

# Futura Temperature Sensor (FTS-3) Installation Instructions

## Description

Novar's Futura Temperature Sensor (FTS-3) is a precision electronic sensor designed for use with Novar's Unit Ventilator Controllers (UVCs), Electronic Thermostat Controllers (ETCs), and Heat Pump Controller (HPC). The Futura's advanced design includes the following features:

- A timed override button can be used to override the scheduled-off mode for a software-specified period of time.
- A light-emitting diode (LED) status indicator located directly below the timed override button flashes according to the schedule mode.
  - Scheduled off mode: The LED is off and flashes on briefly when communicating.
  - Scheduled on mode: The LED is on and flashes off briefly when communicating.
- An optional temperature setpoint adjustment can be used to reset the zone temperature control setpoint  $\pm 3^{\circ}\text{F}$ .

This document provides instructions for wiring and mounting the FTS-3.

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## Specifications

### Physical Dimensions

Width: 3 1/8 inches  
 Height: 2 1/8 inches  
 Depth: 1 1/8 inches (at deepest point)

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### Output and Range

Application-dependent

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### Accuracy of Reading

1 F ( 0.556 C)  
 Over 50 to 90 F (10 to 32 C) of stated temperature

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## Precautions

Observe all national and local electrical codes during installation.

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## Wiring the FTS-3

Maximum recommended sensor wire length for connecting the temperature sensor is 100 feet, 22-gauge wire.

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**NOTE!** The wiring connections to the sensor must be made *before* it is mounted. If the sensor is to be mounted to the optional adapter plate, the plate must be mounted first so that the wires can be pulled through the middle of the plate before they are connected to the sensor. Novar's *Futura Adapter Plate Installation Instructions* (Doc. No. 560300000) provides instructions for mounting the plate.

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Figure 1 shows the wiring connections that must be made to connect a Futura sensor with the optional temperature setpoint adjustment (FTS-3A) to a UVC, ETC, or HPC. To ensure that the proper connections are made, each model of the Futura sensor is equipped with only those terminal blocks required for the configuration being used.

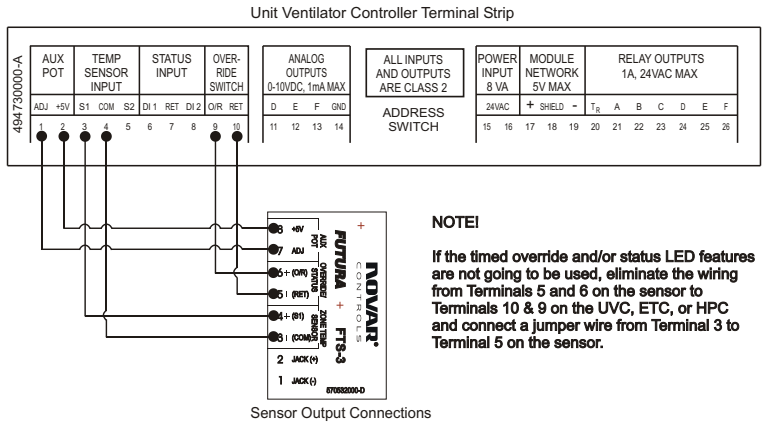


Figure 1. FTS-3 wiring connections

The procedure below should be used to connect the wiring (refer to Figure 1, as necessary).

Step	Procedure
1	Connect a wire from the sensor's Terminal 3 to the controller at Terminal 4 (both labeled COM).
2	Connect a wire from the sensor's Terminal 4 to the controller at Terminal 3 (both labeled "S1"). <ul style="list-style-type: none"> <li>■ This is the connection for the temperature signal of the sensor that will be received by the UVC.</li> </ul>

### Connecting the Timed Override Switch and Status LED

The following procedure should be used to connect the override switch and status LED.

**NOTE!** If the timed override and/or status LED features are not going to be used, do *not* make the wiring connections outlined in the procedure. Connect a jumper wire between Terminals 3 and 5 on the sensor.

Step	Procedure
1	Connect a wire from the sensor's Terminal 5 to the controller at Terminal 10 (both labeled RET).
2	Connect a wire from the sensor's Terminal 6 to the controller at Terminal 9 (both labeled O/R).

### Connecting the Temperature Setpoint Adjustment

Step	Procedure
1	Connect a wire from the sensor's Terminal 7 to the controller at Terminal 1 (both labeled ADJ).
2	Connect a wire from the sensor's Terminal 8 to the controller at Terminal 2 (both labeled +5V).

