

## Wireless Q-Safe User Manual



Please keep this user manual.  
Please use this product following the instruction after read it.

Veritas Tecn (Ningbo)Co.,Ltd.

Add: ChuangYe Yi Lu 17# Ningbo City China

Tel: 86-574-56161703

- Specifications and Information contained in this documentation are furnished for information use only, and are subject to change at any time without notice, and should not be construed as a commitment by manufacture.

APPLICANT: IAQ Laboratories International, L.L.C.  
FCC ID: UDGIAQ001

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## **1. Introduction**

Thank you for selecting Q-Safe. Please read this user manual in detail before operation and follow the instruction. Function and operation method of Q-Stat and sensors are introduced in the user manual.

Q-Safe adopts the advanced sensor technique and wireless network communication technique. Q-Safe can collect the temperature and humidity of the sensors, calculate MOLD growth risk, and then save the collected initial data and calculation result in database in order to inquiry and monitoring.

## 2. Product Appearance

### 2.1 Appearance of Q-Stat

Front side figuration drawing:

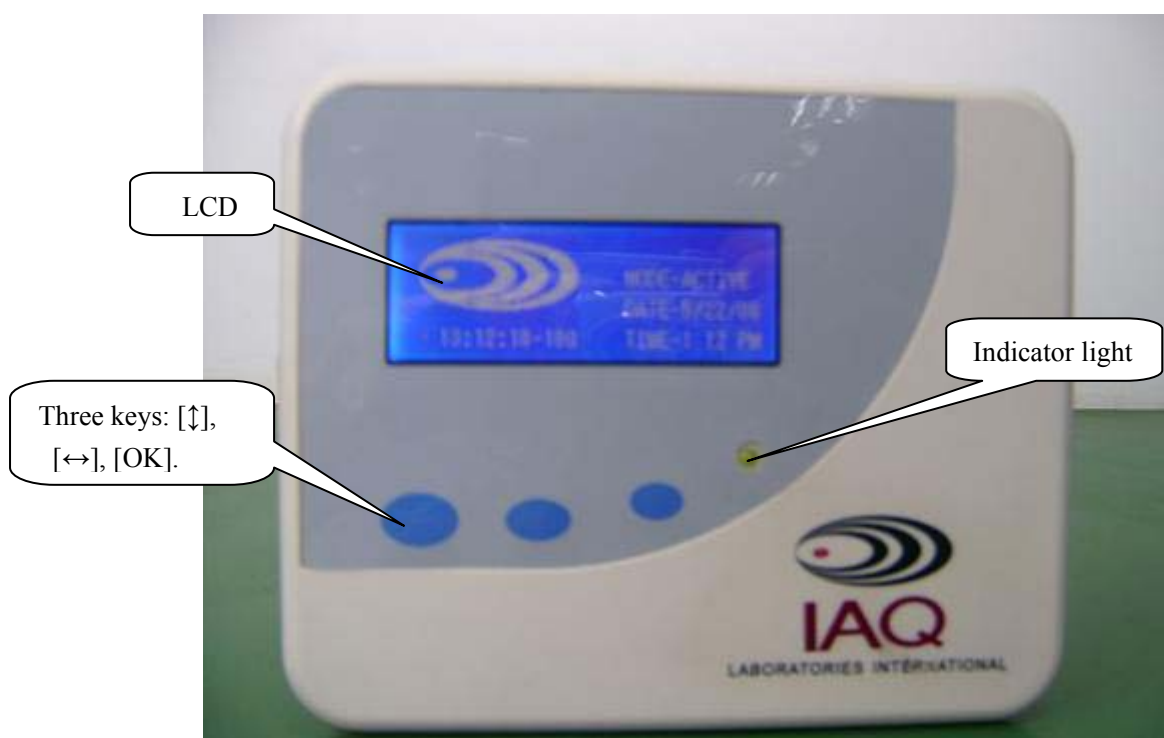


Figure 1

Back side connection drawing:

