

VE111-4330 through VE445-4830
Compact Electronic 0-10 VDC modulating zone control valves
Two Way, Three Way and Four Port, in spring return or fail-in-last-position

COMPACT GEAR MOTOR CONTROL VALVES - WATER & L.P. STEAM

ME4000 SERIES POWER CUBES 2-10 VDC Modulating, Fail-safe or Fail-in-last Position

DESCRIPTION - These 2, 3 and 4 port control valves all use a common glass filled, nylon composite, high strength family of electric gear motor actuators. They are available for the control of hot or chilled water, glycol (50%) and low pressure steam.



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	Stainless							
Spring	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							
EPDM Packing	EPDM							

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 V245 and V325 have soldered connections all ports.

Valves V240, 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 -Power Cube Actuators

These actuators are available for 2-10VDC modulating control. (Closing jumper J-1 reverses action to 10-2VDC) They can be supplied in fail-safe or fail-in-last position versions. An insulating collar keeps valve body heat away from the actuator, and the IP51 case keeps water intrusion to a minimum (IP20 in spring-return versions).

Non-spring return ME 4330 actuators

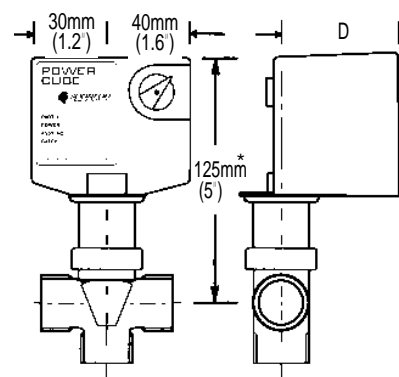
Ambient temperature rating is from 5°C (40°F) to 50°C (122°F) non condensing. Power supply voltage is 24VAC 50/60 Hz.

The actuator base motors are of reversible, DC types capable of continuous stall but also electronically protected to switch off at stall at end-of-travel.

The modulating control circuit with LED pickup incorporates a startup sequence whereby the actuator drives end-to-end and back to locate the ends of travel. Thereafter the actuator automatically zeros the starting point and sets the span of operation. Optical pickup provides precise positioning and anti-dithering hysteresis of 0.2 VDC limits hunting.

Auxiliary 1-5VDC feed-back transmits the position of the actuator for use in external control loops or position indication. A zero VDC signal is considered to signify a loss of power at the actuator. 0-5VDC and 6-10VDC ranges are available.

ACTUATOR	ME-4330	ME-4830
Action	2-10VDC	2-10VDC
Fail Position	Last	Up
Watts	3W	8W
Force	25#	25#
Feedback	1-5 VDC	1-5 VDC
Depth "D"	50mm (2")	66mm (2.6")



* 160mm (6 1/4") sizes 32 & 40mm (1 1/4" & 1 1/2")

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Compact Electronic 2-10VDC modulating zone control valves

