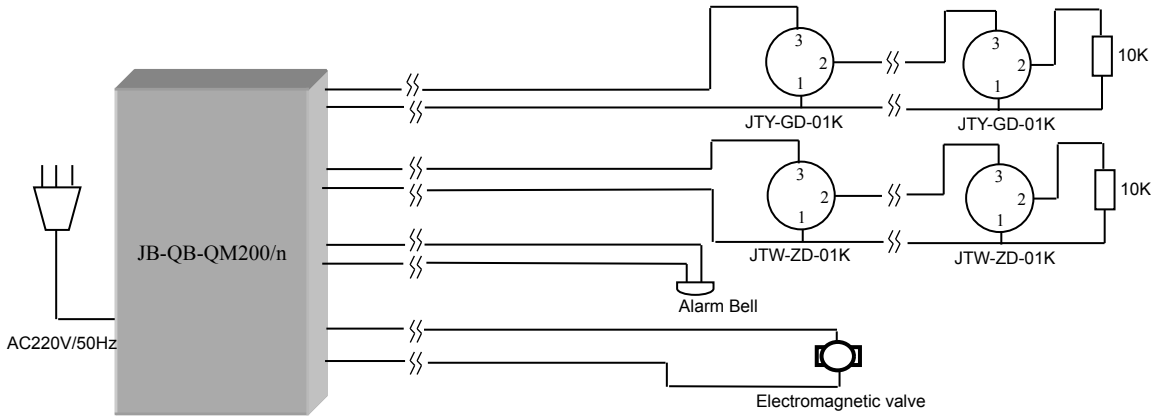


Figure 5

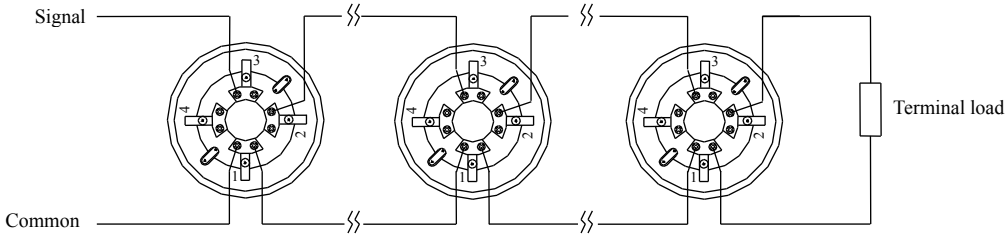
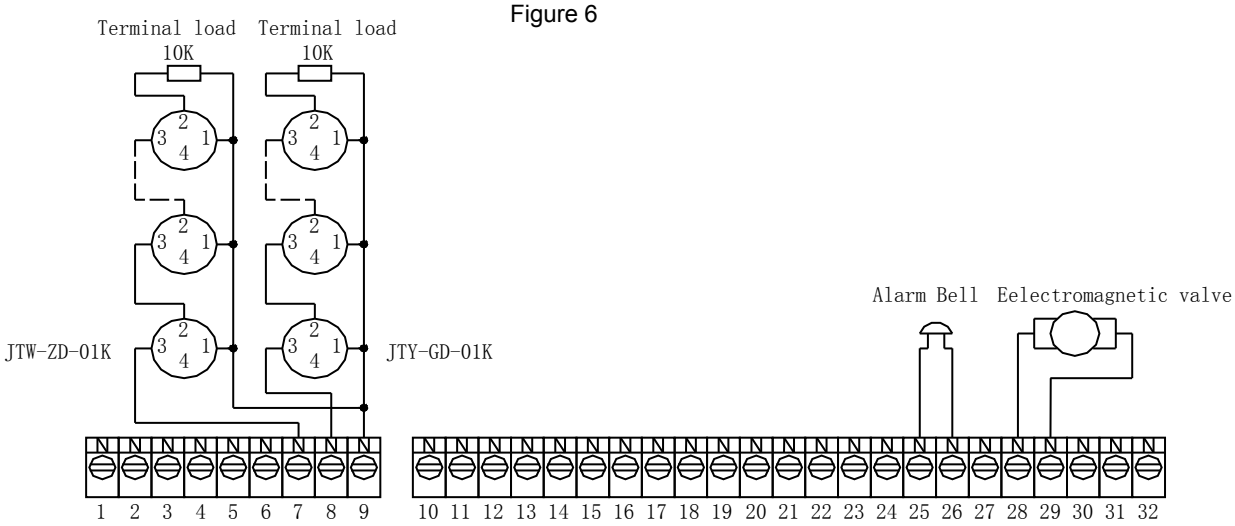