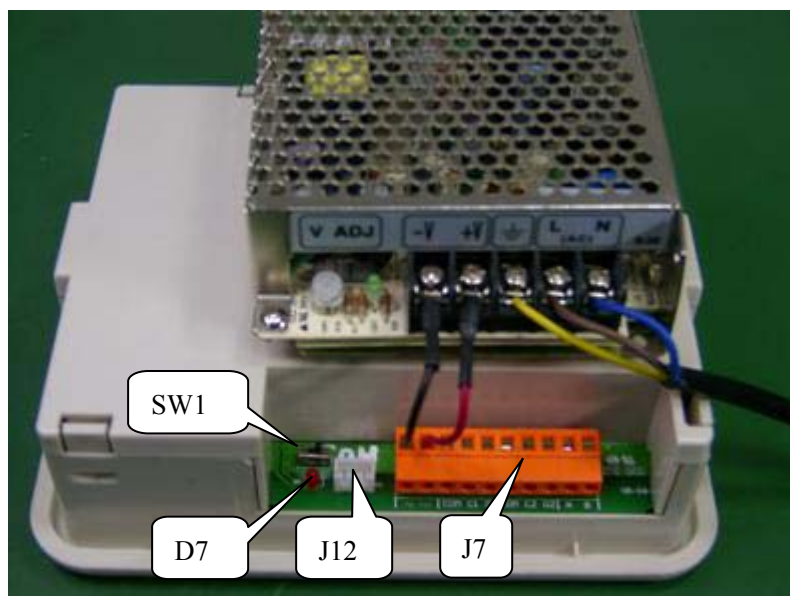


Figure 2

SW1: Power supply

D7: Backup battery indicator light

J12: Sensor's setting port

J7: Connection port

Connection Ports of J7 are introduced from left to right:

1-2: External power supply interface (-V, +V)

3-8: External extend backup interface ( COM , C1 , O1 , COM , C2 , O2 )

9-10: RS485 port ( A , B )

See *family-use Q-safe installation manual* in detail.

## 2.2 Appearance of sensors

Front side figuration drawing:



Figure 3

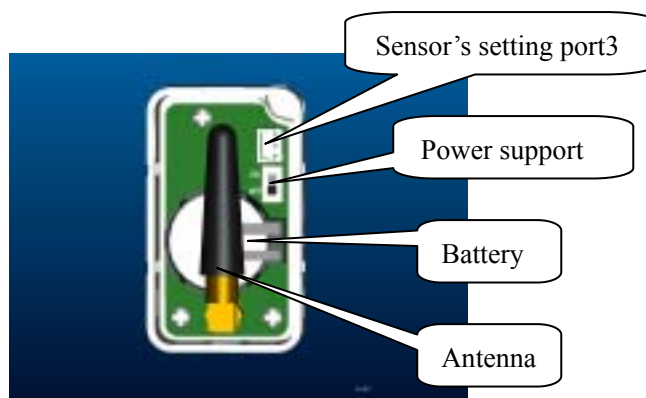


Figure 4

Back side figuration drawing:

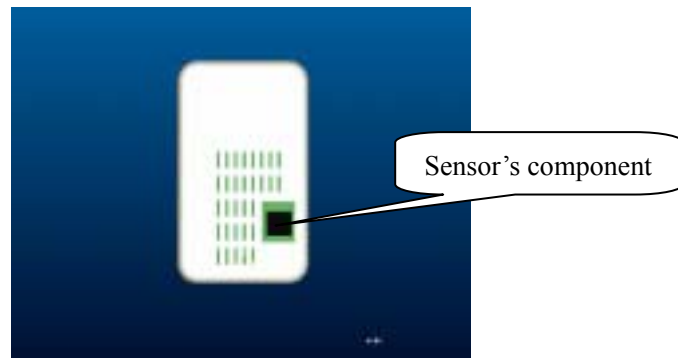


Figure 5

### 3. Function of Q-Stat

- 1) LCD displays the following information: system applications, Q-Stat' ID number, Q-Stat wireless frequency range, records in Q-Stat, transmit interval of sensors, information of the sensors and current time.
- 2) Status indicator lamp:  
*Green*: normal working  
*Red*: hardware defect, sensor connection defect or short power supply  
*Orange*: alarming, sensors' parameters exceed the setting value.
- 3) It is human to off line operate the system, which has its own menu.
- 4) Connecting computer and Q-Stat with BUS M-Bus. One serial port of the computer can link up to 255 Q-Stat.
- 5) Wireless connecting Q-Stat and sensors (adopt the worldwide open frequency range, which is used without license). One Q-Stat can link up to 255 sensors.
- 6) The data of connected sensors is collected regularly by Q-Stat. One Q-Stat can save up to 4000 records.
- 7) Computer can collect the data of Q-Stat, set the time and ID number of the Q-Stat, and transmit interval of sensors by administrative software.
- 8) The following operation can be offline operated by keys on Q-Stat: setup system applications, Q-Stat ID number, Q-Stat's wireless frequency range, sensors' ID number and frequency range.
- 9) Q-Stat has its own charging batteries, which can supply power while power off. The length of time power supplied depends on the number of Q-Stat and sensors. Batteries are charging while powers on.





