

VE411 & 431 SERIES ELECTRONIC SYSTEM CONTROL VALVES PN10 & PN16 (ANSI 250 rated 400 psi @ 150°F - 27 Bar @ 65°C) Two way or three way mixing - lift and lay (globe) - 25mm to 80mm (1 to 3)

VALVE ASSEMBLIES - These assemblies are complete with actuators, linkage assembly and valve body. They are suitable for use in 2-way applications, angle or straight to factory order.

VALVE BODIES - Utilising anti-dezincification bronze components and a heavy duty valve body, they are coupled with a unique variable ratio, all-metal cast linkage system which runs slower at the ends for improved modulation and better close-off force, speeding up in the centre range. Built to both European and American standards the valves are stocked in BSPT (PN10&16) in Europe and NPT (125 - 250#) in Canada and in the USA.

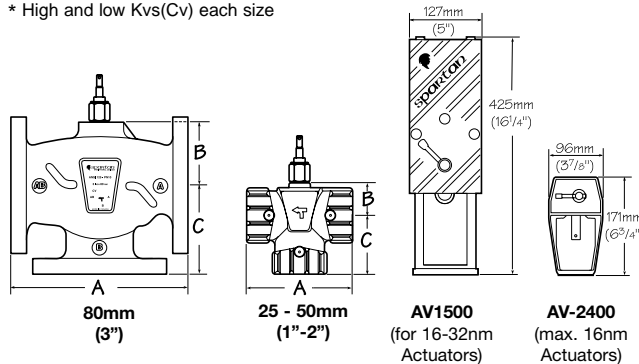
OTHER FEATURES INCLUDE:

- 1 1/2 million cycle V-ring packing cartridge
- Stem scrubber rings top and bottom
- Guided stem both top and bottom
- Parabolic and fluted plugs
- Better than 50:1 turndown ratio
- Maintenance free
- Trouble shooting 'A port' pointer
- Optional tapped ports



Valve Body Dimensions			
Size *	A	B	C
25mm (1")	125mm (5")	30mm (1.2")	69mm (2.7")
40mm (1 1/2")	140mm (5.5")	38mm (1.5")	77mm (3")
50mm (2")	152mm (6")	39mm (1.5")	84mm (3.3")
80mm (3")	250mm (10")	91mm (3.6")	124mm (4.9")

* High and low Kvs(Cv) each size



APPLICATION - Primarily designed for use on closed systems, these valves can nonetheless be used in many other applications. Dezincification resistant, they can be used in most HVAC control systems as well as industrial applications. When used on mains water or open systems, such as cooling towers or open tank installations, mineral deposit build-up may affect operation requiring more frequent maintenance. (For heat transfer oils, steam, brine, seawater, etc., refer to the factory with full details of the fluid specification.)

Suitable for use as either 2-way or 3-way valves, in hot or cold water systems, and with static pressure rating suitable to 400 psi., (ANSI 250), they adapt to low or hi rise installations.

Technically mixing valves in their 3-way format, these valves can nonetheless be used on either mixing or diverting applications as applied to the load, but correct piping should be observed on diverting applications, and only in closed systems. The water must always mix within the body even though it can divert through or around the load.

Diverting into open systems such as tanks, sumps or cooling towers should be avoided with this series of valves. (Refer to the installation instruction sheets.)

ELECTRONIC VALVE ACTUATORS

Actuators are available for 2-position, floating (tri-state) and 0-10 VDC modulating control. Ambient temperature limitation is from 5°C (40°F) to 40°C (105°F) non-condensing. Power supply voltage is 24 VAC 50/60Hz on all models.

Tri-state actuators can be supplied with an optional 0 - 10 VDC feedback to transmit the position of the actuator for use in external control loops or position indication. Auxiliary switches also available.

All incorporate override lever/position indicators. The heavy duty steel "Geneva" movement provides a robust, variable ratio motion which provides more force at the ends of travel for seating the valve extra tightly. The same variable ratio assists in the valve characteristics to improve modulating control.

OTHER FEATURES INCLUDE:

- Lower, more compact package
- Both mounting nuts and studs to ensure ease of removal, even after decades of corrosive service
- All metal. No plastic. Hardened steel movement
- Override lever/pointer (exc. Spring return)
- Factory installed and pre-adjusted to its valve body
- Maintenance-free, long life expectancy and housed in an attractive, corrosion resistant, sturdy metal yoke