Two Way, Three Way and Four Port, in spring return or fail-in-last-position

NON-SPRING RETURN CONTROL VALVES

Valve Assembly Part #	USCv	KVs	Size	Description	Actuator Part #	Valve Part #	Replac'mt element	Max Δ psi/ bar	
2 way 125# Straightway Union Globe:									
VE111-4330-F-1.5	1.5	1.3	1/2"	Straight union 125# Globe valve fail last position 2-10VDC act.	ME4330	V111	AV111-1.5	45/3	
VE111-4330-F-2.5	2.5	2.2	3/4"		ME4330	V111	AV111-2.5	30/2	
2 way 200# Straightway Union Globe Balanced Body									
VE132-4330-F-4.0	4.0	3.4	1/2"	Straight FxP 200# globe valve with fail last position 2-10VDC actuator.	ME4330	V132	AV132-4.0	60/4	
VE132-4330-F-6.1	6.1	5.3	3/4"		ME4330	V132	AV132-6.1	60/4	
VE132-4330-F-6.4	6.4	5.4	1"		ME4330	V132	AV132-6.4	60/4	
VE132-4330-F-12.7	12.7	10.9	1 1/4"		ME4330	V132	AV132-12.7	60/4	
2 way 250# Straightway Union Globe Both Ends									
VE240-BC0.25-4330	0.25	0.22		Straight Double Unions 250# globe valve with fail last position 2-10VDC actuator. Unions Available 1/2", 3/4", 1" in NPT, BSPT, Solder	ME4330	V240	BC0.25	60/4	
VE240-BC0.50-4330	0.50	0.43			ME4330	V240	BC0.50	60/4	
VE240-EP1.0-4330	1.00	0.86			ME4330	V240	EP1.0	45/3	
VE240-EP1.5-4330	1.50	1.29			ME4330	V240	EP1.5	45/3	
VE240-EP2.0-4330	2.00	1.72			ME4330	V240	EP2.0	45/3	
VE240-EP2.5-4330	2.50	2.15			ME4330	V240	EP2.5	45/3	
VE240-EP3.5-4330	3.50	3.01			ME4330	V240	EP3.5	45/3	
2 way 200# Angle Union Globe:									
VE160-4330-F-1.9	1.9	1.6	1/2"		Angle union 200# globe valve with fail last position 2-10VDC actuator.	ME4330	V160	AV130-1.9	40/2.7
VE160-4330-F-3.0	3.0	2.6	3/4"			ME4330	V160	AV130-3.0	30/2
VE160-4330-F-6.3	6.3	5.4	1"	ME4330		V160	AV130-6.3	15/1	
VE162-4330-F-12.7	12.7	10.9	1 1/4"	ME4330		V162	AV132-12.7	60/4	
3 way 250# diverting with Unions all three ports:									
VE320-EPD1.0-4330	1.0	0.86	3/4"	3 way union diverting valve with fail last position 2-10VDC act. Unions Available 1/2", 3/4", 1" in NPT, BSPT, Solder	ME4330	V320	EPD1.0	45/3	
VE320-EPD2.0-4330	2.0	1.72	3/4"		ME4330	V320	EPD2.0	45/3	
VE320-EPD3.5-4330	3.5	3.01	3/4"		ME4330	V320	EPD3.5	45/3	
VE345-4830-F-5.5	5.5	5.4	1"		ME4330	V345	AV345-5.5	15/1	
3 way 250# diverting with Solder Body:									
VE325-EPD1.0-4330	1.0	0.86	7/8"	3 way solder diverting valve with fail last position 2-10VDC actuator.	ME4330	V325	EPD1.0	45/3	
VE325-EPD2.0-4330	2.0	1.72	7/8"		ME4330	V325	EPD2.0	45/3	
VE325-EPD3.5-4330	3.5	3.01	7/8"		ME4330	V325	EPD3.5	45/3	
4 way 250# diverting/ mixing with Unions all four ports:									
VE445-4330-F-2.3	2.3	2.0	1/2"	4 way union diverting valve with fail last position 2-10VDC act.	ME-4430	V445	AV345-2.3	45/3	
VE445-4330-F-3.7	3.7	3.2	3/4"		ME-4430	V445	AV345-3.7	30/2	

