

## VP111-5100 through VP445-5300

### Compact pneumatic normally open zone control valves

#### Two Way, Three Way and Four Port, spring return

**COMPACT PNEUMATIC CONTROL VALVES - WATER & L.P. STEAM** Inherently spring return, modulating or two-position, normally open.

**DESCRIPTION** - These 2, 3 and 4 port pneumatic control valves all use common actuators having spring biased, neoprene rubber diaphragms, zinc plated steel cases, with thermally isolating yokes of glass filled nylon composite.

They are available for the control of hot or chilled water, glycol (50%) and low pressure steam.

Ambient air temperatures are from 5°C (40°F) to 50°C (122°F).

VALVES	V111	V240	V132	V245	V160	V320	V325	V445
Body Type	2-way straight Single Union	2-way straight Two Unions	2-way straight Balanced F/F	2-way solder	2-way angle Single Union	3-way Diverting All Ports Unions	3-way Diverting All Ports Solder	3-way, 4-port
Body Material	Brass	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Brass
Stem	Brass-Nickel Pl.	Stainless	Stainless	Stainless	Stainless	Stainless	Stainless	Brass-Nickel Pl.
Class	125#	250#	200#	250#	200#	250#	250#	250#
Max. Temp	110°C/230°F	138°C/280°F	138°C/280°F	138°C/280°F	138°C/280°F	100°C/212°F	100°C/212°F	100°C/212°F
Service	Water Only	Water and 15 PSIG (1bar) Steam			Water Only	Water Only	Water Only	Water Only
EPDM Disc	All Spartan zone valves 2,3 -way or 4 port are equipped with 1 piece screw-in cartridge for one-step replacement of disc, return spring, stem and packing							
Stainless Spring								
EPDM Packing								

#### SPECIFICATIONS - Valves 2-way, 3-way or 4-port.

All valve bodies are spring loaded stem up. The spring returns the valve to stem up when power is lost in spring-return actuators.

Valves V111 (straight) and V160 (angle) are union globe with female NPT inlets and male union outlets. Valves V325 and V245 have soldered connections all ports.

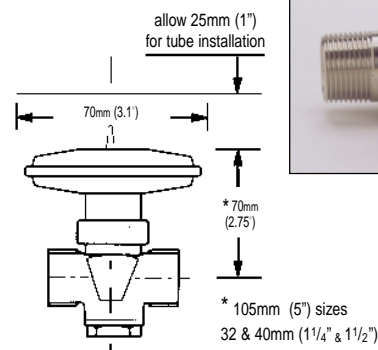
Valves V240, V320, V345 and V445 have union connections on all ports. Couplings available sweat, NPT or BSPT.

All valves have replaceable elements for ease of maintenance. Stem, packing, seat and spring are replaced as a package without removing the valves from the line, be they 2-way 3-way, or 4-port models.

#### SPECIFICATIONS - Pneumatic Actuators

These compact 4 square inch pneumatic actuators are available in high and low spring ranges, nominally 3-6 psi and 7-11 psi. They are suitable for use with the Spartan terminal unit valve bodies listed above, for proportional or 2-position application. To calculate actual spring range under specific hydronic conditions, see Spartan report, Valve Selection Guide.

Each actuator is equipped with Neoprene diaphragm and biasing spring to aid the return spring built with 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 to flow.



The actuators are therefore easily removed for service or replacement with simple thumb nut or knurled mounting ring.

Air pressure should be removed before removing the actuator.

MP-5100 actuators are biased to provide 3-6 psi nominal spring range (including valve spring and biasing spring).

MP-5300 actuators are biased to provide 7-11 psi nominal spring range (including valve spring and biasing spring).

#### HOW TO SPECIFY

Supply Spartan compact pneumatic terminal unit control valves. The valve bodies shall be 125#, 200# or 250# (8, 13 or 16 bar) static pressure rated, complete with replaceable elements to facilitate maintenance without removing the valves from the line, whether 2-way, 3-way or 4-way. Each valve shall be equipped with union for easy removal, 3-way and 4-port valves shall be equipped with unions on all ports. Exceptions are V-245 and V-325 valves which are direct sweat type.

The diaphragm type pneumatic actuators shall be metal, not plastic, easily removable by means of knurled mounting ring for simple replacement and service. They shall be compact for use in tight confines, available in high or low spring ranges, and equipped with thermally insulated yoke suitable for use on chilled or hot water and low pressure steam.