## 4. Parameters of Q-Stat

1. Transmitting rate and communication protocol
  - 1) Q-Stat and PC: 4800Bps, RS485 semiduplex
  - 2) Q-Stat and sensors: wireless frequency 433MHz, transmission distance max. 100 meters.
2. Two control ports are used for control external electrical appliances.
3. Power supply: DC 15V 200mA.
4. Maximum power: <5W (include backup battery charging power)
5. 12V600mAH charging battery is included in Q-Stat.
6. Working Conditions:

Temperature: 32-158F

Humidity: 0%-95%RH non-coagulation
7. Size: 106 x145 x 175mm(Height x Width x Depth)
8. Weight: 1500g (net weight)
9. Certificate: FCC



## 5. Parameters of Sensors

1. Wireless frequency: 433MHz.  
Transmission distance: max. 100 meters
2. Power supply  
High performance battery: CR2450 , 3V , 540mAH  
Usage life: 5-10 years
3. Quiescent current: <4uA  
Peak current : 30mA
4. Working condition  
Temperature: 32-158F  
Humidity: 5%-95%RH non-coagulation
5. Size: 32x38 x 65mm(Height x Width x Depth)
6. Weight: 80g (net weight)
7. Certificate: FCC



## 6. Connection of Installation

Please see specific connection methods in: *Wireless Q-Safe Installation Manual*.

### 6.1 Q-Stat interface connection

#### <1> Power lead connection

Power supply connection terminal: POWER.

Specification: AC 100—240V 50/60Hz room power supply

“L” connects with live wire. “ $\frac{1}{\text{—}}$ ” connect with earth wire. “N” connects with null line.

#### <2> Connect with mastercontrol computer.

Connection terminal: J7(A、 B). “A” connects with RS485 A. “B” connects with RS485 B.

### 6.2 Connection of setup sensors by Q-Stat

While setup parameters of sensors by Q-Stat, one end of three core wire connect with J12 of Q-Stat, and the other end connect with J3 of the sensors.

The connection should be moved when setup of the sensors has been finished.



## 7. Q-Stat basic operation

### 7.1 Startup of Q-Stat

After electrify Q-Stat, turn the switch SW1 to “ON”, the Q-Stat will be startup.

### 7.2 Startup of Sensors

The sensors will be startup after turn the switch to “ON”. Then a data collect record will be send by sensors, and ID number of sensors and time of sending record will be displayed on Q-Stat masterinterface. Whether Q-Stat and sensors are working normally can be tested by this characteristic.

Due to the sensors are low power dissipation, the interval of startup should be more than twenty minutes in order to ensure sensors’ normal working.