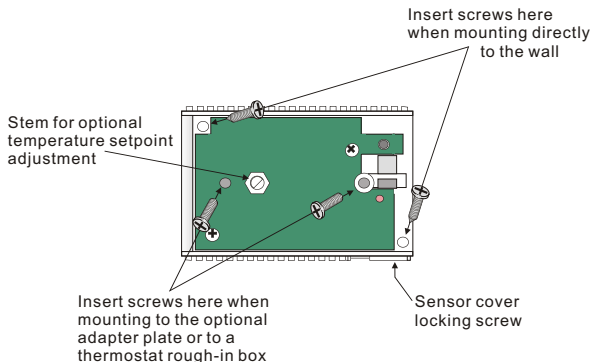
### Mounting the FTS-3

Before the sensor is mounted, the wiring should be checked to make sure the proper connections have been made and that they are secure. The FTS-3 should be mounted *horizontally* on an interior wall in an area with ample air circulation and free from drafts and sudden temperature changes. It comes fully assembled and can be mounted to:

- A wall.
- The optional Futura Adapter Plate over a 2- 4-inch utility box.
- A 1½" 2½-inch thermostat box.

The mounting procedures vary depending on the mounting location. Figure 2 shows the location of the:

- Mounting holes.
- Stem for the optional temperature setpoint adjustment.
- Cover locking screw.



**Figure 2.** Base of the Futura sensor

## Mounting the FTS-3 to a Wall

**NOTE!** Use the corner holes (see Figure 3) when mounting the sensor directly to the wall.

Step	Procedure
1	Use a Phillips screwdriver to remove the cover locking screw on the bottom, right side of the sensor and carefully lift the right side of the sensor case to remove the sensor cover.
2	Position the base of the sensor against the wall and mark the wall to show the location of the two corner holes.
3	Drill holes in the locations marked and, if necessary, insert hollow-wall anchors.
4	Position the sensor's base over the holes and insert and tighten two #6 screws to secure the sensor.
5	Replace the cover and the cover locking screw.

## Mounting the FTS-3 to the Adapter Plate

**NOTE!** Use the holes located near the center of the sensor's base (see Figure 3) when mounting the sensor to the adapter plate.

Before the sensor is mounted to the adapter plate, the plate must be mounted over a utility box (see Novar's *Futura Adapter Plate Installation Instructions*, Doc. No. 560300000). The two pan-head machine screws that are included with the adapter plate can be used to attach the sensor to the plate. The following procedure should be used to mount the sensor.

Step	Procedure
1	Use a Phillips screwdriver to remove the cover locking screw on the bottom, right side of the sensor and carefully lift the right side of the sensor case to remove the sensor cover.
2	<i>If the sensor has a temperature setpoint adjustment option:</i> Grasp the temperature setpoint adjustment knob carefully and pull it gently from the stem. (One of the mounting holes is located below the knob.)
3	Position the sensor over the adapter plate, aligning the mounting holes on the sensor with the holes with the threaded inserts on the adapter plate.
4	Insert the pan-head machine screws that were included with the adapter plate and tighten to secure the sensor.
5	Replace the temperature setpoint adjustment knob carefully, if applicable.
6	Replace the cover and cover locking screw.

## Mounting the FTS-3 to a Thermostat Box

**NOTE!** Use the holes located near the center of the sensor's base (see Figure 3) when mounting the sensor to the thermostat box.

Step	Procedure
1	Use a Phillips screw driver to remove the cover locking screw on the bottom, right side of the sensor and carefully lift the right side of the sensor case to remove the sensor cover.
2	<i>If the sensor has a temperature setpoint adjustment option:</i> Grasp the temperature setpoint adjustment knob carefully and pull it gently from the stem. (One of the mounting holes is located below the knob.)
3	Position the sensor base over the thermostat box, aligning the sensor's holes with the appropriate holes on the box.
4	Insert #6 pan-head or flat-head machine screws into the mounting holes and tighten to secure the sensor.
5	Replace the setpoint adjustment knob carefully, if applicable.
6	Replace the cover and cover locking screw.

## Model and Part Numbers

The part numbers in Table 1 should be used to order the necessary Novar parts.

Table 1. Novar Part Numbers		
PRODUCT	MODEL NO.	PART NO.
Futura Temperature Sensor (20°F–127°F, low profile)	FTS-3	732403000
FTS-3 with temperature adjustment potentiometer	FTS-3A	732401000
Futura Adapter Plate with threaded inserts	FTS-BPL	732900000

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