

TH-3 WIRELESS TEMPERATURE /HUMIDITY SENSOR

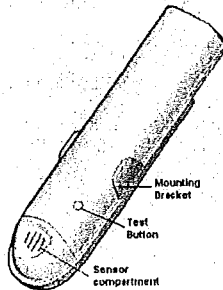
The TH-3 is a battery operated wireless temperature/humidity sensor specially designed for the LS-30 Security System. With its small size and wireless operation, the sensor can be put anywhere to monitor the temperature and humidity in a room, a chamber or even a freezer and the reading will be remotely shown on the Base Unit.

A. Enrolling Code

1. Loosen the screw of the TH-3, then open the case and place a CR-2/ 3V Lithium battery in right polarity.

Important Notice for Changing Battery:

Please press TEST button for 5 seconds to discharge the energy that remains in the capacitors of TH-3 after removing the old battery. Otherwise, it may not restart after changing battery.



2. Select "Installer Mode" on the Base Unit, and enter Installer Password to gain access authority. Then select \Set Device\Enroll Device\Special Sensor\Enter Zone No. to enroll the ID of the TH-3 by pressing its TEST button.

If the Base Unit receives correct RF code from the sensor, the Base Unit will issue "Ding Dong" and show "Enroll OK!" on the LCD display.

Now the Base Unit has learnt one type of the two sensors (Temperature or Humidity sensor), next step is to enroll another type sensor.

Each time when you press the TEST button on the sensor it will send current temperature or humidity reading alternatively.

3. Press **YES**, enter the Zone number and press the TEST button on the sensor again to enroll another type sensor.

Note: If LCD shows "Duplicate" it means the received signal type of the reading (Temperature or Humidity) is the same as the last reading. You have to go to step 2 to enroll another type sensor again.

4. After the Device Enroll is complete, you can go to "Device Check" to check the sensors.

Select "Master Mode" on the Base Unit and press **YES** for "System Check? Or Hot Key" then select "Device Check"

(There should be two new sensors in the device list, one is Temperature sensor and the other one is Humidity sensor.)

5. You may change its various attributes under \Set Device\Change Device Setting\Special Sensor to fulfill different requirements.

The sensor can be set as an **Alarm Device** or a **Control Device**. (Refer to the blocks below).

B. Mounting

The sensor can be fixed on the wall by using the mounting bracket or hung by using the belt that comes with the sensor.

The sensing window should be placed downward to avoid water going into the sensor compartment directly. To measure the temperature of water, the sensor should be placed in a watertight plastic bag.

Note: - Do not mount the sensor on a metallic wall or frame, the RF transmission range will be shrunk due to radio signal attenuation.

- If the sensor is put in a closed freezer, there may be a large reduction in radio range. The user should move the Base Unit closer to the sensor or using a signal repeater.

C. Testing

Each time when you press the TEST button on the sensor it will send the current temperature (LED flashes once) or humidity reading (LED flashes twice) alternatively.

D. Temperature/Humidity Limit Setting

Select "Installer Mode" on the Base Unit, and enter Installer Password to gain access authority. Then select \Set Device\Special Sensor Limit Set\Enter Zone Number and then set High Limit or Low Limit. If the temperature/humidity reading is over these limits, the LS-30 will issue Special Sensor alarm and inform the user (Special telephone number should be set).

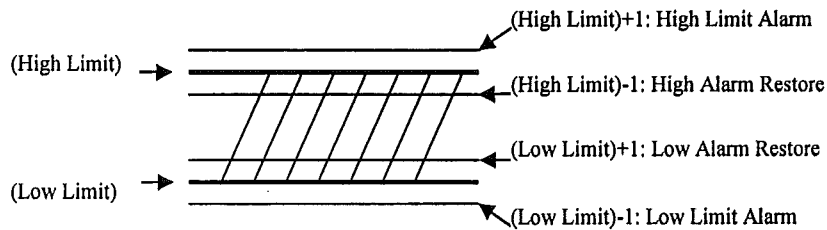
If both high/low limits are set, the high temperature limit should be greater than the low temperature limit at least for 1°C and the high humidity limit should be greater than the low humidity limit at least for 5%.

Note: If the sensor works in the temperature over +65°C or below -25°C for a long time, the sensor and battery life will be reduced and the performance may be degraded.

