

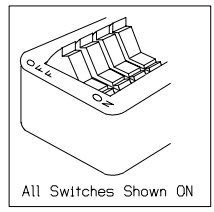
SEE NOTE #1

Power  
24 VDC/VAC @ 50/60 Hz

24 Volt Accessory Output

Floating Point Input (UP)

Floating Point Input (DN)



"INPUT" TIMING RANGES-DIP SWX 1

Version	Chip ID#	Timing	S1	S2	S3	S4		
Version A	0008Y0A.Hex	5, 15, 30, 90s						
Version B	0244Y0A.Hex	45, 60, 120, 240s						
Version C	0256Y0A.Hex	45, 60, 120, 240s						
Version D	0537Y0A.Hex	5, N/A, N/A, 360s						
		5	45	45	5	Seconds	Off	Off
		15	60	60	N/A	Seconds	On	Off
		30	120	120	N/A	Seconds	Off	On
		90	240	240	360	Seconds	On	On

"OUTPUT" TIMING RANGES-DIP SWX 1

Version	Chip ID#	Timing	S1	S2	S3	S4	
Version 1	0433Y0A.Hex	30, 60, 90s					
Version 2	0437Y1A.Hex	120, 150, 180s					
Version 3	0593Y0A.Hex	18, 75, 360s					
		30	120	18	Seconds	Off	On
		60	150	75	Seconds	Off	Off
		90	180	360	Seconds	On	Off

### INSTALLATION

← Resets to maximum on power-up

#### 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 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.

NOTE #1

- 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.

## CHECKOUT

### 1. Output Relay Connections

- a. Electrical connections should be made with a maximum of 14 AWG wire.
- b. The actuator connections should be made from Y1 on the FFP to Y1 of the actuator. Y2 on the FFP connected to Y2 of the actuator.

### 2. Input Connections

- a. Electrical connections should be made with a maximum of 14 AWG wire size.
- b. The power supply HOT (or +) should be connected to the terminal labeled "+".
- c. The power supply COMMON (or -) should be connected to the terminal labeled "-". The power supply COMMON may be connected to earth ground, but only at one point.
- d. Connect the "-" terminals of UP/A and DN/P to the common of the controller. Connect the "+" terminals of the UP/A and DN/P to the controller output.
- f. If a 24 Volt source is needed for the input signals, connect a wire to the "+" terminal of Vout. This line is not to be used for power, but signal use only.

### 3. Settings and Controls

- a. Manual Control of the relays may be obtained by using J4 and J5 jumpers.
- b. Jumper J6 must remain on the CD setting. Do not change.
- c. DIP switch SW1 selects Input and Output timing ranges.

The **input** signal rate of change is DIP switch selectable using switches 1 and 2 of DIP switch SW1. Select one of the four (4) input timing ranges using "Input Rate of Change" Chart on Page 1.

The **output** of the FFP is two relays. One relay controls UP (increase), the other DOWN (decrease) depending on the actuator configuration. The rate of change the output makes on the actuator is determined by DIP switches 3 and 4 on SW1. Refer to "Output Rate of Change" Chart on Page 1 and set DIP switches accordingly.

To manually set the position of the actuator, use either jumper J4 or J5. Jumper J4 is the control of for Y1 terminal, and will move the actuator clockwise. Jumper J5 is the control of Y2 terminal, and will move the actuator counter clockwise. **CAUTION: Only jumper one output at a time in manual mode. Jumpers on both J4 and J5 at the same time may cause damage to actuator.**

Supply power and the LED power indicator will light, but only measurement will verify proper voltage. Apply minimum and maximum input signals and measure the response. The response between the minimum and maximum values will be linear. When the FFP is not powered on terminals +24V and (-), both relays are open, so actuator stays in the last commanded position unless equipped with spring return.

Power:	24 VDC or 24 VAC, 50/60 Hz, +/- 10%
Supply Current:	120mA Maximum w/o use of auxiliary 24 VDC output 230mA maximum with use of auxiliary 24 VDC output
Input: Floating Point (DIP switch selectable):	Version A - 5, 15, 30 and 90 Seconds Version B - 45, 60, 120, and 240 Seconds Version C - 45, 60, 120, and 240 Seconds (resets to max on power-up) Version C - 5, N/A, N/A, 360 Seconds
Output: Floating Point (DIP switch selectable):	Two relay contact outputs (UP or increase, DOWN or decrease) Version 1 - 30, 60, and 90 seconds Version 2 - 120, 150, and 180 seconds Version 3 - 18, 75, and 360 seconds
Regulated Power Output (for user):	24 VDC, 48mA maximum
Input Impedance (Nominal):	Triac: 750 ohms Normal: 1500 ohms

Trigger Level: Normal Mode: 5 to 26.4 VDC/5 to 26.4 VAC

Triac Mode: 9 to 26.4 VAC