ACCESSORIES

The LS-30 system includes a full range of accessories, so you can customize many feature of your security system.
All the radio transmitters used in the LS-30 system, except the Remote Controller, have a unique random code that is set by the factory with 16,777,216 combinations in total. Also with specially designed transmission timing control, the LS-30 system can effectively prevent mutual interference from other transmitters in the system. The Remote Controller uses copy-preventing hopping-code technology, changing its radio code every time you press the button. The combinations possible through this hopping-code are up to 7.3 X 10^{19}. To comply with the regulations in most countries, radio power is limited to below 10mW, and effective range is about 100 meters measured at open field. The range may be somewhat less indoors, depending on the layout of building construction and furniture.
You may enroll all the wireless accessories and change their related settings, either through the guidance of the interactive LCD display on the Base Unit explained in the "INSTALLATION" section that follows, or by using a computer with the proprietary software "HyperSecureLink" through an interface adapter, which offers a quicker and simpler way to perform the installation in.

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

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 discharg the energy that remains in the capacitors of TH-3 after removing the old battery. Otherwise, it may nc 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 in 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.

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 then the low temperature limit at least for 1℃ and the high humidity limit should be greater than the low humidity limit at least for

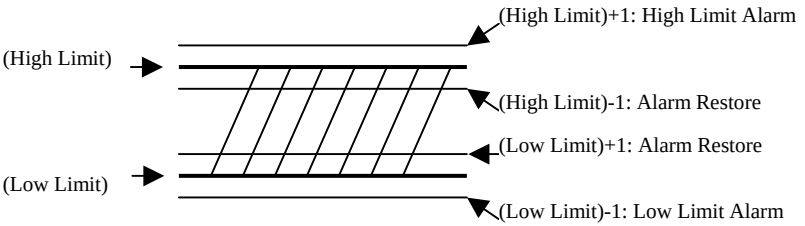
Note: If the sensor works in the temperature range over +65℃ to -25℃ for a long time, the sensor's life will be reduced and the performance may be degraded.

E. Operation and Display

To save battery power, the sensor sends reading automatically only when the temperature/humidity change is over 1℃/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 C.

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

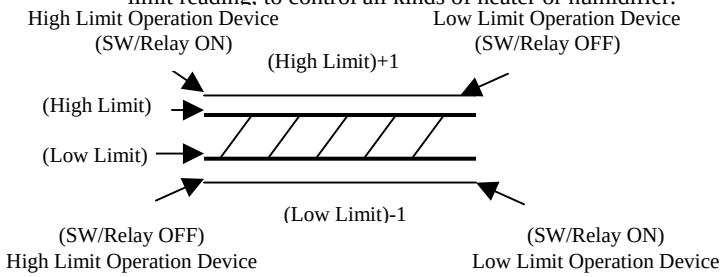


Control Device: The reading from this device will not issue any alarm even over the limits.

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

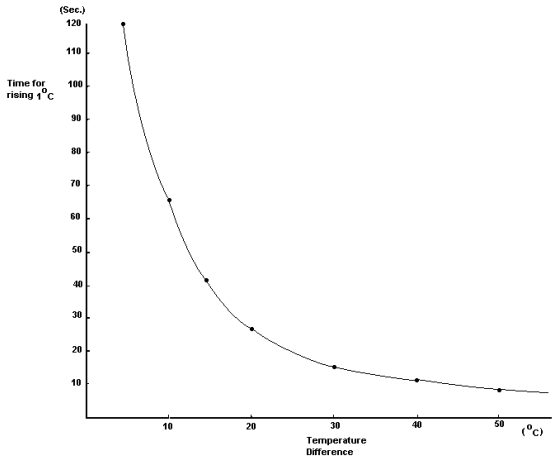
High Limit Operation: Turn on at high limit reading and turn off at low limit reading, to control all kinds of freezer or dehydrator.

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℃/103℃.
Temperature Accuracy: 0℃ to 50℃ +/- 1℃ max.
-40℃ to 85℃ +/- 2℃ max.
85℃ to 103℃ +/- 3℃ 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