# VP111-5100 through VP445-5300

## Compact Pneumatic normally open Zone Control Valves Two Way, Three Way and Four Port, spring return versions

### LOW SPRING RANGE 3-6PSI

Valve Assembly Part #	USCv	KVs	Size	Description	Actuator Part #	Valve Part #	Replac'mt element	Max Δ psi/ bar
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#### 2 way 125# Straightway Union Globe:

VP111-5100-F-1.5	1.5	1.3	1/2"	Straight union 125# Globe valve	MP5100	V111	AV111 -1.5	100/6
VP111-5100-F-2.5	2.5	2.2	3/4"	3-6# pneumatic norm.open act.	MP5100	V111	AV111 -2.5	70/4.6

#### 2 way 200# Straightway Union Globe Balanced Body

VP132-5100-F-4.0	4.0	3.4	1/2"	Straight FxP	MP5100	V132	AV132-4.0	100/6
VP132-5100-F-6.1	6.1	5.3	3/4"	200# globe valve with	MP5100	V132	AV132-6.1	100/6
VP132-5100-F-6.4	6.4	5.4	1"	3-6# pneumatic norm.open act.	MP5100	V132	AV132-6.4	100/6
VP132-5100-F-12.7	12.7	10.9	1 1/4"		MP5100	V132	AV132-12.7	100/6

#### 2 way 250# Straightway Union Globe Both Ends:

VP240-BC0.25-5100	0.25	0.22	1/8"	Straight Double Unions	MP5100	V240	BC0.25	100/6
VP240-BC0.50-5100	0.50	0.43	1/4"	250# globe valve with	MP5100	V240	BC0.50	100/6
VP240-EPI.0-5100	1.00	0.86	3/8"	3-6# pneumatic norm.open act.	MP5100	V240	EPI.0	100/6
VP240-EPI.5-5100	1.50	1.29	1/2"	Unions Available	MP5100	V240	EPI.5	100/6
VP240-EP2.0-5100	2.00	1.72	5/8"	1/2", 3/4", 1"	MP5100	V240	EP2.0	100/6
VP240-EP2.5-5100	2.50	2.15	3/4"	in NPT, BSPT, Solder	MP5100	V240	EP2.5	100/6
VP240-EP3.5-5100	3.50	3.01	1"		MP5100	V240	EP3.5	100/6

#### 2 way 200# Straightway with Solder Ends:

VP245-BC0.25-5100	0.25	0.22	1/8"	Straight Solder Body 7/8"	MP5100	V245	BC0.25	100/6
VP245-BC0.50-5100	0.50	0.43	1/4"	250# globe valve with	MP5100	V245	BC0.50	100/6
VP245-EPI.0-5100	1.00	0.86	3/8"	3-6# pneumatic norm.open act.	MP5100	V245	EPI.0	100/6
VP245-EPI.5-5100	1.50	1.29	1/2"	For 5/8" use insert	MP5100	V245	EPI.5	100/6
VP245-EP2.0-5100	2.00	1.72	5/8"	AV6312	MP5100	V245	EP2.0	100/6
VP245-EP2.5-5100	2.50	2.15	3/4"		MP5100	V245	EP2.5	100/6
VP245-EP3.5-5100	3.50	3.01	1"		MP5100	V245	EP3.5	100/6

#### 2 way 200# Angle Union Globe:

VP160-5100-F-1.9	1.9	1.6	1/2"	Angle union 200#	MP5100	V160	AV130-1.9	100/6
VP160-5100-F-3.0	3.0	2.6	3/4"	globe valve	MP5100	V160	AV130-3.0	70/4.6
VP160-5100-F-6.3	6.3	5.4	1"	3-6# pneumatic norm.open act.	MP5100	V160	AV130-6.3	30/2
VP162-5100-F-12.7	12.7	10.9	1 1/4"		MP5100	V162	AV132-12.7	100/6

#### 3 way 250# diverting with Unions all three ports:

VP320-EPD1.0-5100	1.0	0.86		3 way union diverting valve	MP5100	V320	EPD1.0	100/6
VP320-EPD2.0-5100	2.0	1.72		3-6# pneumatic norm.open act.	MP5100	V320	EPD2.0	100/6
VP320-EPD3.5-5100	3.5	3.01		Unions available 1/2", 3/4", 1"	MP5100	V320	EPD3.5	100/6
VP345-5100-F-5.5	5.5	4.70		in NPT, BSPT, Solder.	MP5100	V345	AV345-5.5	30/2

#### 3 way 250# diverting with Solder Body:

VP325-EPD1.0-5100	1.0	0.86	7/8"	3 way solder diverting valve	MP5100	V325	EPD1.0	100/6
VP325-EPD2.0-5100	2.0	1.72	1"	3-6# pneumatic norm.open act.	MP5100	V325	EPD2.0	100/6
VP325-EPD3.5-5100	3.5	3.01	1 1/8"	For 5/8" use insert AV6312.	MP5100	V325	EPD3.5	100/6

#### 4 way 250# diverting/ mixing with Unions all four ports:

VP445-5100-F-2.3	2.3	2.0	1/2"	4 way union diverting valve with	MP-5100	V445	AV345-2.3	100/6
VP445-5100-F-3.7	3.7	3.2	3/4"	3-6# pneumatic norm.open act.	MP-5100	V445	AV345-3.7	100/6

### HIGH SPRING RANGE 7-11 PSI

Valve Assembly Part #	USCv	KVs	Size	Description	Actuator Part #	Valve Part #	Replac'mt element	Max Δ psi/ bar
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#### 2 way 125# Straightway Union Globe:

