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 General Purpose, Intrinsically Safe and Explosion-Proof configurations. In addition to the control switches, two switches are included for valve position monitoring.

Valve #2

Valve #1

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 & 2, Group C & D
Class 2, Division 1 & 2, Group E, F, G

General Purpose Version Available

Features
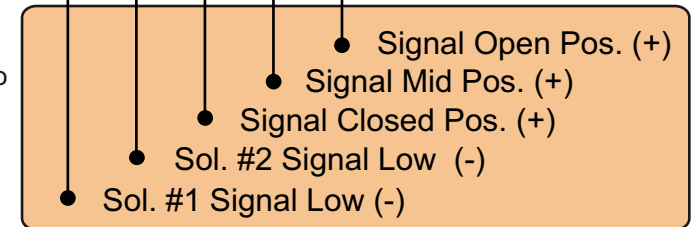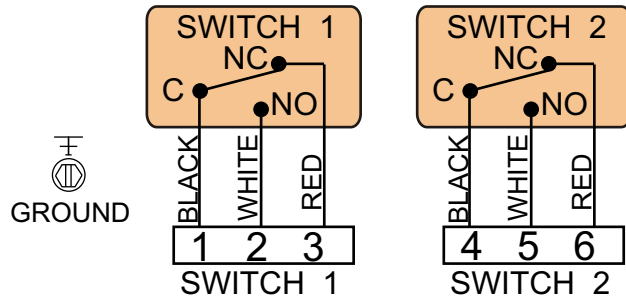
➤ Fully Adjustable Mid Point

➤ 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

➤ General Purpose Version Available Rated Nema 4, 4x

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
General Purpose	D3D-FMYB-51B1	8320G194	0.12	120 VAC-60Hz	Brass
Intrinsically Safe	D3D-FMYB-53B5	WBIS8314A300	0.08	24 VDC - IS	Brass
Explosion-Proof	D3D-AMYB-51B1	EF8320G194	0.12	120 VAC-60Hz	Brass

** 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

SWITCH 1
NC
C
NO
BLACK WHITE RED
1 2 3
SWITCH 1

GROUND

SWITCH 2
NC
C
NO
BLACK WHITE RED
4 5 6
SWITCH 2

MONITEUR THREE POSITION CONTROL LOGIC SWITCHES CS1 & CS2

WHITE WHITE BLACK RED RED
8 9 10 11 12

Signal Open Pos. (+)
Signal Mid Pos. (+)
Signal Closed Pos. (+)
Sol. #2 Signal Low (-)
Sol. #1 Signal Low (-)
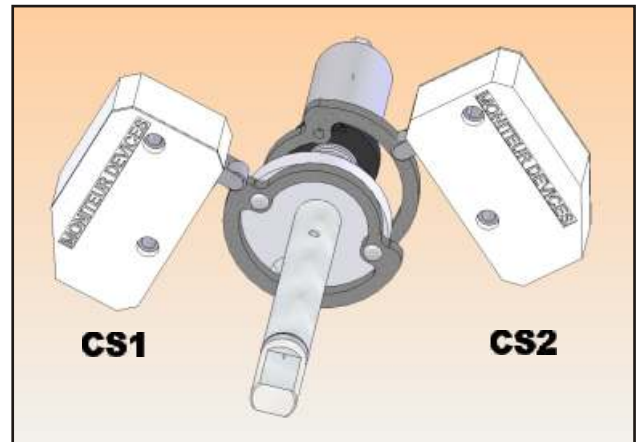
THREE POSITION CONTROL CONNECTIONS

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 and clean filtered air to proper positions. Ensure that all air connections are tight and all electrical connections are secured at their proper terminal points.

3. 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.

CUSTOM CONTROL CAM CONFIGURATION

4. The valve should be in the fully closed position with power sent to terminal 10.

5. 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.

6. The valve should be in the fully open position with power sent to terminal 12.

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

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