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Dallas, Texas, USA

CONTROLS KITS AND ACCESSORIES

505196M
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COMBINATION TEMPERATURE / HUMIDITY (RH) SENSOR KIT

INSTALLATION INSTRUCTIONS FOR COMBINATION TEMPERATURE / HUMIDITY (RH) SENSOR KIT (21W06 AND 101046) USED WITH LG/LC/SG/SC UNITS

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

⚠ CAUTION

ELECTROSTATIC DISCHARGE (ESD) Precautions and Procedures



Electrostatic discharge can affect electronic components. Take precautions during unit installation and service to protect the unit's electronic controls. Precautions will help to avoid control exposure to electrostatic discharge by putting the unit, the control and the technician at the same electrostatic potential.

Neutralize electrostatic charge by touching hand and all tools on an unpainted unit surface before performing any service procedure.

Shipping and Packing List

- 1 - Sensor (A37)
- 2 - Screws

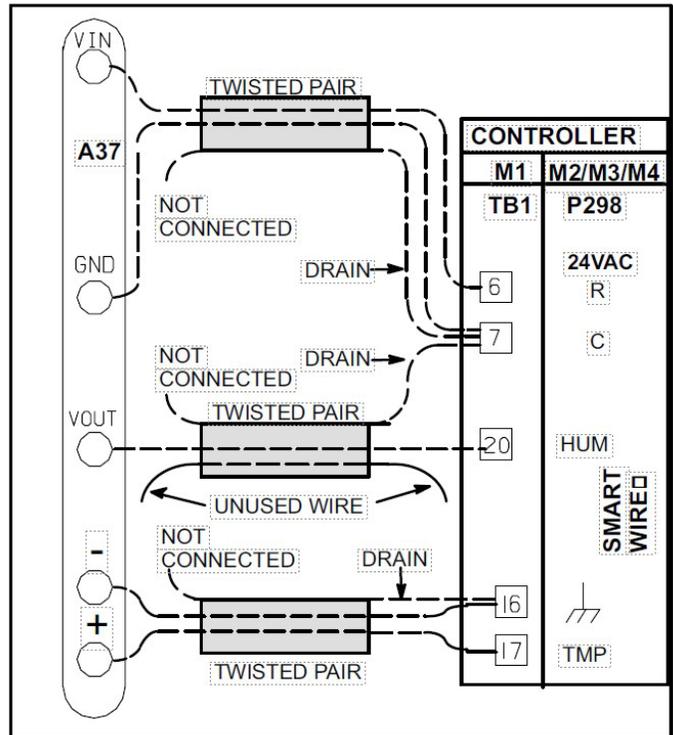
Cable Applications

Wire runs of 50' (15m) or less:

Use three separate shielded cables containing 20AWG minimum, twisted pair conductors with overall shield (Belden type 8762 or 88760 [plenum] or equivalent). Connect cable shield drain wires as shown in Figure 1.

Wire runs of 150' (46m) or less:

Use three separate shielded cables containing 18AWG minimum, twisted pair conductors with overall shield (Belden type 8762 or 88760 [plenum] or equivalent). Connect cable shield drain wires as shown in Figure 1.



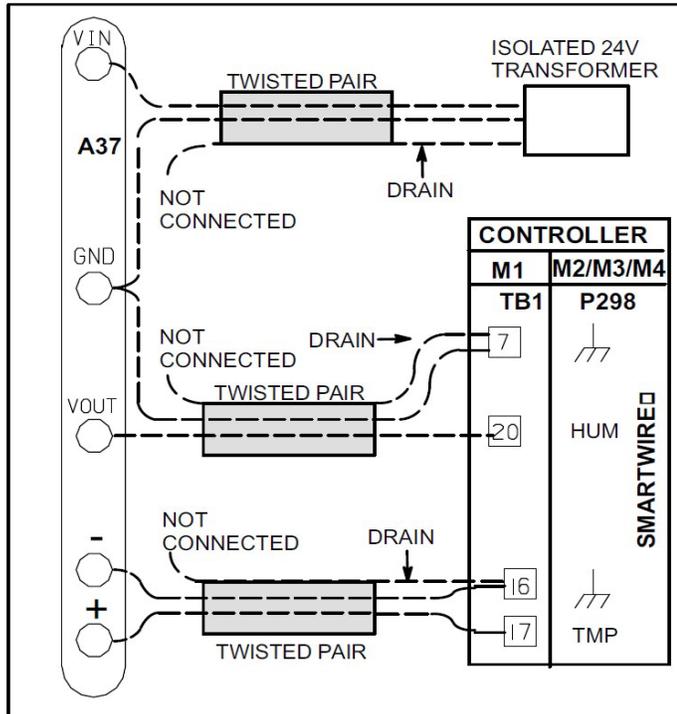
**Figure 1. Field Wiring
[150 ft. (46m) or Shorter Runs]**