Figure 6



Area control board input/output terminal

Figure 7

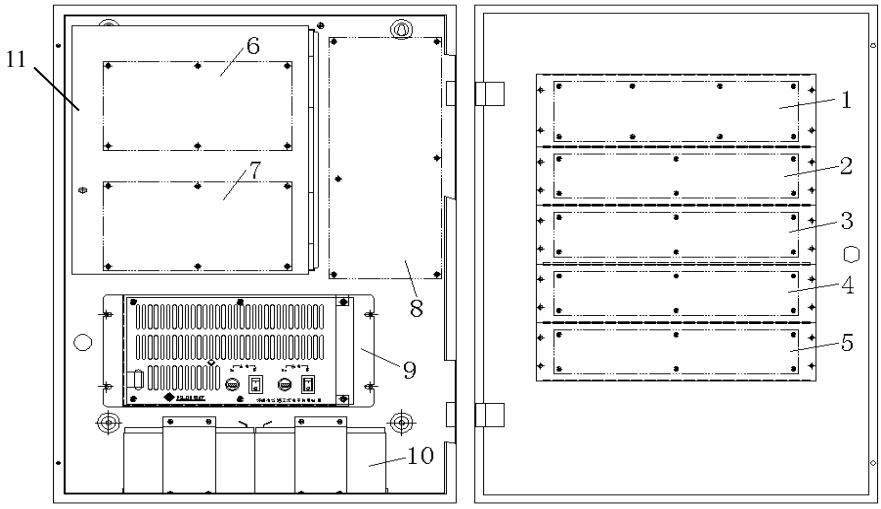


Figure 8

Note:

- In area n (n=1-4), zone 1 connects with conventional smoke detector JTY－GD－01K; While the connection is in open circuit, the system will alarm that zone 1 of area n has trouble; while the detector alarms or the connecting wire is in short circuit, the system will alarm that zone 1 of area n has a fire alarm.
- In area n (n=1-4), zone 2 connects with conventional thermal detector JTW-ZD-01K; while the connection is in open circuit, the system will alarm that zone 2 of area n has trouble; while the detector alarms or the connecting wire is in short circuit, the system will alarm that zone 2 of area n has a fire alarm.
- The detector should be connected in serial (as shown in figure 5 and figure 6), the method of connection is: connect the base of the first detector with terminal1# and 3# (the connection has no positive or negative polarity); connect terminal3# of the next detector with terminal2# of the previous detector. The terminal1# of each should be connected; a 10k/0.25w load resistance should be in parallel connection with terminal1# and 2# on the base of the last detector.
- The detector in zone 1 of area n respectively connects terminal 8# & 9# of (area n) control board; the detector in zone 2 respectively connects terminal 7# & 9# of (area n) control board.
- The connection of (area n) bell respectively connects terminal 25# & 26# of (area n) control board; when any zone of area n rings a fire alarm, the control panel will send out signal to ring the alarm bell of area n.
- The connection of (area n) electromagnetic valve respectively connects terminal 28# & 29# of (area n) control board, when the system judges that an emergency has happened in area n, terminal 29# of area n will send DC24V signal.
- The system will start area n (n=1-4) Releasing Device in the following two status:

	Status Description	Remark
1	The system is in automatic status, there are fire alarms in zone 1&2 of area n at the same time and it is delayed for 20 seconds	Non-pause status
2	The emergent release button on the control panel of area n is pressed properly and it is delayed for 20 seconds	Non-pause status

Note：When the release is completed, the main panel will display the time of release in blinking, blinking "00" on the area panel shows release is completed in the area.

Warning: A relay of high-power is necessary when driving several electromagnetic valves (the current is>3A) simultaneously, but the check of release trouble will be unavailable.

