

A Full Three-Position Control Package with End-Position Signal Feedback

The Moniteur D3 Three Position Control Package is a unique product incorporating specially configured solenoid valves and control switches designed for three-position operation. The package is used with rotary *double-acting pneumatic actuators* and allows users to transform any valve into a sophisticated three position control device.

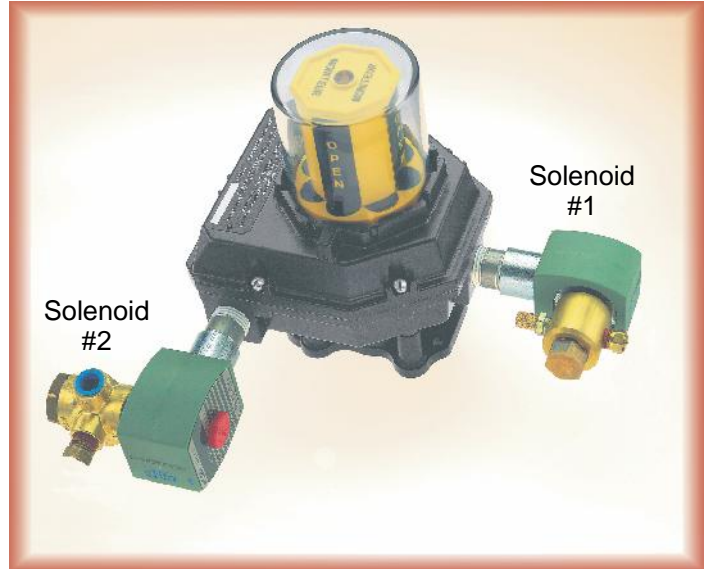
The unit is available in an Explosion-Proof configuration. In addition to the control switches, two switches are included for valve position monitoring.

Applications:

180 Degree / Three Position Valves - Set any mid position from any point in the valve cycle without a positioner.

Dribble Control - By utilizing the mid set point, one is able to reduce the flow rate during a filling operation to more accurately and efficiently fill a vessel.

Note: When fail-closed is a requirement, Moniteur recommends our Dribble Control package developed for spring-return actuators.



Hazardous Area Rating Available:

Class 1, Division 1, Group C & D

Class 2, Division 1, Group E, F, G

Features

- ▶ Fully Adjustable Mid Point
- ▶ Dual 3-way Solenoid Design Improves Valve Position Accuracy by Pressurizing Both Ports in the Mid Position
- ▶ Additional Limit switches Provided as Standard to Monitor End Points (open/closed)
- ▶ Factory Assembled and Tested, Saving Users and Assemblers Time and Money
- ▶ Explosion-proof Version Available Rated Nema 4, 4x, 7, 9

Packages for Double-Acting Actuators, Including Two 3-way NO Solenoid Valves

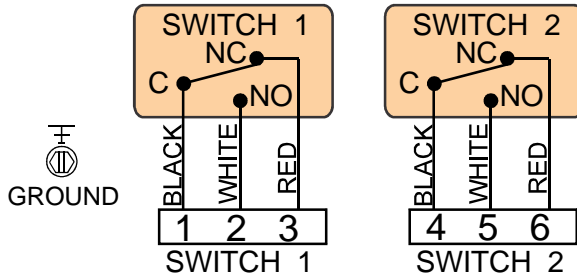
Rating	Package Model No.	3-Way Solenoid (2) (ASCO®)	Cv*	Solenoid Voltage	Solenoid Body Material
Explosion-Proof	D3D-AMYB-51B1	EF8320G194	0.12	120 VAC-60Hz	Brass

Standard Solenoid Valve Porting Configuration

CW Port Sol 1	Cv	Air Supply Port	Air to Actuator Port	Exhaust Port	CCW Port Sol 2	Cv	Air Supply Port	Air to Actuator Port	Exhaust Port
EF8320G194	0.12	3	1	2	EF8320G194	0.12	3	1	2

** For larger actuators, solenoid valves with higher flow rates will be required. Contact Moniteur Devices with your requirements.
ASCO is a trademark of the Automatic Switch Company

Wiring Diagram



Requirements

- ▶ Three independent signals are required for the closed, mid and open positions. These signals also provide power to the solenoid valves through the control logic switches. These signals must be electrically isolated and share a common ground. Two low signal lines need to be provided for the solenoids as well, as shown in the wiring diagram to the right.
- ▶ Double-acting pneumatic actuator with a clean air source.

