

INSTALLATION

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION.

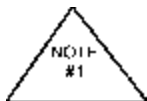
Ground yourself before touching board. The Neuron microprocessor on the bottom of this product and the FTT-10A transceiver on the top are very sensitive to electrostatic discharge. Keep product in the snap-track at all times, especially when powered.

MOUNTING:

Circuit board may be mounted in any position. If circuit board slides out of snap track, a nonconductive “stop” may be required. Use only fingers to remove board from snap track. Slide out of snap track or push against side of snap track and lift that side of the circuit board to remove. Do not flex board. Use no tools.

POWER CONNECTIONS - THIS PRODUCT ACCEPTS 24 VOLTS AC OR DC POWER.

Be sure to follow all local and electrical codes. Refer to wiring diagram for connection information.



- 1) The power supply output voltage should be measured at the interface terminals and isolated from earth ground, chassis ground, and neutral leg of the primary winding. Any field device connected to this transformer must use the same common. If you are not sure of other field device configuration, use separate transformers. Failure to follow these procedures can result in improper operation.
- 2) If the 24 volt AC power is shared with devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, AC Transorb, or other spike snubbing device across each of the shared coils. Without these snubbers, coils produce very large voltage spikes when de-energizing that can cause malfunction or destruction of electronic circuits.
- 3) If the 24 volt DC power is shared with devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, DC Transorb, or a diode placed across the coil or inductor. The cathode or banded side of the diode (or DC Transorb) connects to the positive side of the power supply.

- 4) You should measure the actual voltage output of the secondary. If the output is not fully loaded you may read a higher voltage than the circuit board can handle.

INSTALLATION AND CHECKOUT

Use only with LonWorks FTT-10A free topology networks.

Jumper Shunt Selections: Select analog input range by correctly placing jumper shunt on jumper shunt block J1 as shown in diagram on page 1. Select output signal type (voltage or current) with jumper shunt on J2 as shown on diagram on page 1.

Connect analog input signal or thermistor to terminals "IN" and "COM". Connect output signal wires to "OUT" and "COM".

Connect DC analog feedback input signal to terminals "IN" and "COM". Connection of a potentiometer feedback from an actuator motor is as follows: Connect the wiper to the "IN" terminal, connections from either end of the potentiometer to the "COM" (common) and "EXC" (excitation 5 VDC @ 20 mA maximum). See detail on page 1.

Connect 24 VAC or 24 VDC power to "24V" and "C". Connect LonWorks network to NET and NET (not polarity sensitive). Supply power to terminals "24V" and "C" and the red LED power indicator will light and the green Service LED will blink once rapidly and turn off. This indicates the LAO is functioning properly. Any other LED action indicates a malfunction.

The green LED will illuminate when the service switch is pressed to identify the node to the network, and anytime a WINK command is received.

Board programmed software includes Standard Network Variable Types (SNVT's) containing values for the analog input and output.

NETWORK VARIABLE OPERATING INSTRUCTIONS

Name:	Request Node Status
Type:	SNVT_obj_request
Declaration:	network input sd_string("@0 1.request node status") SNVT_obj_request nviRequest;
Restored On Power Up?:	No
Default Value When Programmed:	None
Default Value When Reset:	None
Legal Range:	RQ_NORMAL, RQ_DISABLED, RQ_UPDATE_STATUS, RQ_REPORT_MASK
Purpose/Usage:	Request the current status of the node.
Name:	Status Report
Type:	SNVT_obj_status
Declaration:	network output sd_string("@0 2.report node status") SNVT_obj_status nvoStatus;
Restored On Power Up?:	No
Default Value When Programmed:	All zeros
Default Value When Reset:	None
Legal Range:	0-2 (for the object_id field); 0, 1 (for every other active field)
Purpose/Usage:	Buffer transmitted with the data from a status request.
Name:	Maximum Status Send Time
Type:	SNVT_time_sec
Declaration:	config network input sd_string("@0 3.heartbeat to send node status, 1/10 \\ second units") SNVT_time_sec nciMaxStsSendT=0;
Restored On Power Up?:	Yes
Default Value When Programmed:	0
Default Value When Reset:	None
Legal Range:	0 - 6553.5 (.1 second steps)
Purpose/Usage:	Maximum time allowed between automatic transmissions of the node status. A value of 0 will stop the automatic transmissions.

Name: Actuator Value
Type: SNVT_count
Declaration: network input sd_string("@1|1.basic input to electrical actuator")
 SNVT_count nviActuatorValue;
Restored On Power Up?: No
Default Value When Programmed: None
Default Value When Reset: None
Legal Range: 0 - 255
Purpose/Usage: Set the actuator (output) value. The actual analog value must be calculated based on the range of this variable, and the range and units of the analog output.

Name: Sensor Value
Type: SNVT_count
Declaration: network output sd_string("@2|1.sensor analog electric input") SNVT_count
 nvoSensorValue;
Restored On Power Up?: No
Default Value When Programmed: None
Default Value When Reset: None
Legal Range: 0 - 255
Purpose/Usage: Current value from the sensor (input). This raw data value represents the voltage coming into the LAO.

Name: Minimum Delta
Type: SNVT_count
Declaration: network input config SNVT_count nciMinDelta=SENSITIVITY;
Restored On Power Up?: Yes
Default Value When Programmed: 1
Default Value When Reset: None
Legal Range: 1-255
Purpose/Usage: The sensor's value must change by nciMinDelta or more before it will be transmitted. Use this variable to help stabilize the sensor's value.

 Zero is not a legal value. Although this variable can be set as large as 255, it doesn't make sense to set it that large in most cases. It should generally be a small number, something less than 5.

Name: Sensor Sample Rate
Type: SNVT_count
Declaration: network input sd_string("@0|6.sensor input sample rate (milliseconds)")
 config SNVT_count nciSnsrSmplRate=DEFAULTINPUTSAMPLERATE;
Restored On Power Up?: Yes
Default Value When Programmed: 500 milliseconds
Default Value When Reset: None
Legal Range: 300 - 65535 (milliseconds)
Purpose/Usage: This is the time between samples. A sample will occur this often. Sample more quickly for greater accuracy. Sample more slowly for more stability and less network traffic. It takes more than 200 milliseconds to perform one sample.

Power Consumption:	230 mA maximum
Input Signal Ranges/Impedance:	1) 0-5 VDC/1,500,000 ohms 2) 0-10 VDC/200,000 ohms 3) 0-20 mA/249 ohms 4) 10,000 ohm thermistor (10,000 ohm pull-up resistor is installed on LAO) 5) Resistance : Motor position feedback potentiometer uses voltage from excitation(exc) terminal. All inputs have over and under voltage protection.
Output Signal Ranges / Impedance:	0-10 VDC (maximum current of 20 mA, load can be 500 ohms or greater) 0-20 mA (maximum output impedance of 500 ohms)
Accuracy:	+/-2% of full scale
DC Source Voltage for Resistance Input	5VDC regulated output with maximum supply current of 20 mA.