Valve Actuators				
Part no.	Signal input	Torque	Linkage	Stem Force
Non-spring return (Fail last position)				
ME-5120	Tri-state	5nm / 44in/lb	AV-2414	55kg / 120lb
ME-5320	0-10VDC	5nm / 44in/lb	AV-2414	55kg / 120lb
ME-5130	Tri-state	10nm / 88in/lb	AV-2414	106kg / 235lb
ME-5330	0-10 VDC	10nm / 88in/lb	AV-2414	106kg / 235lb
ME-5140	Tri-state	16nm / 140in/lb	AV-1517	118kg / 260lb
ME-5340	0-10 VDC	16nm / 140in/lb	AV-1517	118kg / 260lb
ME-5140	Tri-state	16nm / 140in/lb	AV-1522	95kg / 210lb
ME-5340	0-10 VDC	16nm / 140in/lb	AV-1522	95kg / 210lb
Spring return				
ME-5630	Tri-state	7nm / 62in/lb	AV-2414	80kg / 180lb
ME-5830	0-10 VDC	7nm / 62in/lb	AV-2414	80kg / 180lb
ME-5630	Tri-state	7nm / 62in/lb	AV-2417	56kg / 120lb
ME-5830	0-10 VDC	7nm / 62in/lb	AV-2417	56kg / 120lb
ME-5640	Tri-State	16nm / 140in/lb	AV-2417	127kg / 280lb
ME-5840	0-10 VDC	16nm / 140in/lb	AV-2417	127kg / 280lb
ME-5640	Tri-State	16nm / 140in/lb	AV-1522	95kg / 210lb
ME-5840	0-10 VDC	16nm / 140in/lb	AV-1522	95kg / 210lb

VE411 & 431 SERIES ELECTRONIC SYSTEM CONTROL VALVES

COMMERCIAL CONTROL FEATURES - The unique design of Spartan PD's valve line is the cost effective "one piece" heavy bronze valve body and its ability to be used as a 2-way or 3-way valve by closing off the unused ports "A" or "B" (Never "AB"). "Suction-cup" effects will not occur and, because of the unique plug characterisation, good control will be had in both 2 and 3-way formats. (modified equal % to linear. See charts). These specially designed plug shapes incorporate the best features of equal percentage and linear characterization to provide a valve excellent for modulating well at low flow, while adapting to provide linear characterization in the later stages of valve opening. This feature, along with the variable ratio linkage kit, provides better mixing yet no mid-range starvation, (common with most 3-way equal percentage valves). This allows for improved throttling action in 2-way duty.

A unique trouble-shooting feature, a raised marker at the top of the bonnet, clearly defines port "A" after the insulation (lagging) has been installed.

INDUSTRIAL CONTROL VALVE FEATURES

For industrial applications these valves suffice well, incorporating features such as both bottom and top stem guides for quieter, vibration-free performance, stainless steel and low zinc components for years of corrosion free service life, and tapping points at all ports for test gauges, temperature probes, pressure taps, etc. (tapped to 1/8" NPT or BSPT to order). They also adapt to pneumatic operation.

SUITABLE FLUIDS - These valves are recommended for use with hot and chilled water or glycol. Check with the factory for other fluids.

PIPING 3-WAY MIXING VALVES IN MIXING AND DIVERTING APPLICATIONS

3-Way Mixing Valves used in mixing application

Mixing valves must always be used with the flow leaving the common port AB. They must therefore be installed on the supply as shown if the application is to be mixing. In this application, a circulator is required in the loop.

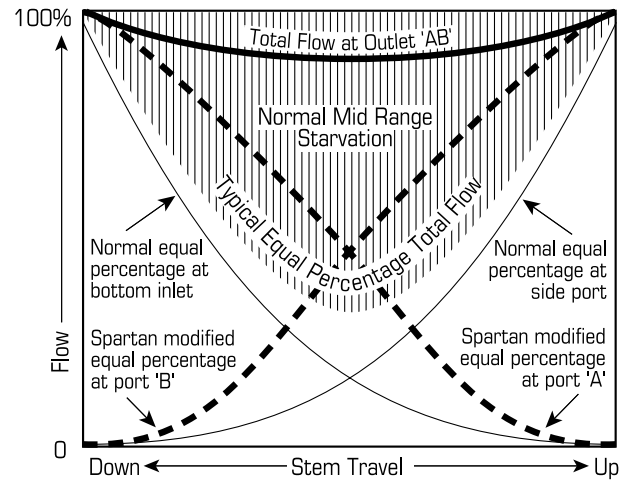
NOTE: The return (and circulator) must be from this load. A common return from other loads mixed in will cause overheating.

3-Way mixing valves used in diverting application

Mixing valves must always be used with the flow leaving the common port AB. They must therefore be installed on the return as shown if the application is to be diverting through or around the coil.

3-Way Diverting valves must be on open tank installations - never mixing valves

Only diverting valves must be used to dump water into an open tank or alternatively back to the bypass. Typical installations include cooling towers, open tanks, batch vats, etc. Installation of mixing valves in this application is to be avoided, particularly where high pressures are executed.



Warning

Globe valves or lift-and-lay valves are designed for flow in one specific direction only, that is, the liquid forcing the plug off the seat. If used with the flow going backwards with medium to high water flow and p's exceeding 5psig (0.3 bar), the water forces the plug to slam against its seat. Slamming and/or water hammer may then be apparent.

Optional weather type enclosure AM 10/11 Series

