

DIFFERENTIAL LOW PRESSURE NETWORK TRANSMITTER



- Low pressure ranges using a highly stable ceramic capacitive sensing technology.
- NEMA 4 Enclosure
- 1/4" compression fittings for pressure connection
- 1/2" NPT wiring conduit entry
- Multiple sensors multiplexed on same wires
- Open communication standard using LONWORKS[®] protocol
- All data available using Standard Network Variable Types (SNVT)

DESCRIPTION

The Model 1300 Differential Low Pressure Network Transmitter is ideal for use in HVAC applications. Both a positive and a negative pressure differential between two controlled areas can be measured. The sensor and electronics are housed in a NEMA 4 enclosure ready for mounting.

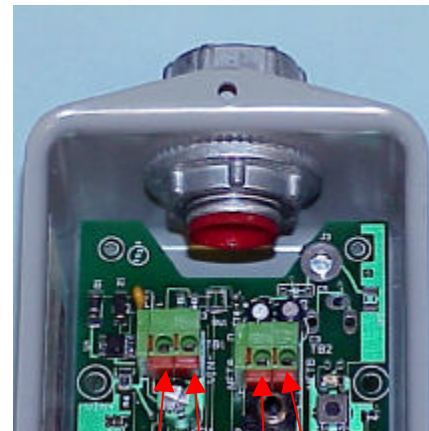
Sensor and configuration information are exchanged with other devices via the Echelon[®] LONWORKS communication protocol.

WIRING AND INSTALLATION

The Model 1300 is wired using four terminals. Two terminals are used to connect power. The other two connect the network communication channel. For convenience the Model 1300 accepts either low voltage AC or DC power. Power and network wiring is polarity insensitive and can be reversed. Additionally, there is an on-board 3.5 mm jack, which allows a network installation or monitoring tool to be connected without disturbing network wiring or communications.

Communication and network wiring is via a 1/2" NPT conduit entry. Differential pressure inputs are via two 1/4" O.D. compression fittings which support copper as well as flexible tubing.

Two external tabs are supplied on the Model 1300 enclosure for wall mounting. Proper orientation of the enclosure must be maintained to minimize effects of gravity on sensor accuracy. The pressure ports *must* be vertically pointing down.



VinA VinB NetB NetA

APPLICATION AREAS

- Grouped sensor inputs for wiring reduction
- Distributed clean room differential pressure monitoring and control
- High-tech manufacturing environments
- Integration with other LONWORKS HVAC Products