- Schematic diagram of the control panel's inside connection is shown in figure 7.
- Inside structure of the control panel is shown in figure 8, the meaning of each is as follows:

1：Main display board	2：Area 1 display board	3：Area 2 display board	4：Area 3 display board
5：Area 4 display board	6：Below the splint- area 1 control board，above is area 3 control board		
7：Below the splint –area 2 control board，above is area 4 control board			8：Main control board
9：PS-06 power module	10：Backup battery	11：Splint, used to fix area control board	

Warning: In the process of installation, troubleshooting or maintenance, all electromagnetic valves must be removed from the various parts they've driven. Thus, it can ensure that mis-operation or wrong connection of the Extinguishing Device is avoided.

6. The Connection of the Power Supply

JB-QB-QM200/4 adopts 220V 50Hz single-phase AC. When the AC supply voltage fluctuates between AC187V-AC242V, the power supply will work normally and keep on charging the battery (if the battery is not fully charged); if the AC input exceeds this range, the AC supply (AC-DC) module will enter protected status, and the system will switch to be supplied by battery until the AC input turns normal. If it is fully charged, the backup battery can maintain normal working (normal monitoring status) of the system for 48 hours.

Therefore, ensure that the AC supply of the system can be between AC187V-AC242V for a long time and the time of power cut will not exceed 48 hours.

Note: AC input of the system should not exceed 320V; otherwise parts of the apparatus in the system will be damaged.

The backup battery uses two DC12V/7.0AH storage batteries, the connection is shown in figure 9. There are two wires elicited from the terminal of PS-06 power module in the control panel, among them one terminal(BT+) connects the red wire, another(BT-) connects the black wire. Connect the red wire with "+" pole

of one battery and the black wire with "-" pole of another battery, then use one wire to connect the batteries in series.

Note: Installation sequence of the storage batteries: first fix the batteries in the box, then connect the wires as is shown in figure 9, otherwise it may cause short circuit easily.

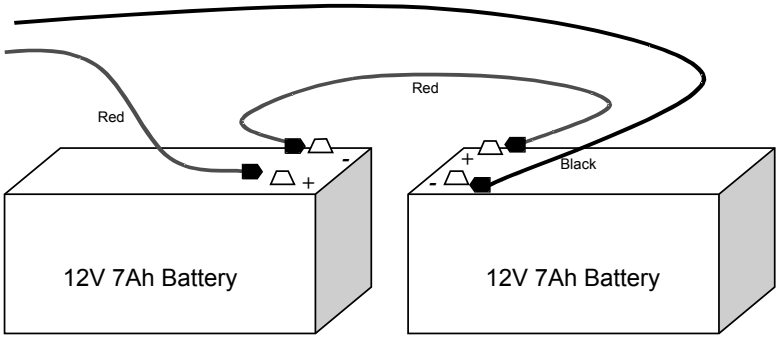


Figure 9

V. Description of the Control Panel

Schematic diagram of JB-QB-QM200/4 panel is shown in figure 10
Thereinto:

1: Main panel
2: panel of area 1
3: panel of area 2
4: panel of area 3
5: panel of area 4

Note: In JB-QB-QM200/3, 5 is blank panel, in JB-QB-QM200/2, 4 & 5 are blank panel.

There are 12 indicator lights on the main panel of JB-QB-QM200/4; the introduction below:

◎ **POWER**
Any input of power supply (AC or DC) in the system, this light will be on.

◎ **AC TROUBLE**
When this light is on, one or more situations described below may occur:

- Open circuit of AC input
- AC low or high (not in the range of AC187V－AC242V)
- Trouble of PS-06 power module

◎ **DC TROUBLE**
The light is on when the battery connection is in open circuit or DC voltage is lower than 22V.

◎ **SYSTEM RELEASE**
When anyone area enters release status and start up the electromagnetic valve, this light will be on.

◎ **SYSTEM FIRE**
When any detector zone finds fire alarms, this light will be on.

◎ **SYSTEM TROUBLE**
When the system detects abnormity (such as AC/DC trouble, release trouble, zone trouble etc.), this light will be on.

◎ **AGENT LEAK**
(Reserve indicator light)

◎ **MANUAL**
When the system is in manual status, this light will be on.