### 7.3 System function chart

A、 First time running the system

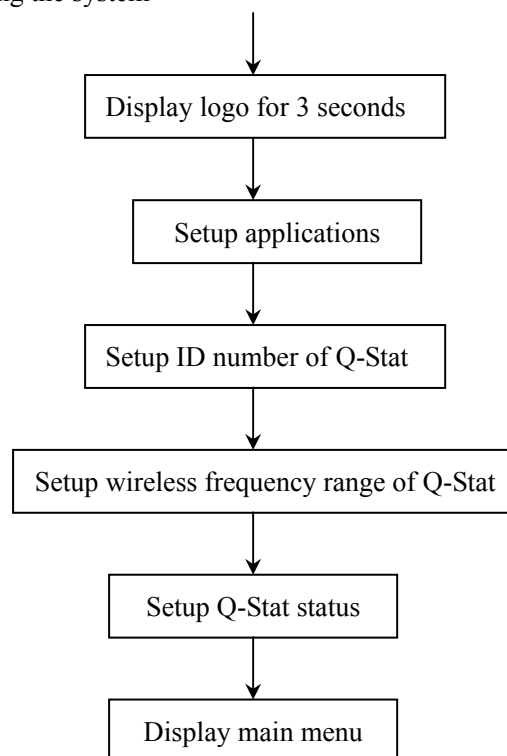


Figure 6

B、Next time running the system

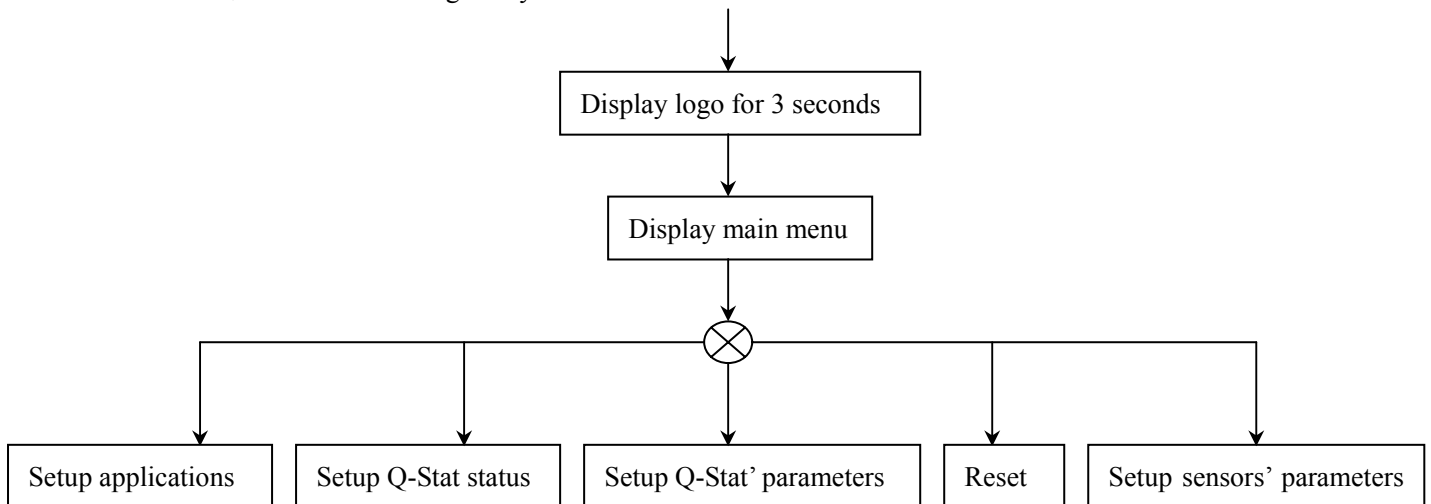


Figure 7

## 7.4 Operation instruction

A、Function key

[↑↓] Page turning   [←→] Selection   [OK] Confirm

B、First time running the system

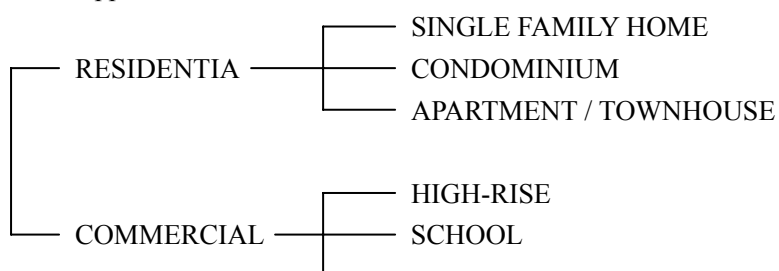
1) Display logo for three seconds



Figure 8

2) Setup applications

Application structure chart:





— HOSPITAL

Figure 9

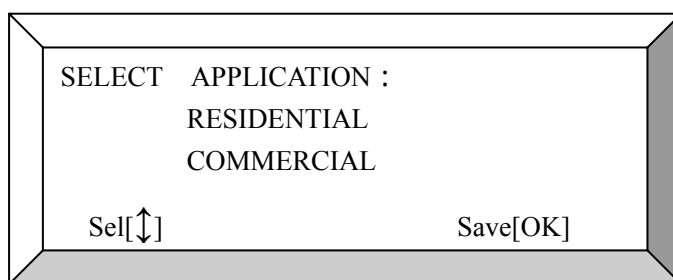


Figure 10

Note: the selected item is flickering.

Press **[↑↓]**: select RESIDENTIAL or COMMERCIAL.

Press **[OK]**: Confirm.

If RESIDENTIAL is selected, the following figure will be displayed after confirm.

