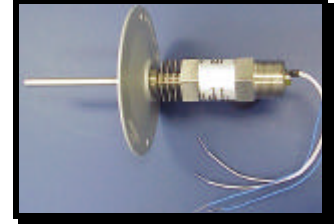
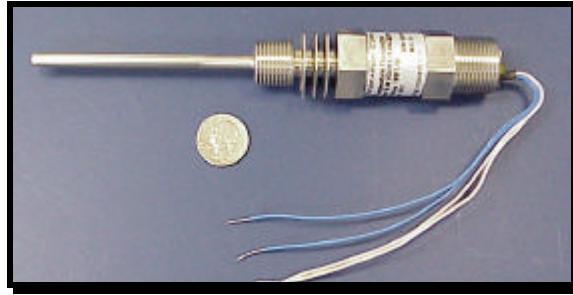


INDUSTRIAL TEMPERATURE NETWORK TRANSMITTER

- High temperature/sealed sensing element construction.
- Digitally calibrated for high accuracy
- Electronics are sealed for environmental durability.
- ½ inch NPT process connection.
- ¾ inch NPT wiring conduit connection.
- Stainless steel probe and body for resistance to process chemicals.
- Enclosure integrates thermal relief to isolate electronics from temperature being measured.
- Flexible mounting options for HVAC duct applications and process connection.
- Open communication standard using LonWorks® Protocol
- All outputs available using Standard Network Variables (SNVT)

DESCRIPTION

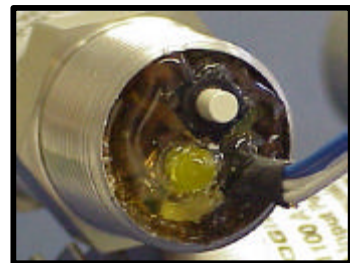
The Model 1100A is a high accuracy / high temperature transmitter that is self contained. The electronics are sealed for durability and long-term resistance to moisture. The temperature sensor element is completely sealed providing an immersion type probe. The electronics and the temperature sensor are available characterized and paired to provide high accuracy at a reasonable cost.

The sensor and configuration information is communicated to other devices via the LonWorks communication protocol. This allows multiple sensors to be used over a simple four-wire bus installation.

The Model 1100A is a new version of the Model 1100. It has flying wiring leads in place of the terminal block. Functionally, the 1100 and 1100A are identical in operation.

WIRING AND INSTALLATION

The Model 1200A is supplied with four wires to connect to the host system. The two white wires are for power and the two blue wires connect to the network communications channel. For convenience the Model 1200A accepts either low voltage AC or DC power. Input power and network wiring is not polarity sensitive and can be reversed. The on-board Service switch and LED allows installation on to the LonWorks network.



MODEL 1100A

MOUNTING OPTIONS

The Model 1100A may be mounted in a large variety of ways. In its most basic form the entire unit can be simply fastened into any ½ inch NPT port with access to the process being measured. The probe can also be used with an optional mounting flange for duct mounting or through a wall or ceiling.

For application requiring temperature measurement between -40 to 85°C at ambient temperatures between -40 to 85°C there is basically no restrictions regarding mounting position or process temperatures.

The actual temperature sensor and probe portion is designed to withstand temperatures of up to 250°C or 480°F. The electronics have a maximum operating temperature of 85°C. A unique thermal isolation barrier is an integral part of the Model 1100A. It thermally isolates the electronics from the temperature of the process being measured. The maximum temperature that can be measured by the Model 1100A depends on the Process Temperature, the Flange Temperature, and the Ambient Temperature. For high temperature application the following discussion assumes that the Model 1100A is **mounted horizontally with respect to ground**. This allows maximum cooling and thermal relief.

The Flange Temperature is defined as the temperature of the flange, fixture, or body that the ½ inch NPT fitting is fastened into. The Ambient Temperature is the temperature where the electronics portion of the probe resides.