◎ **AUTO**
When the system is in automatic status, this light will be on.

◎ **KEY ON/OFF**
When the key is on, this light will be on.

◎ **SILENCE**
Press the key to eliminate alarm sound and this light will be on.

◎ **PAUSE**
When the system enters pause status, this light will be on.

JB-QB-QM200/4 panel area n (n=1-4) has 12 indicator lights and 2-bit digital display, the introduction below:

◎ **ZONE X (X= 1 or 2) FIRE**
When the system detects fire alarm in zone X , this light will be on.

◎ **ZONE X (X= 1 or 2) TROUBLE**
When the system detects any trouble in zone X, this light will be on.

◎ **EMERGENT STOP**

(Reserve indicator light)

◎ **RELEASE TROUBLE**

When the system detects open circuit in the terminal of electromagnetic valve, this light will be on.

◎ **INPUT TROUBLE**

(Reserve indicator light)

◎ **OUTPUT TROUBLE**

(Reserve indicator light)

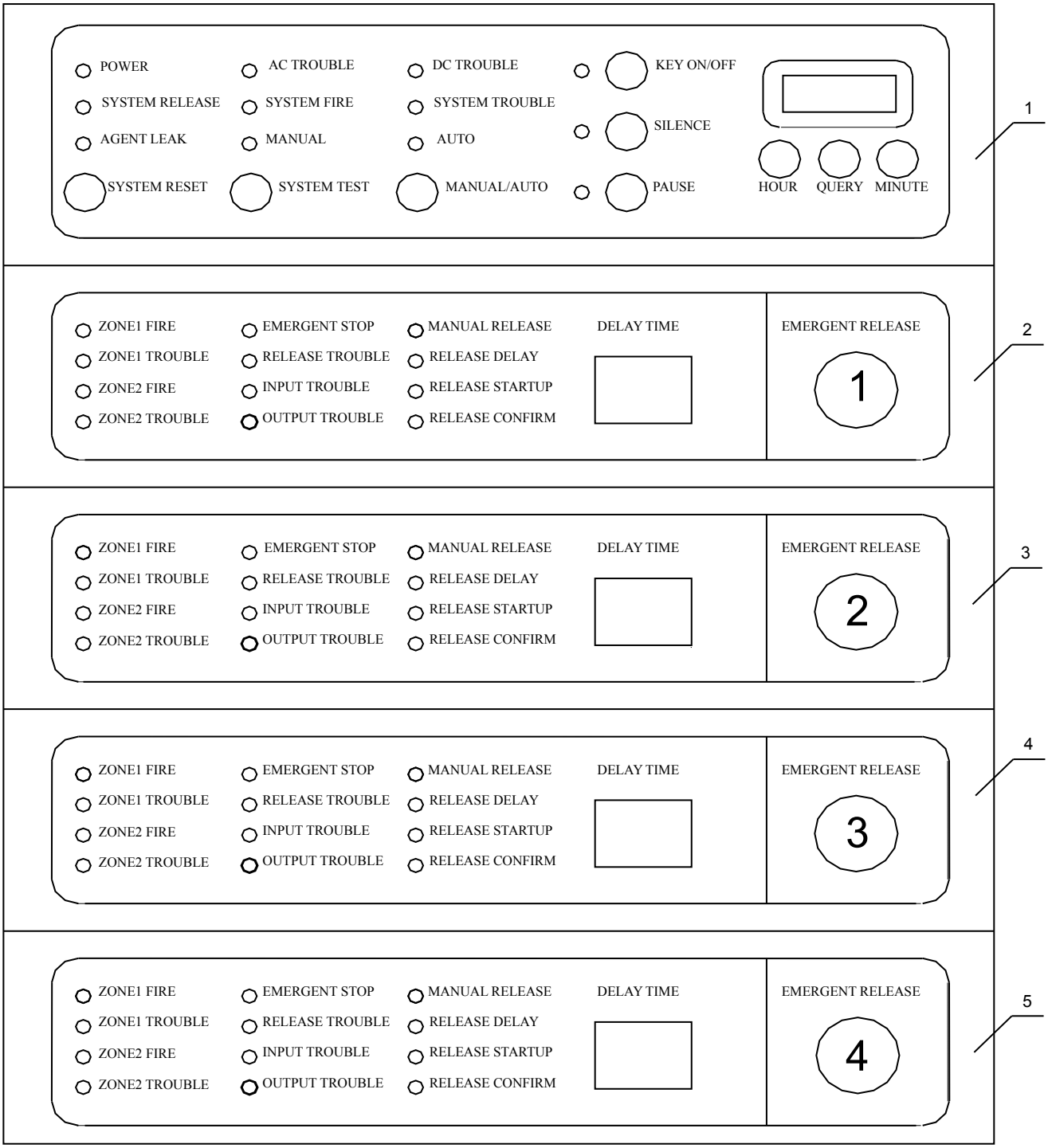


Figure 10

◎ **MANUAL RELEASE**

If the emergent release button on the area n (n=1-4) is pressed, this light will be on.

◎ **RELEASE DELAY**

In automatic status, when combined fire alarm is found or emergent release button is pressed, it will enter release countdown status and this light will be on. If it can't enter release startup status after countdown, the

light will blink. If system pause occurred in release delay status (pause on the main panel is pressed), it will exit release delay status and the light is out.

Note: The reason that can't enter release startup status after release delay includes:

1. Other area is starting electromagnetic valve, wait till other area finished the act, and then enter release startup status. Considering system power (only support the act of release valve in one area) and practical situation of multi-area agent releasing control panel (it's rare that many areas simultaneously start agent releasing), in this situation, the startup will be performed in the order of priority, the act of each electromagnetic valve is10s;
2. When release trouble occurs in the area, it can't enter release startup status.

◎ **RELEASE STARTUP**

When system starts the electromagnetic valve of the area, it enters release startup status, and the light is on.

◎ **RELEASE CONFIRM**

If the system detects that electromagnetic valve has send a drive signal, this light will be on.

Note: If the system hasn't start electromagnetic *valve, while it receives the signal from external* electromagnetic *valve the startup signal, this light will be on, together with the trouble alarm of the system.*

