INSTALLATION INSTRUCTIONS

T-55 SPACE TEMPERATURE SENSOR WITH OVERRIDE

T-56 SPACE TEMPERATURE SENSOR WITH OVERRIDE & SETPOINT ADJUSTMENT

COMPONENT LIST

The Model T-55 Space Temperature Sensor with Override and T-56 Space Temperature Sensor with Override & Setpoint Adjustment consists of the following components:

- (1) Space temperature sensor
- (2) 6-32" x 1" round head machine screws

LOCATING THE SENSOR

The T-55 and T-56 space temperature sensors measure building interior temperature and should be located on an interior building wall. The sensor wall plate accommodates the NEMA standard 2 x 4 junction box. The sensor can be mounted directly on the wall surface if acceptable by local codes.

Do not mount the sensor in drafty locations such as near air conditioning or heating ducts, over heat sources such as baseboard heaters, radiators, or directly above wall mounted lighting dimmers. Do not mount the sensor near a window that may be opened, or near a wall corner or door. Sensors mounted in these areas will have inaccurate and erratic sensor readings.

Mount the sensor approximately 5 ft from the floor, in an area representing the average temperature in the space. Allow at least 4 ft between the sensor and any corner and mount the sensor at least 2 ft from an open doorway.

Note: Clean sensor with damp cloth only. Do not use solvents.

TO INSTALL THE T-55 AND T-56 SENSOR

(See Figure 1 below)

1. Locate the two Allen-type screws at the bottom of the sensor.

2. Turn the two screws clockwise to release the cover from the sensor wall mounting plate.

3. Lift the cover from the bottom and then release it from the top fasteners.

4. Feed the wires from the electrical box through the opening in the center of the sensor mounting plate.

5. Using two no. 6-32 x 1 mounting screws (provided with the sensor) secure the sensor to the electrical box.

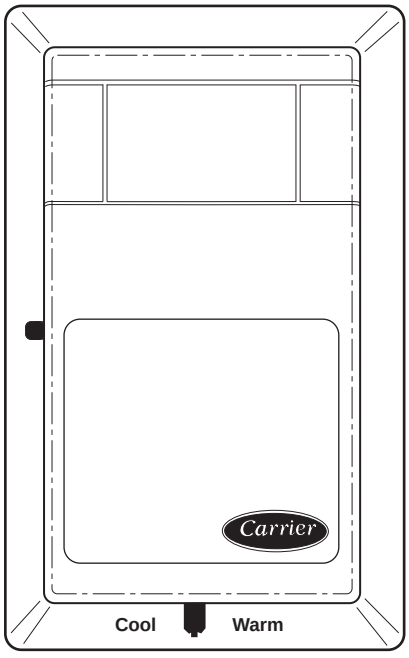
6. Use 20 gage wire to connect the sensor to the controller. The wire is suitable for distances of up to 500 ft. Use a three-conductor shielded cable for the sensor and setpoint adjustment connections. The standard CCN communication cable can be used. If the setpoint adjustment (slidebar) is not required, then an unshielded, 19 or 20 gage, two-conductor, twisted pair cable can be used.

   The CCN network service jack requires a separate, shielded CCN communication cable. Always use separate cables for CCN communication and sensor wiring. (Refer to Figure 2 or 3 for wire terminations.)

7. Replace the cover by inserting the cover at the top of the mounting plate first, then swing the cover down over the lower portion. Rotate the two Allen head screws counterclockwise until the cover is secured to the mounting plate and located in position.

8. For more sensor information, see Table 2 for thermistor resistance vs. temperature values.

Figure 1
T-56 Space Temperature Sensor



WIRING THE T-55 AND T-56 SENSOR

1. Refer to Figure 2 or 3. Identify the sensor wiring cable. If using 3-conductor cable, this cable will contain a red, black, and white wire.

2. Strip back the cable jacket for at least 3 inches. Strip 1/4 in of insulation from each conductor. Cut the shield and drain wire from the sensor end of the cable.

3. Connect the sensor cable as follows:

    a. Connect the Red wire to the SPT terminal on the controller. Connect the other end of the Red wire to the left terminal on the sensor's SEN terminal block.

    b. Connect the Black wire to the SPTGND terminal on the controller. Connect the other end of the Black wire to the remaining open terminal on the sensor's SEN terminal block.

    c. On the T-56 sensor, connect the remaining wire (White/Clr) to the controller's T-56 terminal. Connect the other end of the White/Clr wire to the rightmost terminal on the sensor's SET terminal block.

    d. On T-56 sensors, install a jumper between the two center terminals (right SEN and left SET).

WIRING THE CCN NETWORK COMMUNICATION SERVICE JACK

Wire Specifications

The Carrier Comfort Network (CCN) Communication Bus wiring is field supplied and field installed. It consists of shielded three-conductor cable with drain (ground) wire. The cable selected must be identical to the CCN Communication Bus wire that is being used for the entire network. Refer to the CCN Installation and Start-up Manual (808-211) for recommended cable types. Refer to Table 1 for color code recommendations. For wiring instructions, refer below to the instructions titled To Wire the CCN Service Jack.