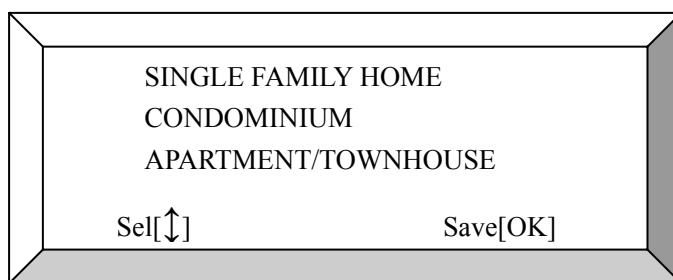


Figure 11

Press **[↑↓]**: select SINGLE FAMILY HOME, CONDOMINIUM or APARTMENT / TOWNHOUSE.

Press **[OK]**: confirm and enter into the interface of setup Q-Stat ID number.

### 3) Setup ID number of Q-Stat

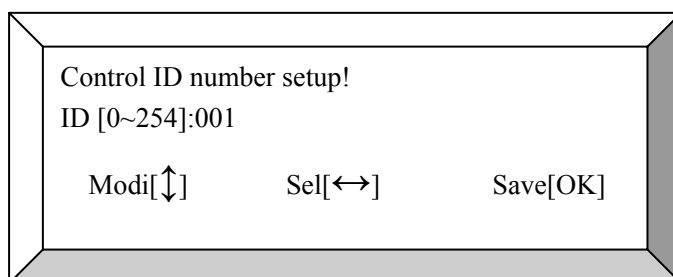


Figure 12

Press **[↑↓]**: modify flickering value.

Press **[←→]**: select ones place, tens place or hundreds place.

Press [OK]: confirm and enter into the interface of setup wireless frequency range.

#### 4) Setup Q-Stat wireless frequency range

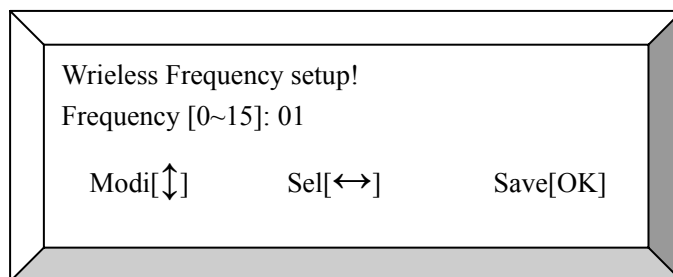


Figure 13

Press [↑↓]: modify flickering value.

Press [←→]: select ones place, tens place or hundreds place.

Press [OK]: confirm and enter into the interface of Q-Stat running status.

#### 5) Setup of Q-Stat status

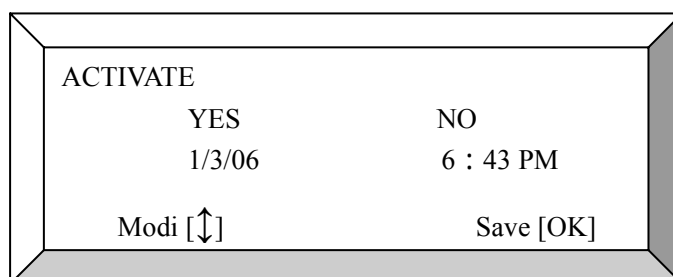


Figure 14

Press [↑↓]: select YES or NO.

Press [OK]: save and back to the interface of main menu.

#### 6) Display main menu

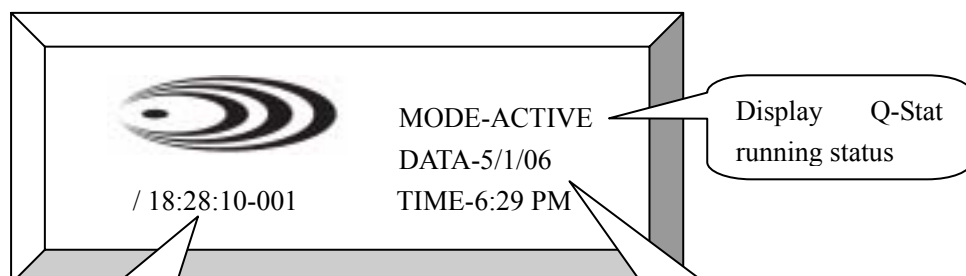


Figure 15

C、Next time running the system

1) Display logo for three seconds



Figure 16

2) Display main menu

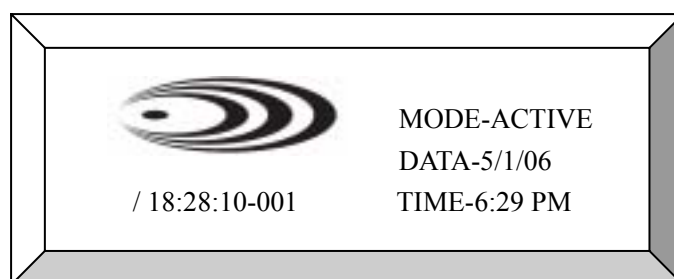


Figure 17

Note: the LCD screen will be shut off if no key is pressed in 30 seconds and then back to main menu. And it will be lighted after press any key.

