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MULTIPOSITION AIR ACTUATOR POSITION INDICATOR SWITCH

Technical Note 430

The position indicator switch is typically used to supply inputs to a digital system or to power an LED readout requiring a maximum of 0.5 amps at 28 VDC. **Table 1** indicates the switch required for each number of positions and the terminal tabs utilized (refer to the illustration on the next page for tab identification). When an actuator is in Position 1, there is continuity between the ground tab "G" and the tab marked "1". When it is in Position 2, there is continuity between the ground tab and the tab indicated for Position 2 in the table. For example, for a 4 position actuator, the tab corresponding to Position 2 is marked "5"; tabs 2, 3, and 4 are bypassed and not utilized.

CHEMINERT VALVES

Cheminert selectors on air actuators are a special case. Refer to the instructions on the last page.

ADJUSTING THE ROTARY SWITCH

Air actuated multiposition valves (selectors) should arrive from the factory with everything aligned and functioning properly. However,

TABLE 1: Valco valve tab assignments

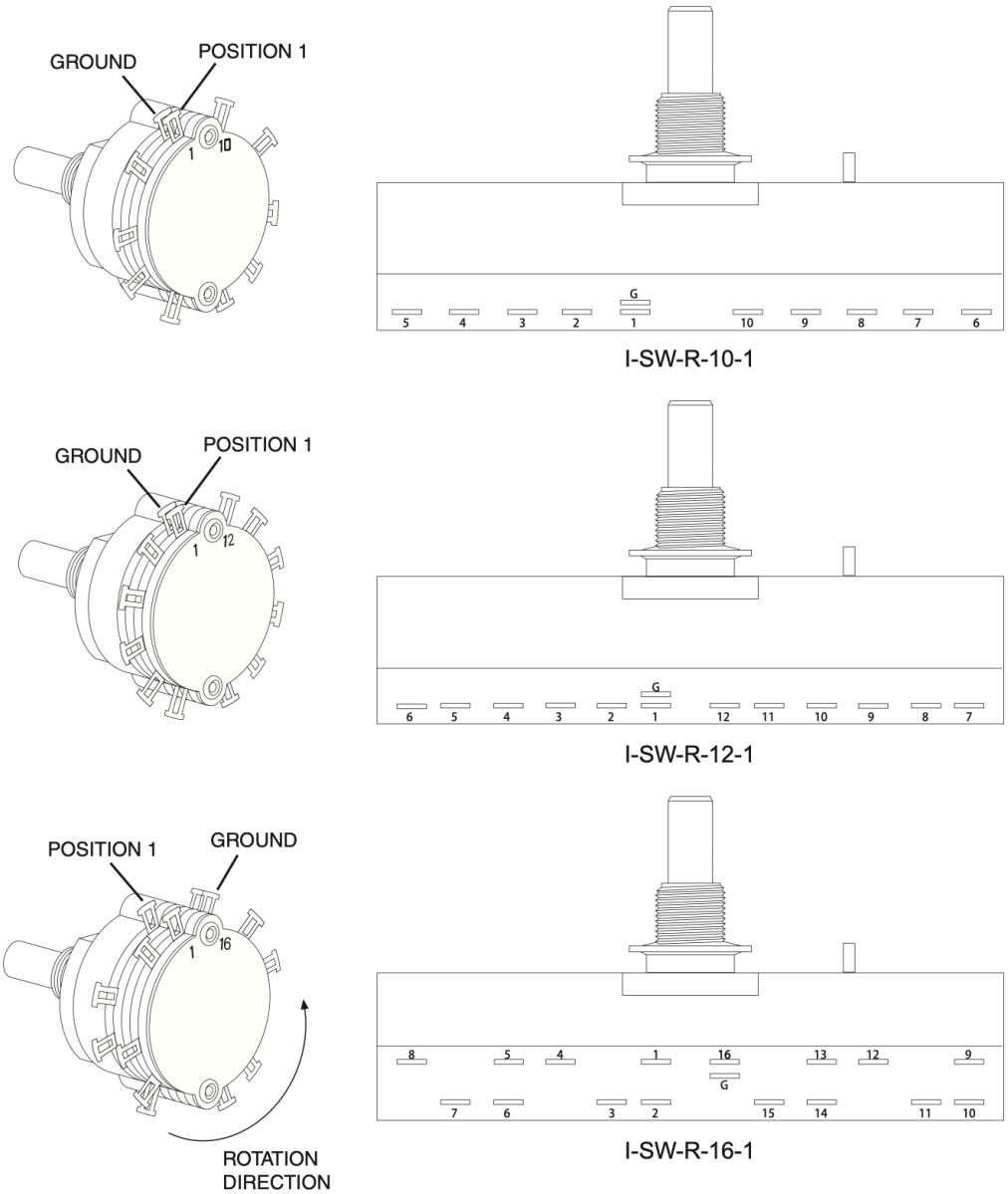
ACTUATOR	SWITCH REQUIRED	POSITION NUMBER	CORRESPONDING TAB ON SWITCH
4 position	I-SW-R-16-1	1	1
		2	5
		3	9
		4	13
6 position	I-SW-R-12-1	1	1
		2	3
		3	5
		4	7
		5	9
		6	11
8 position	I-SW-R-16-1	1	1
		2	3
		3	5
		4	7
		5	9
		6	11
		7	13
		8	15
10 position	I-SW-R-10-1	1-10	1-10
12 position	I-SW-R-12-1	1-12	1-12
16 position	I-SW-R-16-1	1-16	1-16

