

MP5100 & MP5300 Pneumatic Zone Valve Actuators



General Actuator Specifications

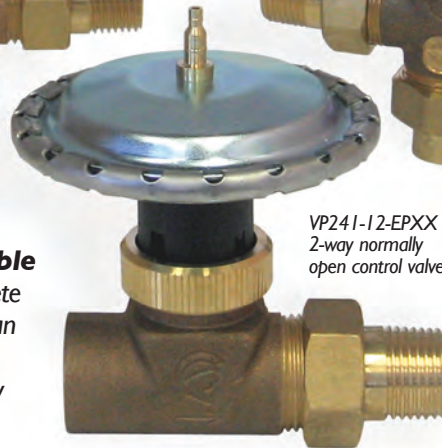
- Construction: Zinc plated steel housing
 - Diaphragm: Heavy duty molded neoprene
 - Dimensions: Working area 4sq"
 - Stroke: 0.197" (5mm)
 - Spring: Stainless steel retracts actuator shaft and allows the valve stem to rise up on loss of air pressure.
 - Nominal Spring Range:
MP5100, 3-6PSI (21Kpa-41Kpa)
MP5300, 7-11PSI (48Kpa-76Kpa)
- Nominal no load spring range is based on maximum 5mm stroke.
- Starting point: Non adjustable.
Maximum air pressure: 50PSI (345Kpa)
 - Operating temperature: -20to220°F, (-29 to 104°C)
 - Air Connection: Combination 5/32" & 1/4" barb fitting for plastic tubing
 - Pilot Positioner: Not applicable



VP320-12-EDXX
3-way control valve



VP222-12-ERXX
2-way normally closed control valve



VP241-12-EPXX
2-way normally open control valve

Interchangeable
with the complete
range of Spartan
valve bodies.
See Valve Body
datasheet.

Description

Spartan Peripheral Devices pneumatic 4sq" actuators are available in high and low spring ranges and have a compact design with minimum profile suitable for tight space requirements. They are used with Spartan Peripheral Devices zone valve bodies in a 2 way normally open configuration, V240, V241, V243, V245, 2 way normally closed configuration V222 and a 3 way configuration V320, V325 and V420 for proportional or 2 position applications. Each actuator is equipped with a Neoprene diaphragm and biasing spring to aid the return spring built into the respective valve. Normally the return spring within the valve and the biasing spring within the actuator act together to open the valve. Air pressure opposes the two springs forcing the valve closed when the air pressure is greater than the nominal spring ranges. Further air pressure opposes the pressure of the fluid within the system, closing the valve flow.

To calculate the actual spring range under specific hydronic conditions see table below.

Valve Differential Pressure (PSI)	5	10	15	20	25	30	35	40	45	50
3-6 PSI Range	6.4	6.75	7.12	7.50	7.87	8.25	8.62	9.00	9.37	9.75
7-11 PSI Range	11.4	11.75	12.12	12.50	12.87	13.25	13.62	14.00	14.37	14.75



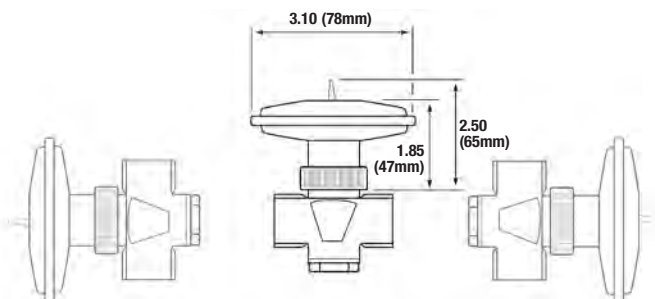
This product was tested by an independent building owner against a competitive product over 5 million full cycles at which point the competitive product failed and the test was stopped!

Spartan - Controls *without* Compromise



Installation Instructions:

The actuator can be installed vertically or horizontally; it cannot be installed upside down. The Actuator mounting thumbnut is to be tightened by hand only, using tools may result in over-tightening.



