

INSTALLATION

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION.

Ground yourself before touching board. Some components are static sensitive.

MOUNTING:

Circuit board may be mounted in any position. If circuit board slides out of snap track, a non-conductive "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:

- 1) 24 VDC - with power off, connect 24 volt DC power supply to "power" (+) and (-) terminals on the board.
24 VAC - with power off, connect one transformer secondary leg to "power" (+) and the other to (-) or common. Check the wiring configuration of any other loads that may be connected to this transformer. 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.
- 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) The power supply output voltage should be isolated from earth ground, chassis ground, and neutral leg of the primary winding. Grounding should be to the system common only. Failure to follow these procedures can result in improper operation.
- 5) You should measure the actual voltage output of the power supply. If the output is not fully loaded you may read a higher voltage than the circuit board can handle.

OPERATION

- The 4N1 can:
- 1) Read two to four analog inputs and output the **average**.
 - 2) Read two to four analog inputs and output the **lowest**.
 - 3) Read two to four analog inputs and output the **highest**.
 - 4) Read analog input One and Two and output the **difference**.

CALIBRATION AND SWITCH SETTINGS

FACTORY CALIBRATION AND SETTINGS: None

SWITCH SETTINGS ON SWITCH BLOCK 1:

SELECT MODE OF OPERATION

- Output Highest Signal: Switch 3, 4 OFF
 Output Lowest Signal: Switch 3 OFF, 4 ON
 Output Difference: Switch 3 ON, 4 OFF.
 Program looks only at A1 and A2 inputs)
 Output Average: Switch 3, 4 ON

SELECT NUMBER OF ANALOG INPUTS

- A1, A2 Switch 1 OFF, 2 ON
 A1, A2, A3 Switch 1 ON, 2 OFF
 A1, A2, A3, A4 Switch 1, 2 ON

SELECT VOLTAGE OR CURRENT OUTPUT TYPE

- Voltage Output Switch 6 ON, 7 OFF
 Current Output Switch 6 OFF, 7 ON

SELECT ANALOG OUTPUT RANGES

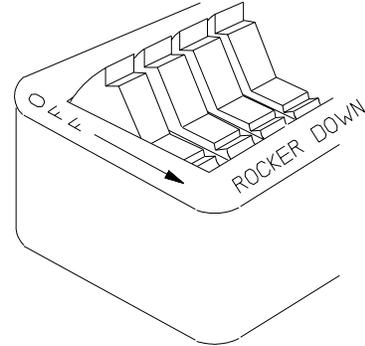
- 0-10 VDC Switch 8 OFF
 0-5 VDC, 0-20mA Switch 8 ON

Note: Switch 5 is always OFF

SWITCH SETTINGS ON SWITCH BLOCKS 2 & 3:

SELECT ANALOG INPUT RANGE - Switches 1 thru 4 on Switch Blocks 2 & 3 correspond to A1 thru A4 inputs)

0 to 5 VDC	Switch on Switch Block 2 OFF Switch on Switch Block 3 OFF
0-10 VDC	Switch on Switch Block 2 OFF Switch on Switch Block 3 ON
0 to 20 mA	Switch on Switch Block 2 ON Switch on Switch Block 3 OFF



Legend: These switches are OFF

WIRING CONNECTIONS

- Connect Input Signal Commons (-) to terminals labeled C.
 Connect Input Signals (+) to respective terminal labeled A1 thru A4.
 Connect controlled device to terminals ANALOG OUT (+) and (-).

CHECKOUT

Apply power. Power LED will light and remain ON. Status LED will blink at a steady rate, indicating microprocessor is functioning properly.

Power Supply Voltage: 24 VAC (+/- 10%)
 24 VDC (+/- 10%)
 Input Signal Impedance: Voltage - 124,000 ohms
 Current - 248 ohms

Power Consumption: AC - 110 mA maximum
 DC - 50 mA maximum
 Output Signal Impedance: Voltage - 1,000 ohms minimum
 Current - 500 ohms maximum