

# Refrigeration Temperature Sensor Installation Instructions

## Description

Novar Controls' Refrigeration Temperature Sensor is a precision electronic sensing device. It is designed for use with Novar Controls' Spectrum<sup>®</sup> Rack Input Module, Condenser Control Module, Case Input Module, and 8-IMR Module. The sensor uses a two-wire connection to transmit an mVDC analog signal.

The sensor comes in two models:

- Low-Temperature Sensor
- High-Temperature Sensor (Teflon<sup>®</sup> coated)

## Specifications

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Ranges:	Low-Temperature Sensor:	-40° to 150°F
	High-Temperature Sensor:	30° to 375°F
Output:	mVDC, application-dependent	
Accuracy:	±1.0°F	

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## Mounting the Sensor

The sensor should be mounted in a well for surface applications or in the direct airflow of an area.

Use the following procedure and refer to Figure 1, as necessary, to prepare the sensor well.

Step	Procedure
1	Cut a 2-inch length of 3/8-inch OD copper tubing and crimp 1/4-inch of one end.
2	Solder the crimped end to seal it.
3	Solder the well to the mounting surface.
4	Fill approximately half of the sensor well with Thermal Heat Transfer compound.
5	Insert the sensor into the well and seal the entry end with RTV Silicone
6	Make sure the sensor well is secure and makes proper contact with the mounting surface.

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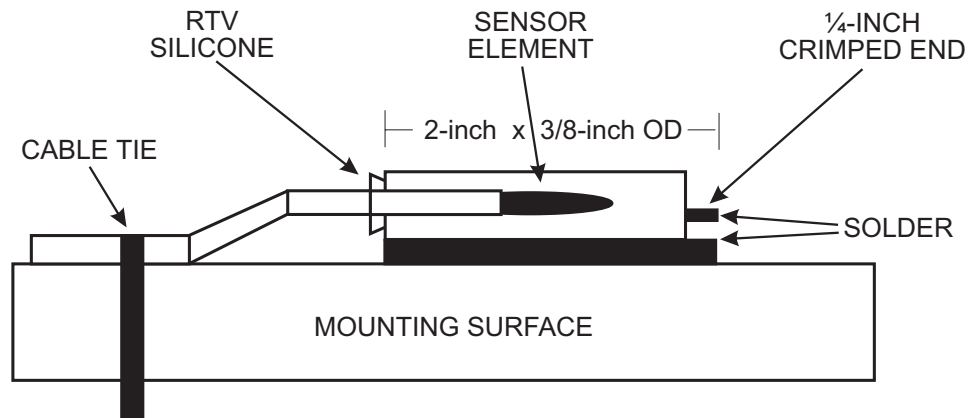


Figure 1. Sensor Well

## Wiring the Sensor

### Low-Temperature Sensor

Table 1 indicates the terminals to which the Refrigeration Low-Temperature Sensor leads should be connected on the Novar Controls modules.

<b>Table 1. Refrigeration Low-Temperature Sensor Connections</b>		
<b>NOVAR CONTROLS MODULE</b>	<b>CONNECT THE RED LEAD TO:</b>	<b>CONNECT THE BLACK LEAD TO:</b>
Rack Input Module	Positive (+) Low Temp Terminal 1, 2, 3, or 4 (Terminal 57, 59, 60, or 62)	Terminal 55, 58, or 61 (Common)
Condenser Control Module	Any positive (+) Air Temp terminal	GND terminal
Case Input Module or 8-IMR Module	Any positive (+) Sensor Inputs terminal	Any negative (-) COM terminal

### High-Temperature Sensor

Table 2 indicates the terminals to which the Refrigeration High-Temperature Sensor leads should be connected on the Rack Input Module.

<b>Table 2. Refrigeration High-Temperature Sensor Connections</b>		
<b>NOVAR CONTROLS MODULE</b>	<b>CONNECT THE RED LEAD TO:</b>	<b>CONNECT THE BLACK LEAD TO:</b>
Rack Input Module	Terminal 43, 45, 46, 48, 49, 51, 52, or 54 (any High Temp Inputs terminal)	Terminal 44, 47, 50, or 53 (any High Temp Inputs terminal labeled "C")

## Checking the Installation

Once the Refrigeration Temperature Sensor has been installed and the wiring connections completed, the following items should be checked to ensure proper operation.

- Check the wiring to make sure that polarity has been maintained and connections are secure.
- Use the Refrigeration Controller keypad and display to monitor the sensor input and verify proper operation.

## Model Numbers

Use the model numbers provided in Table 3 to order the necessary parts.

<b>PRODUCT</b>	<b>MODEL NO.</b>	<b>PART NO.</b>
Low-Temperature Sensor (-40° to 150°F)	—	733000000
High-Temperature Sensor (30° to 375°F)	—	733001000
Thermal Heat Transfer Compound	—	770057000



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