VI. Description of the Keyboard Operation

There are 9 function keys on the main panel of JB-QB-QM200/4 (shown in figure 10); functions below.

KEY ON/OFF

A keyboard lock is set in the system to avoid mis-operation.

To unlock the keyboard, presses the KEY ON/OFF on the keyboard, then the keyboard is unlocked and **KEY ON/OFF** light will be on. To lock the keyboard, press the KEY ON/OFF key and the **KEY ON/OFF** light will be out. After the keyboard is on, with no operation for over 4 minutes, the keyboard will automatically turnoff and the light will go out. When the keyboard is locked, other keys are invalid except SILENCE key,

SILENCE

Eliminate current audible alarms of the system, and the light will be on. When new alarm occurs, it will go out.

SYSTEM RESET

This key pressed, the system will clear all alarms, troubles, exit pause status and initialize all the outputs.

SYSTEM TEST

Press this key to run a system self-testing. During the test, all the indicator lights and delay digital clocks will be on, the digital clock repeatedly indicates 0-4 rapidly, and the audible alarm changes in the following sequence: trouble sound → fire alarm sound → release countdown sound → release alarm sound.

MANUAL/AUTO

Press this key to switch between automatic and manual mode.

PAUSE

This key pressed, the system will switch to the pause mode and the indicator light will be on.

When any area of the system is in release delay status, the keyboard lock doesn't limit the key. That is, whether the keyboard is on or off, the key PAUSE is effective all the time. In this case, PAUSE pressed, all areas in release delay status will stop countdown immediately and exit release delay status.

Note: When the system is in the pause mode, it will sound once every minute to prompt the users that it has lost the function of fire extinguishing. This prompted sound can't be eliminated by silence.

HOUR

This key pressed once, the hour will be increased by one.

MINUTE

This key pressed once, the minute will be increased by one, meanwhile, the second will be set to 0.

QUERY

This key pressed once, query release startup time of one area. The delay digital clock of corresponding area display will show "CH", which means it's querying release startup time of the area. The digital clock of the main display will show release startup time of the area and will have no display when the release hasn't start in the area. It will automatically restore normal status with no operation in 10secs.

