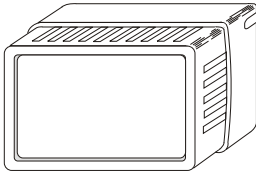


# Wall-Mount Temperature Sensor Installation Instructions

## Description

Novar’s Wall-Mount Temperature Sensor (WTS-10, Figure 1) is a precision electronic sensor designed for use with a variety of Logic One® products that accept a 4-mA to 20-mA signal.



**Figure 1.** WTS-10

The sensor uses a two-wire shielded signal cable to receive 24-volt DC power from the module and to return a 4-mA to 20-mA analog signal proportional to a space temperature, loop-powered device.

The high degree of accuracy and stability of the WTS-10 is achieved by eliminating the circuit’s self-heating effect (by placing the self-heating components off-board in a component shield).

To ensure proper sensor operation, the pigtail must not be damaged during installation.

This document provides instructions for mounting and wiring the sensor.

## Specifications

### Physical Dimensions

Height:	2.13 inches
Width:	3.5 inches
Depth:	1.63 inches

### Operating Environment

Operating Range:	20°F to 120°F (–7°C to 49°C)
Compliance Voltage:	16V to 35V
Output:	4 mA to 20 mA
Accuracy Reading:	1 F ( 0.556 C); over 50 F to 90 F (10 C to 32 C) of stated temperature range

## Mounting the Sensor

The sensor should be mounted on an interior wall, in an area with ample air circulation and free from drafts and sudden changes in temperatures. It can be mounted horizontally or vertically. A vertical mounting label is shipped with the sensor.

The following procedure should be used to mount the sensor.



Step	Procedure
1	Loosen the screw on each side of the sensor's cover and lift it off the baseplate.
2	Position the baseplate against the mounting surface and mark the surface to show the location of the two corner mounting holes.
3	Drill holes at the marked locations and, if necessary, insert hollow-wall anchors.  <b>NOTE!</b> When mounting the sensor in a junction box, drill the appropriate holes in the box cover and use machine or sheet metal screws to attach the baseplate.
4	Position the baseplate over the holes and insert and tighten the screws to secure the baseplate.

### Wiring the Sensor

Maximum recommended sensor wire length for connecting the temperature sensor is 1,000 feet, 22-gauge wire.

**CAUTION!** The WTS-10 is permanently calibrated at the factory. The sensor cannot be adjusted in the field. If a seal is broken, the sensor may have to be returned to Novar for recalibration.

The following procedure should be used to wire the sensor. Refer to Figures 2 and 3, as necessary, during wiring.

Step	Procedure
1	Pull the sensor cable and connect the shielded twisted-pair wires (Belden 8761, Novar WIR-1010, or equivalent).  <b>NOTE!</b> Trim the shield foil back cleanly to avoid short circuits. Failure to do so may damage the sensor electronics. Observe polarity when wiring the unit to the IOM/2.
2	Connect the sensor's wiring (Figure 2) as follows: <ul style="list-style-type: none"><li>■ Connect the cable's clear wire to the sensor's positive (+) terminal.</li><li>■ Connect the cable's black wire to the negative (-) terminal.</li><li>■ Connect the shield/drain wire to the center terminal.</li></ul>
3	Feed the component shield and excess cable through the hole in the wall or junction box cover (Figure 3).
4	Mount the circuit board.
5	Inspect the wiring to verify the polarity and make sure that no part of the shield foil is exposed or shorted to the circuit
6	Place the sensor's cover over the sensor and tighten the two screws on each side to secure it.
7	Connect the clear wire to the input's positive (+) terminal and the black wire to its negative (-) terminal.
8	Connect the shield wire to a ground or shield terminal on the module's terminal strip.

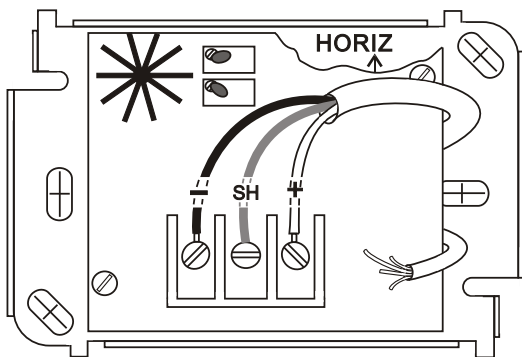


Figure 2. Sensor Wiring Connections

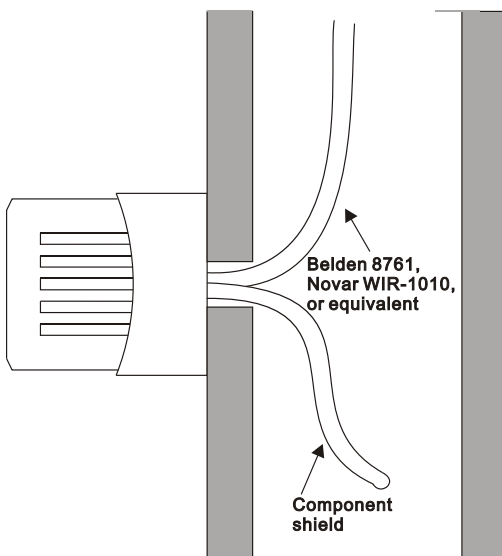


Figure 3. Wall cut-away view

**Model and Part Numbers**

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

<b>Table 1. Novar Part Numbers</b>		
<b>PRODUCT</b>	<b>MODEL NO.</b>	<b>PART NO.</b>
Wall-Mount Temperature Sensor	WTS-10	712003000
Two-conductor shielded cable (Belden #8761 equivalent)	WIR-1010	709001000

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