The Flange Temperature, T_f , is the main contributor to heat being conducted into the electronics. Reducing the Flange Temperature effectively increases the Process Temperature that can be measured before the maximum electronics temperature, 85°C, is reached.

For simplicity, assume that the Flange Temperature, T_f , is the same as the Process Temperature, T_p . The maximum continuous Process Temperature that can be measured can be approximated by the following equation:

$$T_f = T_p = T_a + ((85 - T_a)/0.35)$$

As an example, for a maximum ambient temperature, T_a , of 40°C, a maximum process temperature of 168°C or 334°F can be measured continuously. Of course we are making the assumption that the vessel is somehow insulated from the ambient conditions.

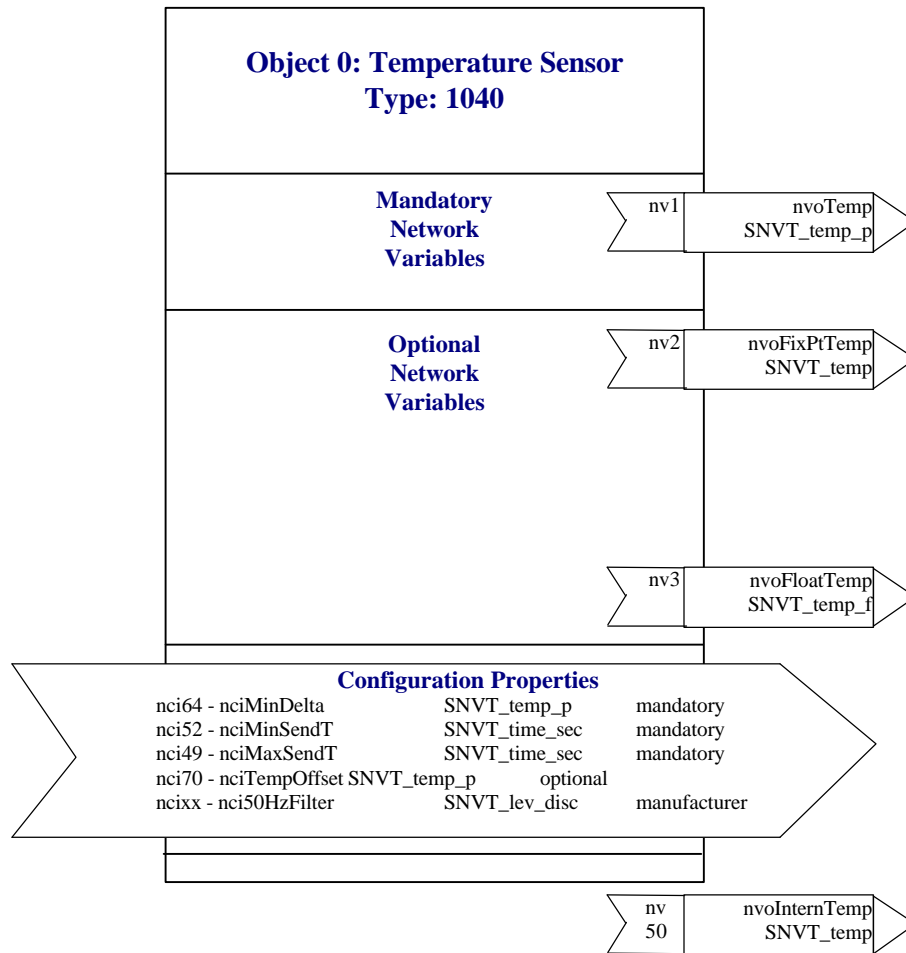
To increase the measurement temperature range, an extension pipe or extension thermo well can be used. This will effectively introduce larger thermal isolation between the process and the electronics. A two to four inch extension will provide a significant temperature reduction between the process and the electronics and thus decrease the Flange Temperature. Under these conditions the installer may want to plan for a slightly longer probe length to compensate for the extension. The Model 1100A includes an internal temperature sensor that is readable via the network. This allows an installer to better handle custom mounting configurations and safely increases the allowed measurement temperature.

