

**READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION**

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

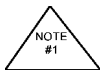
**MOUNTING:**

Circuit board may be mounted in any position. If circuit board slides out of snap track, a 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 or use 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) If required by BAS or controller specification, the 24 VAC neutral can be earth grounded at the transformer. Analog input, digital input, and analog output circuits should not be earth grounded at two points. 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 for isolation.
- 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 diode placed across the coil or inductor. The cathode, or banded side of the DC Transorb or diode, connects to the positive side of the power supply.



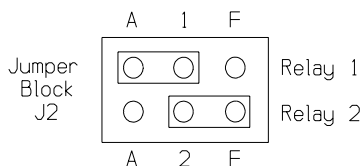
- 4) You should measure the actual voltage output of the secondary. If the output is not fully loaded you may read a higher voltage than the circuit board can handle.

## CALIBRATION AND CHECKOUT

- Each relay can be individually set for a Fixed or Adjustable deadband. Place jumper shunts for relay 1 or 2 on A for adjustable or F for fixed (or a combination of each).

In the example shown below Relay 1 is set for an adjustable deadband. The turn on level is set with the High (H1) potentiometer. The turn off level is set with the Low (L1) potentiometer (see diagram on page 1 for location of H1 and L1).

Relay 2 is set for a fixed deadband, which allows a deadband of 3% of the input signal between the turn on and turn off signal levels. Use the Low (L1) potentiometer to set the turn off level of the fixed deadband (the High potentiometer is out of the circuit).



- Three input signal ranges can be selected. Set J1 to the desired type.

**Note:** If the first board is to receive a 0-20 mA signal, then any attached boards must be set at the 0-12 VDC signal mode to operate correctly!

If the input signal is voltage, then set attached boards to same voltage as the first board. Up to 6 boards may be cascaded from same power supply. More can be connected if external power connection is jumpered to every sixth board.

- After jumpers are placed in the desired setting, turn on 24 volt power supply.
- Turn all four potentiometers counterclockwise (these are approx. 20 turn pots).
- Provide an input signal level equal to the desired turnoff point.
- Adjust the L (low) potentiometer clockwise until the LED for that relay just turns OFF.
- Turn the H (high) potentiometer for the relay clockwise (these are approx. 20 turn pots).
- Provide an input signal level equal to the desired turn-on point.
- Adjust the H potentiometer counterclockwise until the LED for that relay just turns ON.
- Repeat steps 5 through 9 for each relay.

Power Consumption:	45mA	Input Impedance:	0-12 VDC/1,000,000 ohms
Contact Ratings:	10 amps @ 120 VAC		0-24 VDC/20,000 ohms
			0-20 mA/499 ohms