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Wire runs over 150 feet (46m):

Use a local, isolated 24VAC transformer such as Lennox cat #18M13 (20VA minimum) to supply power to sensor as shown in figure 2. Use three shielded cables containing 20AWG minimum, twisted pair conductors with overall shield [Belden type 8762 or 88760 (plenum) or equivalent].



**Figure 2. Field Wiring
[150 ft. (46m) or Longer Runs]**

Wall-Mount Installation

Install sensor on a standard handy box or directly on wall. Locate sensor in conditioned space approximately 5 feet (1-1/2m) above the floor in an area with good air circulation at average temperature.

Avoid locating the sensor where it might be affected by:

- Drafts or dead spots behind doors and in corners
- Hot or cold air from ducts
- Radiant heat from sun or appliances
- Excessive moisture
- Corrosive fumes
- Excessive vibration
- Extremely high temperatures

1. Route shielded cables from the rooftop unit to the appropriate location in the conditioned space.
2. Loosen screws and remove sensor cover (see Figure 3).

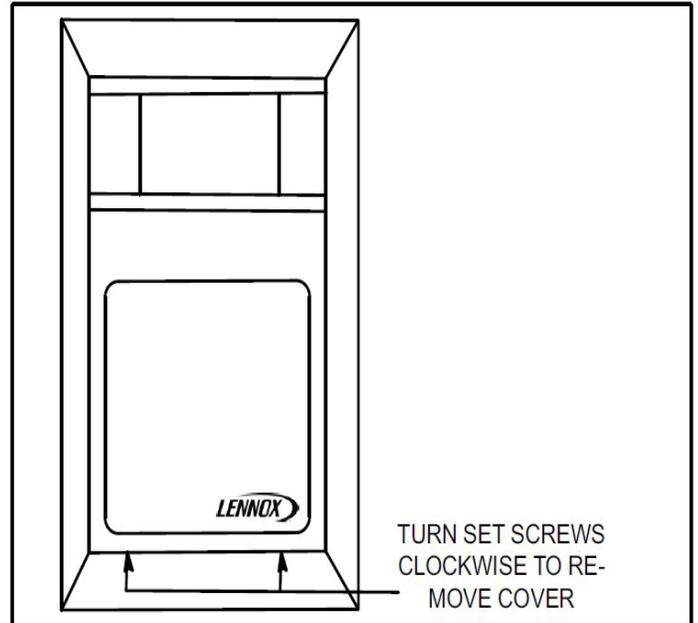


Figure 3. Temperature/Humidity Sensor (A37)

3. Center opening in baseplate over opening in wall.
4. Mark holes for screws (see Figure 4).
5. Remove baseplate and drill holes.