3) Press any key to display the following interface ( Function select menu)

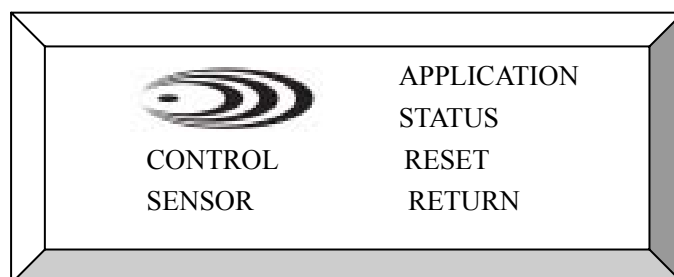


Figure 18

Press : select APPLICATION, STATUS, CONTROL, RESET, SENSOR or RETURN.

APPLICATION: setup system application.

STATUS: setup Q-Stat running status.

CONTROL: setup Q-Stat parameters.

RESET: system reset.

SENSOR: setup sensors' parameters.

RETURN: back to main menu.

**Press [OK]:** confirm and back to corresponding interface.

#### 4) Setup applications

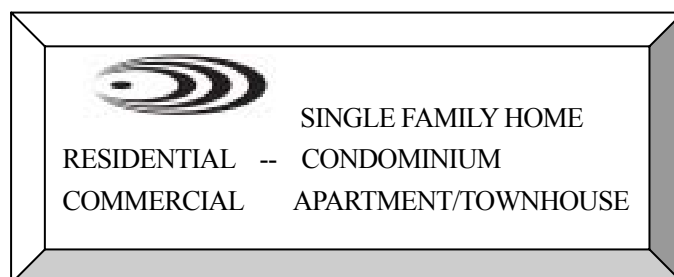


Figure 19

**Press [↑↓]:** select applications.

**Press [←→]:** select items.

**Press [OK]:** save and back to function select menu.

#### 5) Setup Q-Stat status

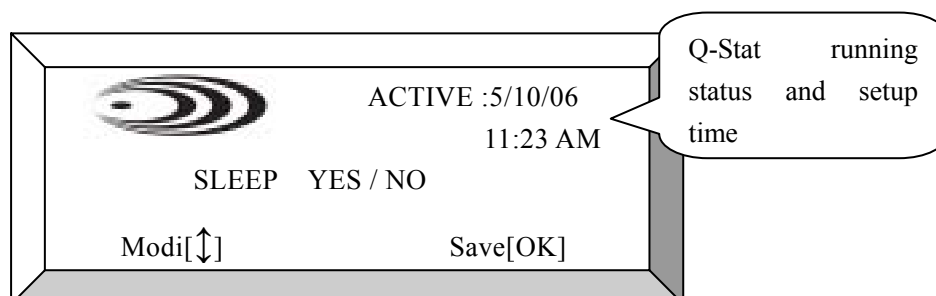


Figure 20

This interface is used for setup Q-Stat running status: ACTIVE or SLEEP.