JB-QB-QM200/4 panel of area n (n=1-4) has one emergent release key (see figure 10), functions below:

EMERGENT RELEASE

To press this button, you must break the crash switch on the panel, and press heavily on the central point as pointed by the red arrow to touch the protected micro switch and hold for 1-2 seconds. This button pressed, the system will start the electromagnetic valve after a delay 20 seconds and gives off audible/visible alarm correspondingly, then start corresponding output signal.

VII. Power Management for the Control Panel

JB-QB-QM200/4 has adopted the advanced power management system to guarantee stable and reliable operation of the system.

When the AC input is between AC187V-AC242V, the AC-DC power module can operate properly. At this stage, the system will output DC24V-DC27.6V to ensure that the electromagnetic valve and other equipments with low impedance can operate properly even when the line loss is removed.

When the AC input exceeds the range of AC187V-AC242V, the system will seamlessly switch to DC power supply and alarm for AC TROUBLE. Meanwhile the system output depends on the voltage of the battery. The

system will keep the discharging depth of the battery at over 19V to ensure the performance and longevity of the battery.

When the system has a trouble in the power module, it will alarm for AC TROUBLE. If the power supply trouble affects the precision of detection zone, the system will give the alarm for power supply trouble and, at the same time, stop the partially affected monitoring function to prevent erroneous actions. Therefore, once the system alarms AC TROUBLE, it should be repaired immediately.

In DC operation and the voltage of battery is lower than 22V, the system will begin to alarm for DC TROUBLE, but can still operate properly; if the voltage is lower than 19V which is not enough to support normal operation of the system, the system will be off automatically.

With low consumption design, if the battery has been fully charged, the system will run for 48 hours in normal state, and the voltage of battery will be more than 22.0V, that is, DC can guarantee systematic operation for over 48 hours.

When AC module operates properly, the system will charge the battery; when the voltage of battery exceeds 27.6V, the system will shut off the charging pulse automatically to prevent overcharging the battery and further ensure the longevity of the battery.

The maximal current output of the system is 6A, with current protection for the whole. The driving current of the electromagnetic valve is no more than 3A and the total current output of the whole system may not be higher than 6A.

Warning: In the zone where AC input might be over AC270V for long, the system must be applied with AC220V through a voltage regulator; otherwise, the system may be damaged. The power of the voltage regulator must be over 300W.