E. Operation and Display

To save battery power, the sensor sends reading automatically only when the temperature/humidity change is over 1°C/3%. If there is no any change for a long time, the sensor will send the reading hourly to refresh the display. If there is any new reading transmitted from the sensor, the Base Unit will keep the last reading on the display alternatively with the time display each for 5 seconds. You can clear the reading by Hot Key \square .

Alarm Device: The system issues alarm when the reading is over the limits and issues restore signal when the reading returns to the limits.

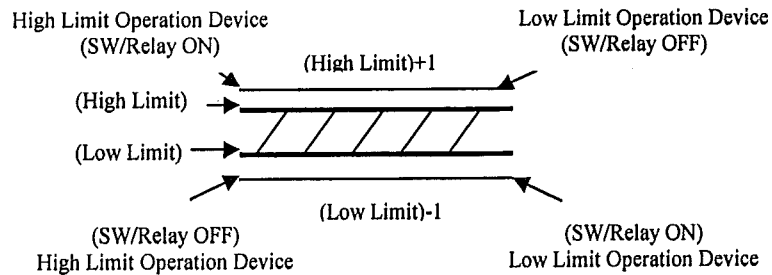


Control Device: The reading from this device will not issue any alarm even over the limits.

Depends on the setting of High/Low limit, it can control the operation of the switches or the Relay output.

High Limit Operation: Turn on at high limit reading and turn off at low limit reading, to control all kinds of freezer or dehydrator.

Low Limit Operation: Turn on at low limit reading and turn off at high limit reading, to control all kinds of heater or humidifier.



SPECIFICATIONS

Supervision: sends temperature/ humidity reading at 30-minute interval alternatively.

Power Source: one CR-2 Lithium battery.

Reading Update Speed: 30-seconds/ Reading max.

Temperature Low/High Limit: -40°C/103°C.

Temperature Accuracy: 0°C to 50°C +/- 1°C max.

-40°C to 85°C +/- 2°C max.

85°C to 103°C +/- 3°C max. (Not suitable for long time work.)

Humidity High /Low Limit: 0% to 100%

Humidity Accuracy: 20% to 80% +/- 4% max.

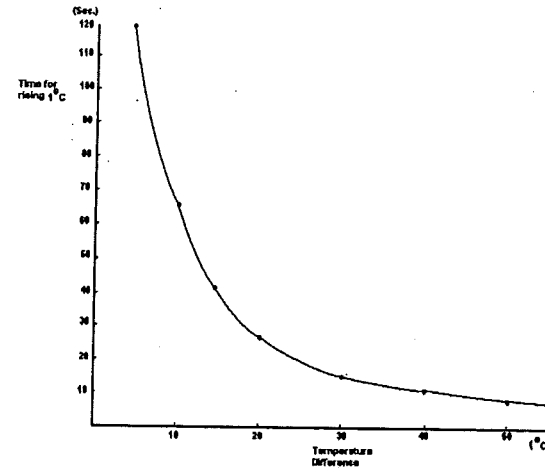
0% to 100% +/- 5% max.

Estimated Battery Life: 1.2 years (Temperature/Humidity variation 10 times/day)

Low Battery Detection: 2.6V +/- 0.1V.

Size: 107x25x21 mm w/o bracket, 109x28.5x23 mm with bracket.

Weight: about 35 g w/o battery, 46 g with battery



Temperature Rising (Descending) Speed vs. the Temperature Difference

WARRANTY

The Manufacturer warrants its products (hereinafter referred to as the Product) to be in conformance with its own plans and specifications and to be free of defects in materials and workmanship under normal use and service for a period of twelve months from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period. At its option, to repair or replace the Product or and part thereof. To exercise the warranty the Product must be returned to the Manufacturer freight prepaid and insured.

This warranty does not apply in the following cases: improper installation, misuse, failure to follow installation and operating instructions, alteration, abuse, accident or tampering, and repair by anyone other than the manufacturer.

This warranty is exclusive and expressly in lieu of all other warranties, obligations or liabilities, whether written, oral, express or implied, including any warranty of merchantability or fitness for a particular purpose, or otherwise. In no case shall the Manufacturer be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties whatsoever, as aforesaid.

This warranty shall apply to the Product only. All Products, accessories or attachments of others used in conjunction with the Products, including batteries, shall be covered solely by their own warranty, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Product due to Products, accessories, or attachments of others, including batteries, used in conjunction with the Products.

The Manufacturer shall have no liability for any death, personal and/or bodily injury and/or damage to property or other loss whether direct, indirect, incidental, consequential or otherwise, based on a claim that the Product failed to function.

NOTE: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating to conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

