

enerstat

Installation Instructions SL-IDS Slimline Indoor Sensor

Introduction

The indoor sensor is designed to sense the air temperature at a remote location and send this information by digital communications to the thermostat. Up to six sensors can be connected together to provide temperature averaging. The sensor also can be modified for use with a duct sensor, or to connect an existing RSK4 network to a new thermostat.

Single Sensor Installation

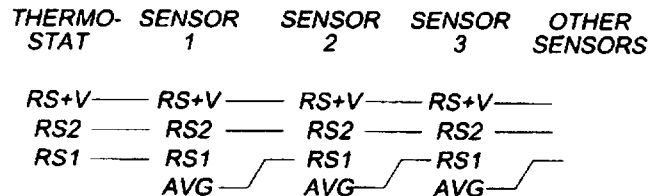
1. Install the Slimline thermostat according to the instruction manual supplied with it. Check that the thermostat is operating. (Display shows the correct temperature.)
CAUTION: Remove the thermostat from the subbase while wiring the sensor to avoid damage from live wires. This is important.
2. Install nonshielded 3 conductor wire from the Slimline thermostat to the remote sensor location. Maximum distance is 300 ft. (90m).
3. Open the sensor case by depressing the button on the bottom edge of the case until the latch releases. Remove the cover by pulling it out and up at the bottom.
4. Remove the board from the subbase by pulling back the latch that holds it at the center bottom.
5. Use the subbase as a template to mark the mounting hole locations on the wall. Drill size for the wall anchors is 1/4 inch. Mount the subbase over the wires coming out of the wall using the two screws and anchors provided. The angled corner on the subbase should be in the bottom right.
6. Snap the board back into the subbase. Check to be sure that the latch holds the board properly. Check that the thermistor (sensor element) is positioned under the holes in the cover but not touching the cover or subbase.
7. Strip 1/4 inch of insulation from the three wires at the remote sensor. Install the wires in the terminals labeled RS2, RS+V and RS1. Push any extra wire back into the wall cavity. Seal the hole in the wall around the cable to eliminate any draft that might affect the sensor. (Refer to Figure 1.)
8. Note the wire color going to each terminal. The order of the wires on the thermostat is not the same as the sensor.
9. Connect the wires on the thermostat subbase to the terminals labeled RS2, RS1 and RS+V. Make sure that each terminal on the sensor is wired to the terminal with the same name on the thermostat.
10. Mount the thermostat on the subbase and check to be sure that it is showing the temperature.
11. Reinstall the cover on the remote sensor by hooking it on the top and snapping the bottom into place.

Using Multiple Sensors for Temperature Averaging

Any number from two to six sensors may be connected together to provide temperature averaging in a large area or several zones being controlled by the same system. Maximum distance between any 2 sensors is 300 ft. (90m).

1. Wire the first sensor using the single sensor instructions.
2. **CAUTION: Make sure there is no power to the sensors by removing the thermostat from the subbase.**

3. Connect wires to each additional sensor in the following manner. An outdoor sensor also can be connected in any location in the chain. (Refer to Figure 2.)



4. Replace the thermostat on the subbase. Check for proper operation of each sensor by connecting a jumper between terminals 1 and 2. This shorts out the thermistor. The displayed temperature will go up several degrees if the sensor is properly installed. Repeat for each sensor.

Retrofit to Multiple RSK4 Sensors

If an older thermostat with multiple sensors is replaced, the existing RSK4 sensors may still be used. An SL-IDS sensor must be added between them and the new thermostat.

1. Install the new sensor using the single sensor instructions.
2. Clip the thermistor from the new sensor with wire cutters as shown in Figure 3.
3. Connect the two-wire shielded cable from the RSK4 sensors to terminals 1 and 2 of the new sensor. Connect the shield of the cable to terminal 2 also.

Using a Duct Sensor

The sensor and thermostat are designed to sense air temperature in a room. The fast moving air in a duct has small but rapid changes in temperature. This will affect the control algorithm of the thermostat. For better control, it is recommended that the air temperature is sensed in the room.

1. Install the indoor sensor using the single sensor instructions.
2. Clip the thermistor from the indoor sensor with wire cutters as shown in Figure 3.
3. Install the duct sensor in the return air duct according to the instructions supplied with it. Connect the two wires from the duct sensor to terminals 1 and 2 of the indoor sensor. If shielded cable was required because of a long distance to the sensor box, connect the shield to terminal 2 also.

Troubleshooting

Thermostat has no display: Check wiring between thermostat and sensor. Incorrect wiring can damage the thermostat, transformer or blow a fuse. Check 24VAC supply.

Thermostat reads AC: 24VAC power is disconnected.

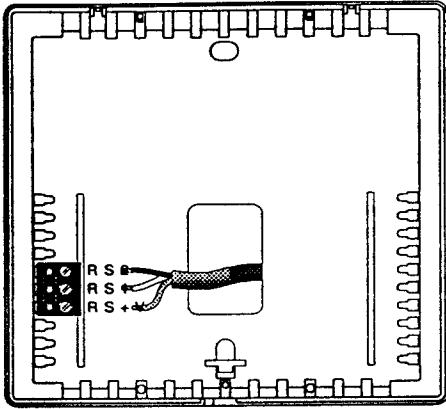
Not sure if display is showing local or remote temperature: Breathe on the wall near the bottom left corner of the thermostat. Temperature will go up for a few seconds if sensing locally.