VP111-5300-F-1.5	1.5	1.3	1/2"	Straight union 125# Globe valve	MP5300	V111	AV111-1.5	50/3.3
VP111-5300-F-2.5	2.5	2.2	3/4"	7-11# pneumatic norm.open act.	MP5300	V111	AV111-2.5	35/2

#### 2 way 200# Straightway Union Globe Balanced Body

VP132-5300-F-4.0	4.0	3.4	1/2"	Straight FxP	MP5300	V132	AV132-4.0	100/6
VP132-5300-F-6.1	6.1	5.3	3/4"	200# globe valve	MP5300	V132	AV132-6.1	100/6
VP132-5300-F-6.4	6.4	5.5	1"	7-11# pneumatic norm.open act.	MP5300	V132	AV132-6.4	100/6
VP132-5300-F-12.7	12.7	10.9	1 1/4"		MP5300	V132	AV132-12.7	100/6

#### 2 way 250# Straightway Union Globe Both Ends:

VP240-BC0.25-5300	0.25	0.22	1/8"	Straight Double Unions	MP5300	V240	BC0.25	100/6
VP240-BC0.50-5300	0.50	0.43	1/4"	250# globe valve with	MP5300	V240	BC0.50	100/6
VP240-EPI.0-5300	1.00	0.86	3/8"	7-11# pneumatic norm.open act.	MP5300	V240	EPI.0	50/3.3
VP240-EPI.5-5300	1.50	1.29	1/2"	Unions Available	MP5300	V240	EPI.5	50/3.3
VP240-EP2.0-5300	2.00	1.72	5/8"	1/2", 3/4", 1"	MP5300	V240	EP2.0	50/3.3
VP240-EP2.5-5300	2.50	2.15	3/4"	in NPT, BSPT, Solder.	MP5300	V240	EP2.5	50/3.3
VP240-EP3.5-5300	3.50	3.01	1"		MP5300	V240	EP3.5	50/3.3

#### 2 way 200# Straightway with Solder Ends:

VP245-BC0.25-5300	0.25	0.22	1/8"	Straight Solder Body 7/8"	MP5300	V245	BC0.25	100/6
VP245-BC0.50-5300	0.50	0.43	1/4"	250# globe valve with	MP5300	V245	BC0.50	100/6
VP245-EPI.0-5300	1.00	0.86	3/8"	7-11# pneumatic norm.open act.	MP5300	V245	EPI.0	50/3.3
VP245-EPI.5-5300	1.50	1.29	1/2"	For 5/8" use insert	MP5300	V245	EPI.5	50/3.3
VP245-EP2.0-5300	2.00	1.72	5/8"	AV6312	MP5300	V245	EP2.0	50/3.3
VP245-EP2.5-5300	2.50	2.15	3/4"		MP5300	V245	EP2.5	50/3.3
VP245-EP3.5-5300	3.50	3.01	1"		MP5300	V245	EP3.5	50/3.3

#### 2 way 200# Angle Union Globe:

VP160-5300-F-1.9	1.9	1.6	1/2"	Angle union	MP5300	V160	AV130-1.9	50/3.3
VP160-5300-F-3.0	3.0	2.6	3/4"	200# globe valve	MP5300	V160	AV130-3.0	35/2
VP160-5300-F-6.3	6.3	5.4	1"	7-11# pneumatic norm.open act.	MP5300	V160	AV130-6.3	20/1.3
VP162-5300-F-12.7	12.7	10.9	1 1/4"		MP5300	V162	AV132-12.7	60/4

#### 3 way 250# diverting with Unions all three ports:

VP320-EPD1.0-5300	1.0	0.86		3 way union diverting valve	MP5300	V320	EPD1.0	50/3.3
VP320-EPD2.0-5300	2.0	1.72		7-11# pneumatic norm.open act.	MP5300	V320	EPD2.0	50/3.3
VP320-EPD3.5-5300	3.5	3.01		Unions Available 1/2", 3/4", 1"	MP5300	V320	EPD3.5	50/3.3
VP345-5300-F-5.5	5.5	4.70		in NPT, BSPT, Solder	MP5300	V345	AV345-5.5	15/1

#### 3 way 250# diverting with Solder Body:

VP325-EPD1.0-5300	1.0	0.86	7/8"	3 way solder diverting valve	MP5300	V325	EPD1.0	50/3.3
VP325-EPD2.0-5300	2.0	1.72	1"	7-11# pneumatic norm.open act.	MP5300	V325	EPD2.0	50/3.3
VP325-EPD3.5-5300	3.5	3.01	1 1/8"	For 5/8" use insert AV6312.	MP5300	V325	EPD3.5	50/3.3

#### 4 way 250# diverting/ mixing with Unions all four ports:

VP445-5300-F-2.3	2.3	2.0	1/2"	4 way union diverting valve with	MP5300	V445	AV445-2.3	50/3.3
VP445-5300-F-3.7	3.7	3.2	3/4"	7-11# pneumatic norm.open act.	MP5300	V445	AV445-3.7	50/3.3