VIII. System Adjustment

1. Before the system is switched on for debugging, a second check must be carried out to ensure that all the connections are correct.
2. The pressure gauge of the releasing device has been turned off before leaving factory, so it (as shown in Figure 4) has no display. Loosen the pressure gauge anticlockwise for 1 to 2 circles with a spanner, then the pressure gauge will display the storage pressure at once and the pointer should be in the green zone. When installation is finished, with the pressure gauge on, adjust it to make the pointer upwards.
3. Take off the electromagnet in the equipment of all areas carefully from the container valve. Then the iron core in motion will drop down for no supporting. Therefore, when testing electromagnet, reverse it to reset the iron core; then lay down the electromagnet and insert a stick in the electromagnet as position reference.
4. In each zone of the area, the base of the last detector has been connected with a load resistance of 10K/0.25W, when all the cables have been connected; disconnect the detector from the base. Make sure that the load resistance connects well with the base, and then reinstall the detector on the base; if the contact isn't good, systematic trouble judgment of the detected zone will be affected. To disconnect the detector, fix the base, and then rotate the detector counter-clockwise to an angle. The installation is just contrary, but attention needs to be paid to the inhibiting device between the detector and the base, the position should not be exceeded when rotating the detector.
5. Turn on the power supply of the control panel, turn on the **AC** & **DC** switch on the power module, and check whether the control panel is operating properly. If the control panel is in a normal state, the digital clock in the main panel will display the initial time, and among the LED indicators, only the power indicator and the automatic mode indicator light will be on, the other indicator lights will not be on.
6. Test the trouble function : disconnect the detector from the first detected zone of area n (n=1-4), the control panel will alarm trouble of the first zone in area n and the trouble indicator light of the first zone in area n will be on; disconnect the detector from the second detected zone of area n, the control panel will alarm the trouble of the second zone in area n and the trouble indicator light of the second zone will be on; disconnect the connection of the electromagnetic valve in area n, the control panel will alarm RELEASE TROUBLE of area n; reconnect the detector and the cable of the electromagnetic valve, the control panel shall operate properly again.
7. Alarm function test: use a smoke emitter to spray smoke to the JTY－GD－01K detector of the first zone in area n or short circuit its cable, the control panel shall give the alarm of the first zone in area n, the first zone alarm indicator and the system alarm indicator light will be on, at the same time, the control panel will send the alarm bell start-up signal in area n and start the alarm bell to give an alarm; Use an electric blower to heat the JTW-ZD-01K detector of the second zone in area n to a temperature of 68℃ or short circuit its cable, the control panel shall give the alarm of the second zone in area n, the second zone in area n alarm indicator and the system alarm indicator light will be on, at the same time, the control panel will send the alarm bell start-up signal and start the alarm bell to give an alarm; when fire occurs in zone 1 & 2 of area n and the system is in automatic mode, the system will switch to release countdown mode, and after a delay of 20 seconds, the control panel will send the electromagnetic valve start-up signal, then the iron core will push the stick out. Measure the motion of the iron core with the stick, so as to check whether the knife switch can reach and cut through the film easily. Then reverse the electromagnet to reset the iron core.
8. Manual start-up function test: the control panel release button is a one-time smash button, and its test can be carried out through short circuit the pin of "EMERGENT RELEASE" on the panel of each area, short circuit two pins of "EMERGENT RELEASE" of area n (n=1-4) for 1-2 seconds, the control panel will switch to release countdown mode, and after a delay of 20 seconds, the control panel will send the electromagnetic valve start-up signal of area n, the iron core will push the stick out.
9. Check whether the keyboard of the control panel runs normally referring to keyboard operation instructions.

Note:

1. **After testing, first remove power supply (include AC power and DC power) and reinstall the electromagnet (As shown in figure 4), apply power again to ensure normal operation of the device.**
2. **The spur guard on electromagnetic valve is used for locking cam deflector rod, which can be pulled down only after drawing out spur guard when starting the container valve manually. Locking of cam deflector rod will not influence nitrogen startup of electromagnetic valve.**
3. **The safety blade installed on the electromagnetic valve is used for avoiding wrong motion caused by collision and shaking during transportation, installation and debugging. Before using electromagnetic valve when system test is finished and the electromagnet is positioned, the safety blade must be taken off, then the four setscrews of electromagnet should be fixed, otherwise electromagnetic valve can't be switched on. The safety blade can also be placed on one side of the cabinet for re-fitting when moving bottles.**
4. **The safety circlip is used for locking manual lever, which can be pressed only after drawing out safety circlip when starting the electromagnetic valve manually. Locking of manual lever will not influence electric startup of the electromagnetic valve.**

IX. System Maintenance

1. The Agent Releasing Control System should be checked and maintained periodically by people who have been trained specially and have passed the exam.
2. The Agent Releasing Control System should be checked twice every month, the checking contents and the requirements should be in conformity with the followings:
   1) Check whether the control panel runs normally and the voltage of the battery is normal (a charging & discharging test should be done on batteries every three months, so as to keep the performance of the batteries. During the test, disconnect AC when AC and DC work normally, then batteries will provide the power supply for the control panel which will alarm AC trouble, press the SILENCE key to eliminate the alarm. Reconnect AC when voltage of batteries decreases to DC23V.
   2) Visually inspect all system components such as agent releasing storage container, electromagnetic driving device, pipes and spray head, etc. The system components should have no collision distortions and other mechanic damages, without rust on the surface. The coating should be perfect, the nameplate should be clear; shield, lead sealing and safety mark of the manual equipment should be complete.
   3) Pointer on the pressure gauge of the storage device should be in the green zone, please pressurize or report to us if the pointer is lower than the green zone.
3. The Agent Releasing Control System should be checked twice completely every year, besides the provision of monthly inspection, the checking contents and requirements should be in conformity with the followings:
   1) The exit and usage of the protected zone, as well as the class, quantity and distribution of inflammable matters should be in accordance with the design requirement.
   2) Equipment, pipe, holder and hanging bracket in the storage cabinet should be fixed.
   3) The hole of every spray head shouldn't be blocked.
   4) Perform a simulated automatic start-up test. If unqualified project is found, then re-debugging is needed.
4. Pressurize
   1) Disassemble the pressure gauge: First screw down clockwise the hexangular bolts on the switch of the pressure gauge, then rotate the pressure gauge anticlockwise.
   2) Apply the gas supply: Gas supply should adopt qualified industrial nitrogen gas; the joints should be the same with that of the pressure gauge (external thread is M12 x 1).
   3) Pressure supervision. The connecting pipe of the storage device should be equipped with switch valve and pressure display. After tightening all parts of the connecting pipe and checking without error, first turn on the pressure switch on the storage container's valve, then switch on the valve slowly and watch closely the pressure display. Switch off the valve when pressure increases to 2.6Mpa slowly.
   4) Remove the gas supply. Switch off pressure switch on the storage container valve and the switch valve of gas supply, and then disconnect the connecting pipe.
   5) Install the pressure gauge. Install and screw down clockwise the pressure gauge, then rotate the hexangular bolts on the switch of the pressure gauge until its pointer moves. The Pointer should cover over half of the green part.