MP5100 & MP5300 Pneumatic Zone Valve Actuators

Valve Body	Description	Size	*Cartridge CV selection	Actuator MP5100 3-6 PSI range	Actuator MP5300 7-11 PSI range	Max. Close-off PSI / Bar
V240 - 2 way valve body - union connection both ports - normally open						
V240-12		1/2"	BC-0.15,0.25	VP240-12-BCXX-5100	VP240-12-BCXX-5300	100 / 6.8
V240-12	Select solder or threaded unions**	1/2"	EP-0.50,1.0,1.5,2.0,2.5,3.5	VP240-12-EPXX-5100	VP240-12-EPXX-5300	50 / 3.4
V240-34		3/4"	EP-0.50,1.0,1.5,2.0,2.5,3.5	VP240-34-EPXX-5100	VP240-34-EPXX-5300	50 / 3.4
V241 - 2 way valve body - female port in, X union connection port out						
V241-12		1/2"	BC-0.15,0.25	VP241-12-BCXX-5100	VP241-12-BCXX-5300	100 / 6.8
V241-12	Single union straight with female port in and male union out	1/2"	EP-0.50,1.0,1.5,2.0,2.5,3.5	VP241-12-EPXX-5100	VP241-12-EPXX-5300	50 / 3.4
V241-34		3/4"	EP-1.0,1.5,2.0,2.5,3.5,4.5	VP241-34-EPXX-5100	VP241-34-EPXX-5300	50 / 3.4
V241-34		3/4"	EV-1.0,1.5,2.0,2.5,3.5,4.5	VP241-34-EVXX-5100	VP241-34-EVXX-5300	50 / 3.4
V243 - 2 way valve body - female port in, X female port out						
V243-12		1/2"	BC-0.15,0.25	VP243-12-BCXX-5100	VP243-12-BCXX-5300	100 / 6.8
V243-12	Female by female port straight valve body	1/2"	EP-0.50,1.0,1.5,2.0,2.5,3.5	VP243-12-EPXX-5100	VP243-12-EPXX-5300	50 / 3.4
V243-34		3/4"	EP-1.0,1.5,2.0,2.5,3.5,4.5	VP243-34-EPXX-5100	VP243-34-EPXX-5300	50 / 3.4
V243-10		1"	EB-6.0,6.4,8.0,9.0	VP243-10-EBXX-5100	VP243-10-EBXX-5300	100 / 6.8
V245 - 2 way valve body - female port in, X female port out						
V245-12		1/2"	BC-0.15,0.25	VP245-12-BCXX-5100	VP245-12-BCXX-5300	100 / 6.8
V245-12	Direct solder body	1/2"	EP-0.50,1.0,1.5,2.0,2.5,3.5	VP245-12-EPXX-5100	VP245-12-EPXX-5300	50 / 3.4
V245-34		3/4"	EP-0.50,1.0,1.5,2.0,2.5,3.5	VP245-34-EPXX-5100	VP245-34-EPXX-5300	50 / 3.4
V160 - 2 way valve body - angle union globe						
V160-12		1/2"	1.9	VP160-12-1.9-5100	VP160-12-1.9-5300	50 / 3.4
V160-34	Angle body with single union	3/4"	3.0	VP160-34-3.0-5100	VP160-34-3.0-5300	35 / 2.4
V160-10		1"	6.3	VP160-10-6.3-5100	VP160-10-6.3-5300	20 / 1.4
V222 - 2 way valve body - union connection both ports - normally closed						
V222-12		1/2"	ER0.5,1.0,2.5,3.0	VP222-12-XX-5100	VP222-12-XX-5300	50 / 3.4
V222-34		3/4"	ER0.5,1.0,2.5,3.0	VP222-34-XX-5100	VP222-34-XX-5300	50 / 3.4
V320 - 3 way diverting valve body - unions on all three ports - normally open A-B port						
V320-12		1/2"	ED1.0,2.0,3.0,3.5	VP320-12-EDXX-5100	VP320-12-EDXX-5300	50 / 3.4
V320-34	Select solder or threaded unions**	3/4"	ED1.0,2.0,3.0,3.5	VP320-34-EDXX-5100	VP320-34-EDXX-5300	50 / 3.4
V345-34		3/4"	CV5.5	VP345-34-5-5-5100	VP345-34-5-5-5300	50 / 3.4
V345-10	Threaded unions only***	1"	CV5.5	VP345-10-5-5-5100	VP345-10-5-5-5300	50 / 3.4
V325 - 3 way diverting valve body - direct solder - normally open A-AB port						
V325-12		1/2"	ED1.0,2.0,3.0,3.5	VP325-12-EDXX-5100	VP325-12-EDXX-5300	50 / 3.4
V325-34	3 way diverting direct solder	3/4"	ED1.0,2.0,3.0,3.5	VP325-34-EDXX-5100	VP325-34-EDXX-5300	50 / 3.4

* Select CV from available cartridges and replace XX with CV value in complete part number of the assembly. †Maximum differential pressure 50 Psi / 3.4 Bar to prevent water noise.

** Valve bodies V240 and V320 will accept 1/2" or 3/4" unions in either solder or threaded versions, or combinations of them. ***Valve body V345 will accept 3/4" or 1" threaded unions. See Valve Body data sheet.