Table 1
Color Code Recommendations

Signal Type	CCN BUS Wire Color	Plug Pin Number
+	Red	1
Ground	White	2
-	Black	3

Note: The communication bus drain wires (shields) must be tied together at each controller. If the communication bus is entirely within one building, the resulting continuous shield must be connected to ground at only one single point. If the communication bus cable exits from one building and enters another building, connect the shields to ground at a lightning suppressor in each building where the cable enters or exits (one point only).

To Wire the CCN Service Jack

1. Refer to Figures 2 and 3 below. Strip back the jacket from the CCN communication cable(s) for at least 3 inches. Strip 1/4 in of insulation from each conductor. Remote the shield and separate the drain wire from the cable. Twist together all the shield drain wires and fasten them together using an closed end crimp lug or a wire nut. Tape off any exposed bare wire to prevent shorting.

2. Connect the CCN + signal wire(s) (Red) to Terminal 5.

3. Connect the CCN - signal wire(s) (Black) to Terminal 2.

4. Connect the CCN Gnd signal wire(s) (White/Clr) to Terminal 4.

5. Connect to the RJ-11 port using the Network Service Tool or a similar CCN user interface and verify that you can communicate with CCN controllers on the CCN Communication Bus.

Figure 2
T-55 Space Temperature Sensor Wiring

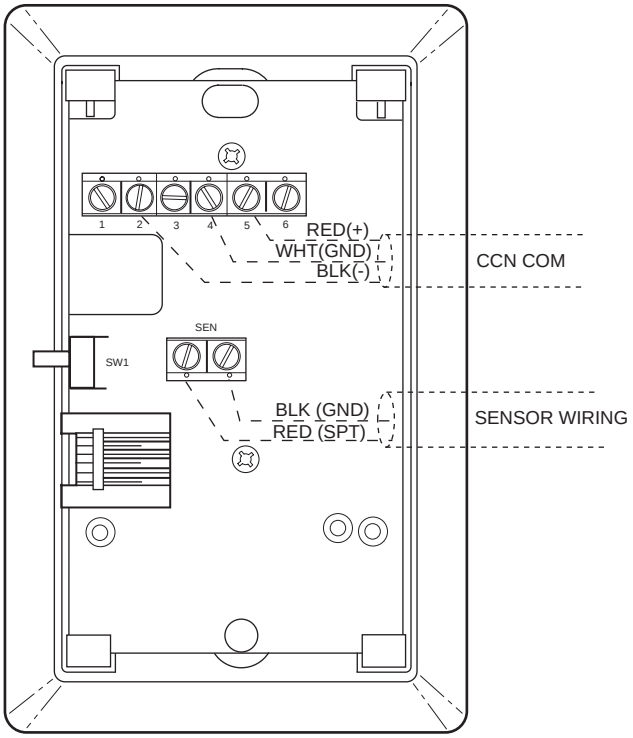


Figure 3
T-56 Space Temperature Sensor Wiring

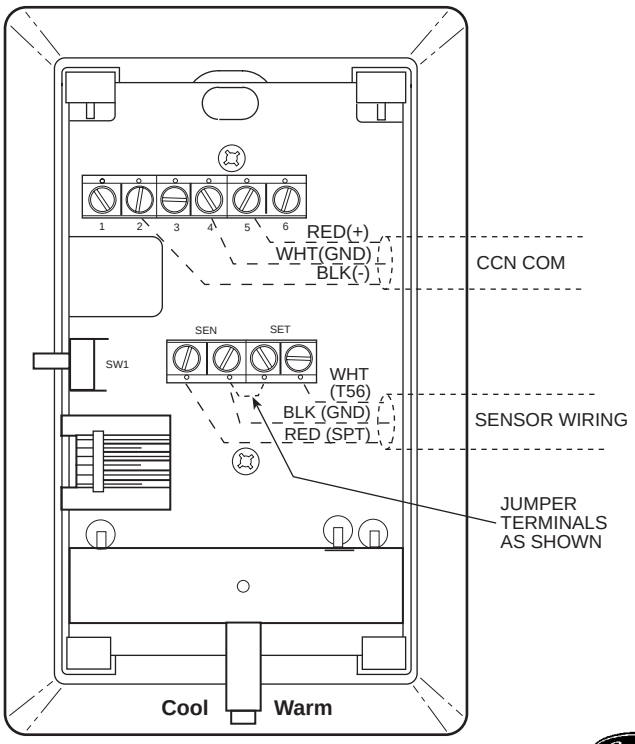


Table 2
Thermistor Resistance vs Temperature Values
for Space Temperature Sensor

Temp (C)	Temp (F)	Resistance (Ohms)
-40	-40	335,651
-35	-31	242,195
-30	-22	176,683
-25	-13	130,243
-20	-4	96,974
-15	5	72,895
-10	14	55,298
-5	23	42,315
0	32	32,651
5	41	25,395
10	50	19,903
15	59	15,714
20	68	12,494
25	77	10,000
30	86	8,056
35	95	6,530
40	104	5,325
45	113	4,367
50	122	3,601
55	131	2,985
60	140	2,487
65	149	2,082
70	158	1,752