**Press [↑↓]:** select YES or NO.

**Press [OK]:** save and back to function select menu.

#### 6) Setup of Q-Stat parameters

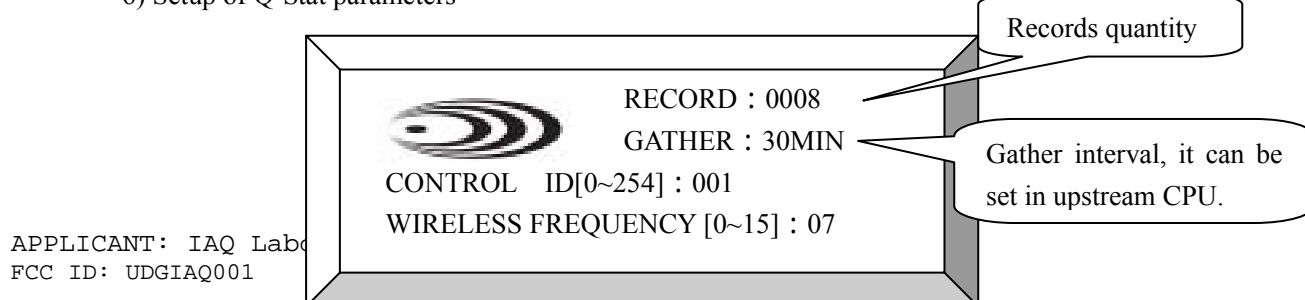


Figure 21

This interface is used for setup Q-Stat ID number and wireless frequency range.

Press [↕]: modify flickering value.

Press [↔]: select ones place, tens place or hundreds place of Q-Stat ID number and wireless frequency range.

Press [OK]: save and back to function select menu.

## 7) Setup sensors parameters

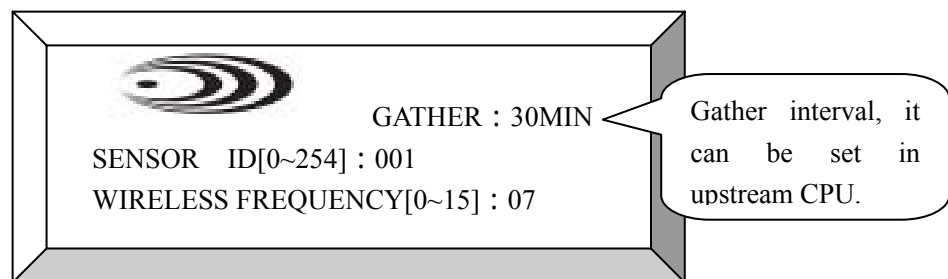


Figure 22

This interface is used for sensors' parameters: information transmit interval, sensors' ID number and wireless frequency range.

Note: this operation will be done while sensors are in the running status. And appointed type of wire should be used to connect with Q-Stat and sensors, see detailed connection method in *Connection of Installation*.

Press [↕]: modify flickering value.

Press [↔]: select ones place, tens place or hundreds place of sensors' ID number.

Press [OK]: setup sensors' parameters and back to function select menu. After press [OK], system singing one time indicating sensors' parameters setup succeed and singing twice indicating setup failed.

## 8. Interconnection Setting

### 8.1 Connection between computer and Q-Stat

A. Schematic diagram between computer and multi-Q-Stat.

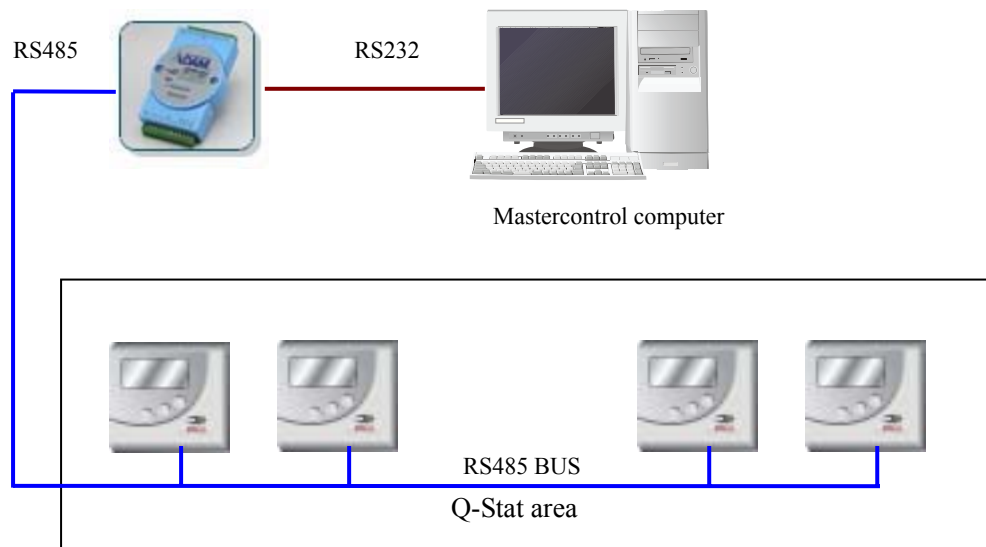


Figure 23

B. Serial numbers of the Q-Stat ( ID numbers )

Use serial numbers to identify each sensor while they are interconnected. Serial numbers can be set by the following two ways:

- ( 1 ) Set on the Q-Stat. See detailed operation in *Q-Stat basic operation*. It will be effective after electrified again.
- ( 2 ) Set on administrative software. See specific operation in: *software user manual*.