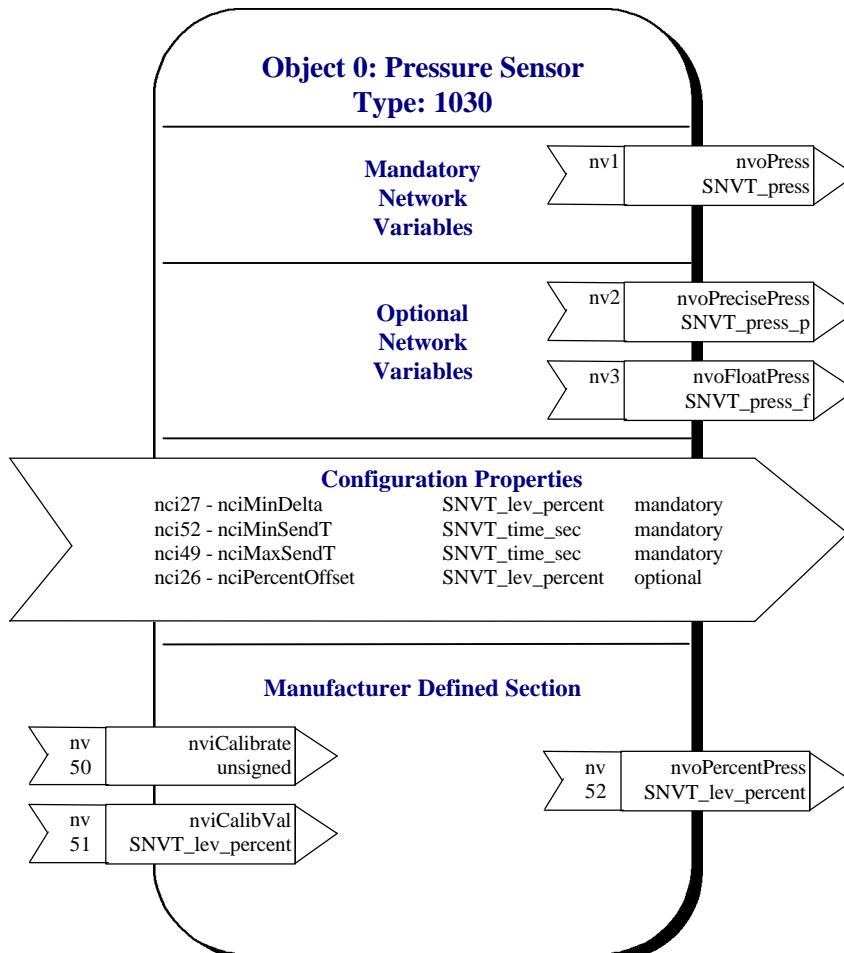
MODEL 1300

NETWORK OBJECTS

The Model 1300 makes available the input and output data shown below. Please note, the output data is available in multiple formats for convenience. The nvoPress value is included for the object implementation. However, it is not really useable for low pressures. The nvoPrecisePress variable should be used at a minimum. It has a range of +/-32767 Pascals. A full scale of 1.0 inches of water translates to 248.7 Pascals. Therefore the resolution of nvoPrecisePres for the +/- 1.0" H₂O range is about 0.4% of full scale. For high-resolution readings, 0.005%, use the nvoPercentPres. Electronics are capable of 0.0325% resolution of pressure span.

The nviCalibrate and nviCalibVal network variables allow the Model 1300 to be calibrated by the customer. Specific calibration functions are accomplished by writing the following values into nviCalibrate. The calibrate by value functions assume that nviCalibVal contains a valid value before the command is written into nviCalibrate. All calibration and offsets are done in percent of full scale for maximum accuracy and resolution.

- 00 - Zero. The current input signal corresponds to 0%.
- 01 - Span. The current input signal corresponds to 100%.
- 02 - Calibrate Value #1. The current input signal corresponds to lower value which is contained in nviCalibVal.
- 03 - Calibrate Value #2. The current input signal corresponds to upper value which is contained in nviCalibVal.
- 15 - Reset calibration to factory



GENERAL SPECIFICATION

Pressure Sensor

Sensing Element	Differential ceramic capacitive pressure sensor
Pressure Ranges	+/- 1.0, +/- 2.0, +/- 5.0, and +/- 10.0 inches of water
Proof Pressure	5X rated pressure (high side) 3X rated pressure (low side) max.
Burst Pressure	10X rated pressure (high side) 5X rated pressure (low side) max.
Media	Only air or dry inert gas
Pressure Connection	Two 1/4" outside diameter compression fittings
Zero Error	Digitally compensated after mounting
Linearity Error	+/- 0.5% Full Scale
Combined Hysteresis and Repeatability Error	+/- 0.05%
Zero Temperature Error 10 to 40 C	+/- 0.2% of full scale/ deg C
Span Temperature Error 10 to 40 C	+/- 0.2% of full scale/ deg C
Long Term Stability	+/- 1% of full scale per year maximum
Compensated Temperature Range	10 to 40 C

Operating Environment

Operating Temperature	-10 to 60 C 0-95% RH non-condensing
Storage Temperature	-40C to 95C

Input Power

DC Power	12 to 36 V
AC Power	9 to 26 V
Current	30-40 mA Typical with service LED on 20-30 mA Typical without service LED on
Wiring	Two wire power connection (Polarity Insensitive)

Network Communication

Transceiver Type	Echelon FTT-10A transceiver at 78 kbps. DC blocking capacitors for LPT10 network.
Wiring	Two wire connection (Polarity Insensitive)

Dimension and Materials

Enclosure	3.34"W x 2.88" H x 5.6"D, NEMA 4, 16 gauge steel
Finish	Gray polyester powder coating
Mounting	Two wall mounting tabs.
Electrical Connection	1/2" NPT

Electronics

CPU	3120 Neuron
Network Transceiver	TP/FT10
A/D resolution	0.0325 % of pressure span
Protection	Input power is fused and transient voltage protected. (Fuses do not need to be replaced)

MODEL 1300

ORDERING INFORMATION

1300	Model 1300 Pressure Sensor Node
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Code	Network Transceiver Option
-0	TP/FTT-10A

Code	Pressure Range
-02	+/- 1.0 Inches of Water
-03	+/- 2.0 Inches of Water
-04	+/- 5.0 Inches of Water
-05	+/- 10.0 Inches of Water

1300	-0	-02	Model 1300 with FTT-10A transceiver and +/- 1.0" water pressure range
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