X. General Troubleshooting

Symptom: After apply power, the control panel has no reaction and the indicator light of the power supply is not on.

Please check whether the **AC** & **DC** switch on power module is turned on, whether the AC & DC input fuse is burned.

Symptom: With AC input, the system alarms AC trouble

When the voltage of AC input is beyond AC187V-AC242V, the power supply module of the system will enter protected status, please confirm the voltage of AC input.

Symptom: System alarm is delayed too long

The system is probably in the environment with strong interference; please confirm the system connects well.

Symptom: Pressure gauge of the storage equipment hasn't display the pressure?

1. Check whether the switch on the pressure gauge has been turned on.
2. If the switch on pressure gauge has been turned on and there is still no display, the pressure gauge may be broken, please replace by another one of the same model. Method of replacing pressure gauge: Turn off and disassemble the pressure gauge, replace by another one of the same model, then turn on it.
3. If there is still no pressure display after replacing and turning on the pressure gauge, perhaps the pressurized gas has leaked, please pressurize as soon as possible. Refer to pressurized methods in the system maintenance or contact us.

Symptom: Release trouble of the control panel

Please check whether the connection of the electromagnetic valve and the control panel is in open circuit.

Symptom: Control panel alarm trouble in zone 1 or 2 of area n

1. Please check whether the connection of the detector and control panel in zone 1 or 2 of area n is in open circuit.
2. Please check whether each detector operates normally in zone 1 or 2 of area n.

Symptom: Keys on the control panel are invalid

Please check whether the keyboard lock is on and the keyboard light is on, when the keyboard lock is off, keys are invalid except the key "silence" and "emergent release"; the key "pause" is controlled by the keyboard lock except when the control panel is in the state of release countdown.

Symptom: On the control panel, AC& DC indicator lights are on at the same time.

When AC has no input or exceed the range of safety voltage (AC187V-AC242V), the control panel is DC supply and will alarm AC trouble, AC trouble light is on; For long-time DC supply, the voltage of battery will decrease, when it's below 22V, the control panel will alarm DC low trouble, and the light is on. At this time, the control panel can still operate normally, but AC & DC trouble indicator light will be on simultaneously; when the voltage of battery is lower than 19V, the control panel can't operate normally, the control panel will turnoff till the power turns normal, then it will start operating again.

Symptom: The control panel operates normally, but when zone 1 &2 of area n alarm simultaneously, the control panel cannot send the release signal of area n to start the electromagnetic valve.

Please check whether the control panel is in automatic release mode, when the control panel is in manual release mode, even there occurs combined fire alarm in area n, the control panel cannot enter release delay status, neither can it send release signal to start the electromagnetic valve. But no matter the control panel is in automatic and manual release mode, the key "emergent release" on the display panel can start the electromagnetic valve in corresponding area.

Note:

When problems beyond your capability occur in the system, don't disassemble or repair it. Please contact the authorized agent or our company ASAP.