C. Connection between Q-Stat and RS485

J7:A of Q-Stat connect with D+/A of RS485 transducer, J7:B of Q-Stat connect with D-/B of RS485 transducer.

### 8.2 Connection between Q-Stat and sensors

A. Wireless frequency range of Q-Stat and sensors

Different Q-stat adopts different wireless frequency range, every Q-Stat and its corresponding sensor adopt the same wireless frequency range.

B. Serial number of sensors (ID number)

Serial numbers are used to identify each sensor while multi sensors are interconnected under one Q-Stat. Serial numbers should not be repeated and setup before installation.

C. Connection between Q-Stat and sensors (used for setup parameters of sensors)

While setup parameters of sensors by Q-Stat, one end of three core wire connect with J12 of Q-Stat, and the other end connect with J3 of the sensors.

See *Q-Stat Basic Operation* to setup of Sensors parameters in detail.

## **9. After service**

All the sold product and provided technique are promised to be eligible, advanced and stable. VERITAS TECH attaches importance to after service and technical support. We provide technical consulting and after service technical support in time for users, answer technical and operation problems in using by phone, contact the users timely to find out the system service condition and feedback, and dispatch technicians to overhaul the system timely. We provide all the service for equipments normal operation under guaranty for free, including system software amendment, maintenance and upgrading service. The product hardware is under one year guaranty and is charged of maintenance for long. Our company provides one-year free maintenance, please pay attention to the product performance and operation criterion. We provide a limited warranty for 12 months from the date of system installation and testing and approval of acceptance. The two parties can consult with signing service contract after 12 months warranty.



## 10. Technical support

You can contact us by the following ways, no matter which problem you met.

We can be reached by:

Technical support tel: 714-665-5908

E\_Mail : tech@iaqLi.com

Marketing department tel: 714-665-5908

E\_Mail : market@iaqLi.com

Administrative department tel: 714-665-5908

E\_Mail : master@iaqLi.com

Fax: 714-734-4263

Website: <http://www.iaq.com>

## **11. Warranty**

### **11.1 Time of warranty**

VERITAS TECH provides warranty covering defects in materials or workmanship for 12 months from the date of purchase. Maintenance fee will be received when exceed the time of warranty.

### **11.2 Scope of warranty**

Q-Stat and sensor deemed to be defective in hardware or software in the time of warranty will be repaired at no charge to the purchase, please pay attention to the following items:

- ( 1 ) Abnormal questions occurred by following user manual;
- ( 2 ) Questions occurred by software setting improper when leave the factory;
- ( 3 ) Questions occurred by product itself;
- ( 4 ) Questions about link up the networks or network breakdown by regular using;
- ( 5 ) Questions occurred by product instable voltage when product is powers on.

### **11.3 Scope of non- warranty**

In order to protect your legal rights, avoiding unnecessary loss, VERITAS TECH won't be charge with guaranteed maintenance about the following caused questions, please choose the other paid service.

- 1) The product has not been damaged due to misuse, abuse, or improper administration of user instructions.
- 2) The product has not been altered, modified, defaced, or serviced by anyone other than company or its authorized service agents.
- 3) The malfunction is not due to leaky or defective batteries or use of the product with accessory items. (Accessory items used with the product (such as batteries) are not covered by this warranty).

- 4) The product has not been damaged due to circumstances beyond user's control and natural calamity(such as earthquake、 fire and war);
- 5) The product has not been damaged due to other equipment's trouble or act of man or surplus factor;
- 6) The product has not been damaged due to condition、 temperature and humidity were out of line;
- 7) The product has not been damaged due to improper transportation;
- 8) The product has not been damaged due to unauthorized change or disassemble the equipment or software without VERITAS TECH permission;
- 9) The product has not been damaged due to privately disassemble then transferred to others; Out of operational life or expiration of warranty.

**FCC NOTE:**

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THE ANTENNA PROVIDED IS A UNIQUE ANTENNA. BY INSTALLATION OF UNAUTHORIZED ANTENNA TO THIS EQUIPMENT. SUCH UNAUTHORIZED INSTALLATION COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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