APPLICATION AREAS

- Grouped Sensor Inputs for Wiring Reduction
- Indoor Air Quality Control
- Outdoor Temperature Measurement
- Pressurized vessels.
- Any chemicals compatible with 316 and 304 Stainless Steel.
- Distributed HVAC Monitoring and Control
- High Tech Manufacturing Environments
- Integration with other LonWorks HVAC Products

NETWORK OBJECTS

The Model 1100A contains a single LONMARK sensor object with input and output data shown below. Please note, the output data is available in multiple formats for convenience.



MODEL 1100A

GENERAL SPECIFICATION

Temperature

Sensing Element	1000 Ohm platinum RTD
Class B Accuracy	+/- 0.5C + 0.005*T C
Class A Accuracy	+/- 0.25C + 0.002*T C
Calibrated Accuracy	+/- 0.05C @ -40 to 100 C +/- 0.06C @ -40 to 150 C +/- 0.07C @ -40 to 260 C
Temperature Range	-50 to 250C. Sensor only. See Mounting Options section above.
Resolution	0.01 C
Sensor Stability	< 0.08 C per 5 years

Operating Environment

Electronics	-40 to 85C, 0-95% RH non-condensing
Probe	-50 to 250C. See Mounting Options section above.
Operating Pressure	Ambient for electronics. +/- 150 PSI estimated minimum for sensing probe

Electronics

CPU	3120 Neuron
Network Transceiver	FTT-10
Environmental Protection	Electronics completely sealed
Input Power	10 to 30 VDC or 12 to 26 VAC
Input Power Protection	Input power is fused and transient voltage protected. (Fuses do not need to be replaced)
Current Consumption	30-40 mA Typical with service LED on 20-30 mA Typical without service LED on
Network Transceiver Type	Echelon FTT-10A transceiver at 78 kbps. DC blocking capacitors for LPT10 network.
Input Power and Network Wiring	White wires for power, blue wires for network connection. Input power and network wiring is polarity insensitive.

Dimension and Materials

Wiring Connection	¾ inch Male NPT
Process Connection	½ inch Male NPT
Probe Material	316 Stainless Steel, ¼ inch diameter
Probe Body	304 Stainless Steel 1.125 inch hex, Installed Length = 3.75 Inches

ORDERING INFORMATION

1100A	Model 1100A Temperature Network Transmitter
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Code	Network Transceiver Option
-0	TP/FTT-10A

Code	Mounting Options
-0	Basic Unit
-1	1/2 inch NPT Flange
-2	3/4 inch Wiring Junction Box
-3	1/2 inch NPT Flange and 3/4 inch Wiring Junction Box

Code	Probe Length
-04	4 inch Probe
-08	8 inch Probe
-12	12 inch Probe
-XX	Custom Length (4 inch minimum) Special Order Factory Quoted

Code	Temperature Calibration Options
-0	Class B RTD
-1	Class A RTD
-2	RTD calibrated to electronics
-3	RTD calibrated to electronics with NIST certificate

1100A	-0	-0	-04	-0	Model 1100A with FTT-10A transceiver, Class B RTD, no mounting flange or junction box, and 4 inch probe.
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Optional Products



When the Model 1100 is used outdoors in exposed locations **NeuroLogic Research Corp.** recommends using the Model 40 Rain and Sun Guard.

The Model 40 is a PVC rain and sun guard designed for use with the Model 1100 Industrial Temperature Network Transmitter and the Model 1200 Industrial Temperature / Relative Humidity / Dew Point Network Transmitter. The guard is designed to keep rain off the end of the probe and prevent wetting of the humidity sensor within the model 1200. The guard will also keep direct sunlight from shining on the sensors of the probes. The rain guard is available in five-inch lengths to support a four-inch probe.

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MODEL 1100A