Thermostat displays very high temperature: Wires on sensor element are shorted together. Separate them.

Thermostat displays very low temperature: Check wiring of probe or duct sensor. Sensor element is not connected to board or is broken.

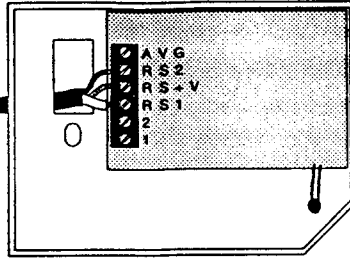
SL-IDS INSTALLATION DIAGRAMS

SLIMLINE THERMOSTAT



SINGLE SENSOR

SL-IDS

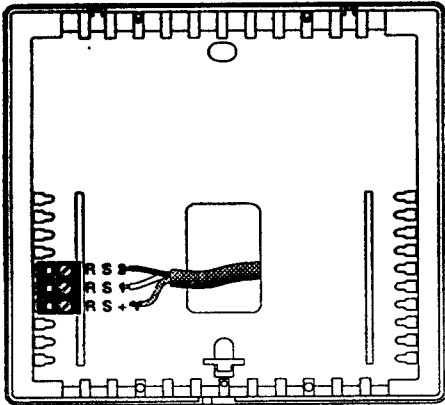


Specifications:

Power supply: 12 to 30 V AC or DC (24 V Nominal).
 Operating temperature: 0 to 50°C.
 Maximum Relative humidity: 90% (non-condensing).
 Measurement Range: 0 to 48°C or 28 to 124°F.
 Accuracy: $\pm 1^\circ\text{C}$ from 15 to 30°C ($\pm 2^\circ\text{F}$ at 68°F)
 after 30 minutes of continuous operation.
 Max. cable length between any 2 units: 300ft. (90m)
 Max number of indoor sensors in daisy chain: 6
 Max number of outdoor sensors in daisy chain: 1

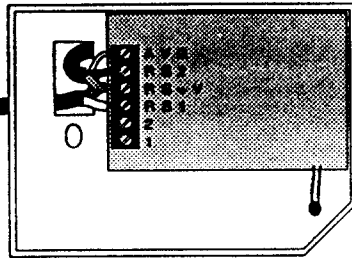
FIGURE 1

SLIMLINE THERMOSTAT



MULTIPLE SENSORS
(TEMPERATURE AVERAGING)

SL-IDS



SL-IDS

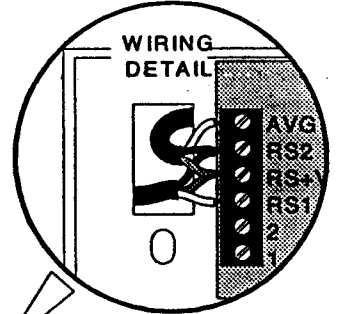
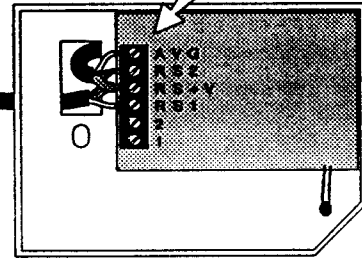
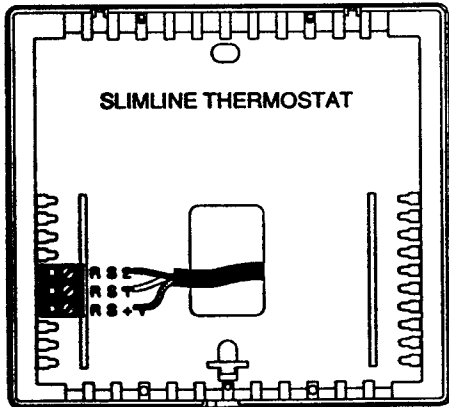
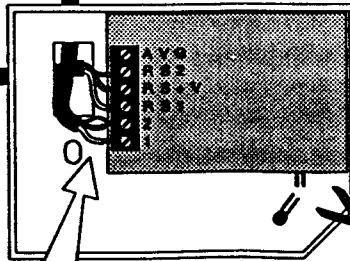


FIGURE 2

RETROFIT TO
MULTIPLE RSK4 SENSORS
OR
INSTALLING AN RDS-10K DUCT SENSOR



SL-IDS



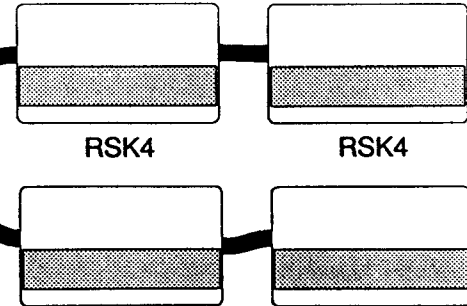
CONNECT THE
SHIELD TO
TERMINAL 2

CLIP OUT
THERMISTOR

FIGURE 3

RSK4

RSK4



EXISTING RSK4 NETWORK

EXISTING
SPLICE

RSK4

RSK4

RSK4

RSK4

RDS-10K DUCT SENSOR

RETURN
AIR DUCT