circumstances may occur which result in the switch not being properly aligned with the actuator, indicated by an incorrect readout, or no readout at all.* If that happens:

1. Make sure the valve is in Position 1 by checking that there is flow from the common port to port 1.
2. Use a thin open-end 1/2" wrench to loosen the locknut that clamps the support plate to the body of the rotary switch.
3. Turn the rotary switch (the stem is held stationary by the actuator) until Position 1 is indicated, confirmed with a multimeter or any conductance tester.
4. Tighten the support plate locknut, being careful not to twist the stem and body of the rotary switch.
5. Test the setup by moving the air actuator to each position, making sure there is flow in each position and that the switch is indicating the correct position.

**This is different than alignment issues between the valve rotor, valve body, and actuator, which cause flow to be cut or restricted in some or all positions. If that is the case, refer to the support section of www.vici.com to find the proper valve alignment Technical Note for your product.*

FIGURE 1: Rotary switch tab locations



CHEMINERT VALVES ON AIR ACTUATORS

Cheminert multiposition valves present a confusing case, since they are numbered counterclockwise and air actuators rotate clockwise. This means that when the actuator moves to Position 2, flow entering the common port will be flowing out of the port with the highest number—not out of the port marked "2"!

For example, with a 4 port valve and actuator, when the actuator is in Position 2, flow exits the port marked "4". To make the readout from the switch correspond to the number on the valve, utilize tab 13. **Table 2** gives the complete tab assignments to make the switch readout correspond to the Cheminert valve port numbers.

TABLE 2: Cheminert valve tab assignments

ACTUATOR	SWITCH REQUIRED	POSITION NUMBER	CORRESPONDING TAB ON SWITCH
4 position	I-SW-R-16-1	1	1
		2	13
		3	9
		4	5
6 position	I-SW-R-12-1	1	1
		2	11
		3	9
		4	7
		5	5
		6	3
8 position	I-SW-R-16-1	1	1
		2	15
		3	13
		4	11
		5	9
		6	7
		7	5
		8	3
10 position	I-SW-R-10-1	1-10	1, 10, 9, 8, etc. to 2
12 position	I-SW-R-12-1	1-12	1, 12, 11, 10, etc. to 2
16 position	I-SW-R-16-1	1-16	1, 16, 15, 14, etc. to 2