

# Futura Temperature Sensor (FTS-2) Installation Instructions

## Description

Novar's Futura Temperature Sensor (FTS-2) is a precision electronic sensor designed for use with the Novar's Variable Air Volume Controller (VAV-4020) and ETM-3010 control modules. The FTS-2's advanced design provides maximum sensor operation and offers the following features:

- A timed override button can be used to override the scheduled off mode for a software-specified period of time.
- An LED status indicator light located directly below the timed override button flashes according to the scheduled mode.
  - When in scheduled off mode, the LED is off and flashes on briefly when communicating.
  - When in 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.

These instructions describe how to install and connect the wiring for the FTS-2.

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## Specifications

### Physical Dimensions

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

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### Output

0 to 3.5 Volts DC

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### Accuracy of Reading

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

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### Controlling Range

Controlling Range: 20 to 127 F (-7 to 53 C)

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## Precautions

Observe all national and local electrical codes during installation.

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## Wiring the FTS-2

If the sensor is to be mounted using the optional adapter plate, the plate must be mounted *before* any wiring connections are made; the wires must be pulled through the middle of the plate before they are connected to the sensor. Refer to Novar's *Futura Adapter Plate Installation Instructions* (Doc. No. 560300000) for information about mounting the adapter plate.

Figure 1 shows the wiring diagram for connecting an FTS-2 sensor with the optional temperature setpoint adjustment to a VAV-4020 or ETM-3010. To ensure the proper connections, each model of the sensor is equipped with only the terminal blocks required for that configuration.

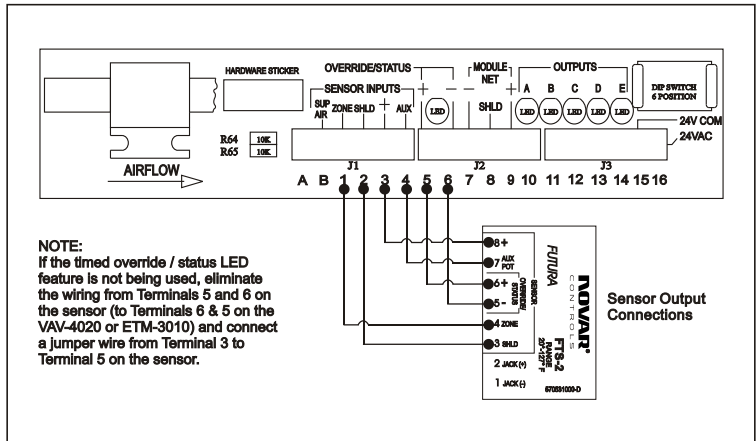


Figure 1. Wiring connections for the Futura Temperature Sensor (FTS-2)

### Connecting the Temperature Signal

Three wiring connections are required for the temperature signal of the sensor that will be received by the VAV-4020 or ETM-3010.

SENSOR TERMINAL	SHOULD BE CONNECTED TO THE VAV-4020 OR ETM-3010
Terminal 3	Terminal 2 (Shld)
Terminal 4	Terminal 1 (Zone)
Terminal 8	Terminal 3 (Positive [+])

### Connecting the Timed Override Switch and Status LED

**NOTE!** If the timed override and status LED features are not being used, connect a jumper wire from Terminal 3 to Terminal 5 on the sensor instead of making the following connections.

SENSOR TERMINAL	SHOULD BE CONNECTED TO THE VAV-4020 OR ETM-3010
Terminal 5	Terminal 6 (Negative [-])
Terminal 6	Terminal 5 (Positive [+])

**NOTE!** The rounded bottom portion of the timed override button must be pushed to activate the timed override. Pushing the top part of the button will have no effect.

### Connecting the Temperature Setpoint Adjustment

For the temperature setpoint adjustment to be connected, a wire from sensor Terminal 7 (Aux Pot) on the sensor must be connected to the VAV-4020 or ETM-3010 at Terminal 4 (Aux).

**NOTE!** Before mounting the sensor, check the wiring to make sure that it is correct and that the connections are secure.

### Mounting the FTS-2

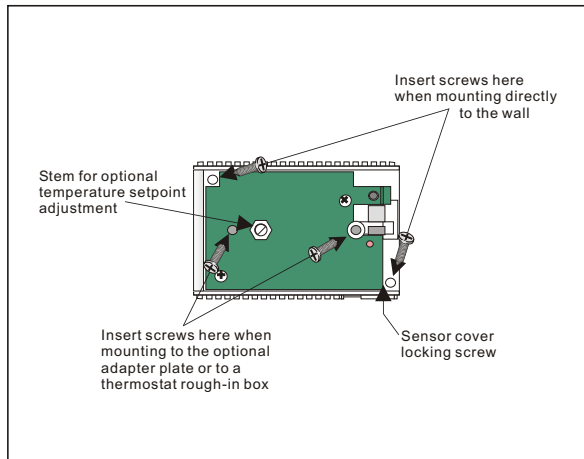
The sensor comes fully assembled and should be mounted *horizontally* on an interior wall in an area with ample air circulation and free from drafts and sudden changes in temperature. It can be mounted to:

- A wall.
- The optional Futura Adapter Plate over a 2- 4-inch utility box.
- A 1½- by 2 ½-inch thermostat rough-in box.

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

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

Refer to figure 3, as necessary, when mounting the sensor.



**Figure 3.** FTS-2 with cover removed

## Mounting the FTS-2 to a Wall

**NOTE!** Use the holes located near the circuit board's center (see Figure 3) when mounting the sensor to the thermostat rough-in box.

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. <ul style="list-style-type: none"> <li>■ One of the mounting holes is located below the knob.</li> </ul>
3	Match the mounting holes on the sensor with the appropriate holes on the rough-in box.
4	Insert #6 pan-head or flat-head machine screws into the mounting holes and tighten them to secure the sensor.
5	Replace the setpoint adjustment knob carefully.
6	Replace the cover and cover locking screw.

## Model and Part Numbers

The part numbers in Table 1 to order the appropriate Novar parts.

PRODUCT	MODEL NO.	PART NO.
Futura Adapter Plate with threaded inserts	FTS-BPL	732900000
Futura Temperature Sensor (20° to 127°F) Low profile	FTS-2	732303000
FTS-2 with temperature adjustment potentiometer	FTS-2A	732301000

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Novar; 6060 Rockside Woods Blvd., Cleveland, OH 44131  
Tel.: 800.348.1235 www.novar.com