Installation Instructions

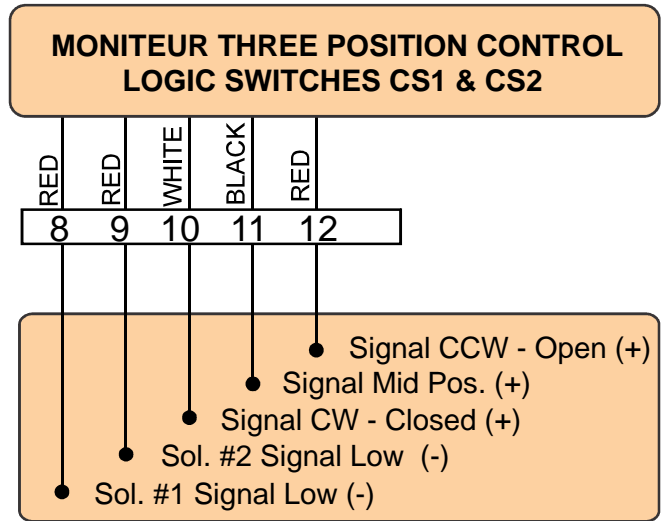


NOTE: Operation Instructions depict an actuated package set for clockwise to close and counterclockwise to open operation.

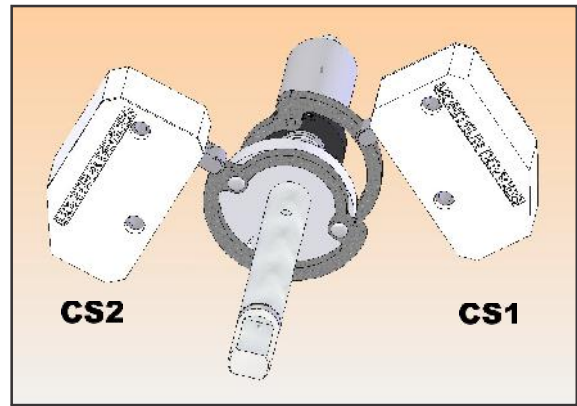
1. Mount limit switch package to the rotary actuator with an appropriate mounting bracket.
2. Connect power lines according to the three position control connections shown at right.
3. Connect clean filtered air to each of the 3-way solenoid valves, to port '3' as listed in table on page 1.
4. Connect solenoid 1 (use port '1' as listed in the table on page 1) to the actuator porting so that when pressurized the actuator rotates in the CCW direction. Connect solenoid 2 (use port '1' as listed in table on page 1) to the actuator porting so that when pressurized the actuator rotates in the CW direction. Note: The solenoid configuration is shown below. One solenoid valve is used for each actuator port - one to move the valve clockwise and the other counter-clockwise. Ensure that all air connections are tight and all electrical connections are secured at their proper terminal points.
5. The unit is designed to accept three control signals - one to open the valve, one to close it, and one to move to mid position.
6. The valve should be in the fully closed position with power sent to terminal 10.
7. The valve should be in the mid position with power sent to terminal 11. The logic switches marked "CS1" and "CS2" are both used to set the mid position with their custom cams - "CS1" for setting the mid position when the valve is rotating clockwise from the open position and "CS2" for setting the mid position when the valve is rotating counter-clockwise from the closed position. See the table below to understand how the logic switches need to be activated for each position.
8. The valve should be in the fully open position with power sent to terminal 12.
9. Connect speed controls to port 3 of each solenoid, if desired.

Flow Positions

Stage No.	Flow Condition Required	Switch CS1	Switch CS2
1	Closed	Tripped	Not Tripped
2	Mid	Tripped	Tripped
3	Open	Not Tripped	Tripped

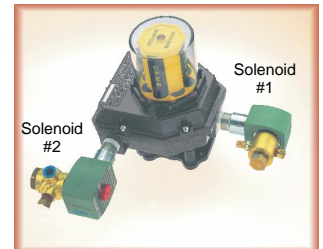


THREE POSITION CONTROL CONNECTIONS



CUSTOM CONTROL CAM CONFIGURATION

Solenoid Configuration



NOTE: To hold the mid position, both logic switches must be tripped (CS1 and CS2)