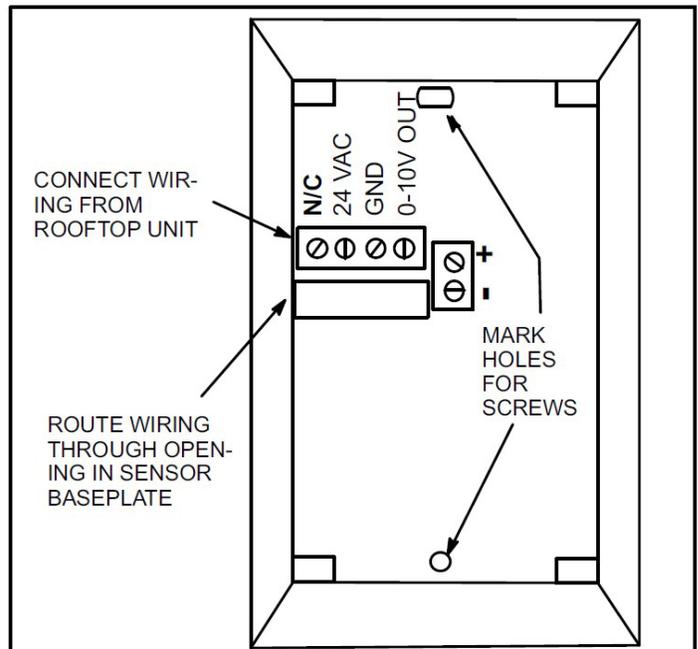


Figure 4. Wall-Mount Sensor Baseplate

6. Insert wall anchors (field provided) and align baseplate over opening in wall.
7. Pull wiring through opening in baseplate.
8. Secure baseplate to wall with screws.
9. Connect wiring for appropriate length of run as shown in Figure 1 or 2.
10. Replace humidity sensor cover and turn set screws counterclockwise to secure cover in place.

DIP Switch Settings

DIP switches are set at the factory. Proper settings are shown in Figure 5.

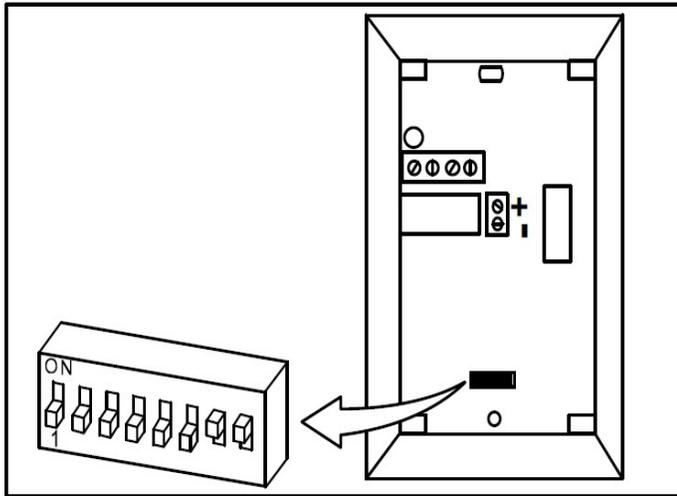


Figure 5. Wall-Mount DIP Switch Settings

Check-Out

NOTE: The temperature thermistor should read a resistance of 11K Ohm at 77F (+/- 1.5%).

Verify the humidity reading is proper by using the L Connection ® PC Software, the NCP (A105), the controller (A55), or by measuring the sensor output voltage. Relative humidity should correspond to the sensor (A37) output voltage listed in table 1. For example: if indoor air relative humidity is 80% + 3%, the humidity sensor output should read 8.00VDC.

Table 1. RH to Sensor Output Voltage

Relative Humidity (%RH ± 3%)	Sensor Output (VDC)
20	2.00
30	3.00
40	4.00
50	5.00
60	6.00
70	7.00
80	8.00
90	9.00

Check the sensor output annually for accuracy. Keep the air intake openings on the sensor clean and free of obstructions and debris.

Display zone sensor reading on the controller M1 IMC:

1. Turn the "TMP" DIP switch ON.
2. Press the pushbutton 4 times.
The IMC readout will alternate between A2 (output being read) and the temperature.
3. Press the pushbutton 5 more times. The IMC readout will alternate between rH (output being read) and the zone sensor humidity reading.

M2:

1. Use the scroll buttons to locate DATA->SENSORS->ZAT.
The Zone Air Temperature (ZAT) displays (e.g. ZAT:79F).
2. Refer to the controller manual for more details.

M3:

The current ZAT reading when enabled is always displayed on the status screen. It can also be displayed using the following procedure:

1. Use the scroll buttons to locate DATA > IN/OUTPUTS > SENSORS > LOCAL. From the LOCAL SENSOR screen, scroll down to the ZAT information. The Zone Air Temperature (ZAT) displays (e.g. ZAT: 79F).
2. Refer to the controller manual for more details.

M4:

The current ZAT reading (when enabled) displays on the system overview screen of the Lennox® CORE Service App. The ZAT reading can also be found in the Data Menu (after connecting to the RTU with the app):

1. Navigate to the RTU Menu.
2. Select SYSTEM DATA / SENSOR DATA/ OUTPUTS.
3. Select LOCAL INPUTS, SENSORS.
The Zone Air Temperature will be listed (e.g. ZAT: 79F).
4. Refer to the controller manual for more details.