SPRING RETURN CONTROL VALVES

Valve Assembly Part #	USCv	KVs	Size	Description	Actuator Part #	Valve Part #	Replac'mt element	Max Δ psi/ bar	
2 way 125# Straightway Union Globe:									
VE111-4830-F-1.5	1.5	1.3	1/2"	Straight union 125# Globe valve with norm. open 2-10VDC act.	ME4830	V111	AV111-1.5	45/3	
VE111-4830-F-2.5	2.5	2.2	3/4"		ME4830	V111	AV111-2.5	30/2	
2 way 200# Straightway Union Globe Balanced Body									
VE132-4830-F-4.0	4.0	3.4	1/2"	Straight FxP 200# globe valve with normally open 2-10VDC actuator.	ME4830	V132	AV132-4.0	60/4	
VE132-4830-F-6.1	6.1	5.3	3/4"		ME4830	V132	AV132-6.1	60/4	
VE132-4830-F-6.4	6.4	5.5	1"		ME4830	V132	AV132-6.4	60/4	
VE132-4830-F-12.7	12.7	10.9	1 1/4"		ME4830	V132	AV132-12.7	60/4	
2 way 250# Straightway Union Globe Both Ends									
VE240-BC0.25-4830	0.25	0.22		Straight Double Unions 250# globe valve with normally open 2-10VDC actuator. Unions Available 1/2", 3/4", 1" in NPT, BSPT, Solder.	ME4830	V240	BC0.25	60/4	
VE240-BC0.50-4830	0.50	0.43			ME4830	V240	BC0.50	60/4	
VE240-EP1.0-4830	1.00	0.86			ME4830	V240	EP1.0	45/3	
VE240-EP1.5-4830	1.50	1.29			ME4830	V240	EP1.5	45/3	
VE240-EP2.0-4830	2.00	1.72			ME4830	V240	EP2.0	45/3	
VE240-EP2.5-4830	2.50	2.15			ME4830	V240	EP2.5	45/3	
VE240-EP3.5-4830	3.50	3.01			ME4830	V240	EP3.5	45/3	
2 way 200# Straightway with Solder Ends:									
VE245-BC0.25-4830	0.25	0.22	7/8"		Straight Solder Body 7/8" 250# globe valve with normally open 2-10VDC actuator. For 3/8" use insert AV6312	ME4830	V245	BC0.25	60/4
VE245-BC0.50-4830	0.50	0.43	7/8"			ME4830	V245	BC0.50	60/4
VE245-EP1.0-4830	1.00	0.86	7/8"	ME4830		V245	EP1.0	45/3	
VE245-EP1.5-4830	1.50	1.29	7/8"	ME4830		V245	EP1.5	45/3	
VE245-EP2.0-4830	2.00	1.72	7/8"	ME4830		V245	EP2.0	45/3	
VE245-EP2.5-4830	2.50	2.15	7/8"	ME4830		V245	EP2.5	45/3	
VE245-EP3.5-4830	3.50	3.01	7/8"	ME4830		V245	EP3.5	45/3	
2 way 200# Angle Union Globe:									
VE160-4830-F-1.9	1.9	1.6	1/2"	Angle union 200# globe valve with normally open 2-10VDC actuator.	ME4830	V160	AV130-1.9	40/2.7	
VE160-4830-F-3.0	3.0	2.6	3/4"		ME4830	V160	AV130-3.0	30/2	
VE160-4830-F-6.3	6.3	5.4	1"		ME4830	V160	AV130-6.3	15/1	
VE162-4830-F-12.7	12.7	10.9	1 1/4"		ME4830	V162	AV132-12.7	60/4	
3 way 250# diverting with Unions all three ports:									
VE320-EPD1.0-4830	1.0	0.86	3/4"	3 way union diverting valve with norm. open 2-10VDC actuator. Unions Available 1/2", 3/4", 1" in NPT, BSPT, Solder.	ME4830	V320	EPD1.0	45/3	
VE320-EPD2.0-4830	2.0	1.72	3/4"		ME4830	V320	EPD2.0	45/3	
VE320-EPD3.5-4830	3.5	3.01	3/4"		ME4830	V320	EPD3.5	45/3	
VE345-4830-F-5.5	5.5	5.4	1"		ME4830	V345	AV345-5.5	15/1	
3 way 250# diverting with Solder Body:									
VE325-EPD1.0-4830	1.0	0.86	7/8"	3 way solder diverting valve with norm. open 2-10VDC actuator. For 3/8" use insert AV6312	ME4830	V325	EPD1.0	45/3	
VE325-EPD2.0-4830	2.0	1.72	7/8"		ME4830	V325	EPD2.0	45/3	
VE325-EPD3.5-4830	3.5	3.01	7/8"		ME4830	V325	EPD3.5	45/3	
4 way 250# diverting/ mixing with Unions all four ports:									
VE445-4830-F-2.3	2.3	2.0	1/2"	4 way union with normally open 2-10VDC actuator.	ME4830	V445	AV445-2.3	45/3	
VE445-4830-F-3.7	3.7	3.2	3/4"		ME4830	V445	AV445-3.7	30/2	

Spring-return Up Normally Open ME4830 actuators

The actuator base motors are of brushless, hysteresis type rated for continuous stall, and electronically controlled to reduce voltage in the holding sequence to reduce heat. Quadrant and stem link the gearmotor to the valve.

Ambient temperature rating is from 5°C (40°F) condensing to 40°C (105°F).

The modulating control circuit with LED pickup incorporates a startup sequence whereby the actuator drives end-to-end and back to locate the ends of travel. Thereafter the actuator automatically zeros the starting point and sets the span of operation. Optical pickup provides precise positioning and anti-dithering hysteresis of 0.2 VDC prevents hunting.

How to specify ME4330 actuated fail-in-last-position (non-spring return) control valves

Supply zone control valves of globe type construction complete with electronic microprocessor controlled actuators having dial type position indicators and knurled thumbnut quick-disconnect actuators.

The actuators shall be capable of micro accurate positioning action, capable of operating in ambient temperatures from 5°C (40°F) to 50°C (122°F), the complete assembly responding to a 2-10 VDC input signal. On loss of power, the valve shall fail in its last position. The base motor shall be capable of continuous stall plus torque-switch protected for best gear box life expectancy. The electronic microprocessor controller shall self zero the stem adjustment and shall self span the end travel. Drive time in either direction shall be 10 seconds end to end and the gear box and valve linkage shall be amperage protected against overload.

A full range of characterized valve bodies shall be available enabling correct selection for the duties required, and easy, in-line service elements, the packing, stem, plug and return spring all as a simple unscrewable element, easily replaceable from the top of the valve. The valves shall be available rated for either 125, 200 or 250 psig (Pn 8, 13 or 16) as required, each complete with union coupling, enabling simple valve removal in the event of line blockage, etc.

The entire assembly shall be as manufactured by Spartan Peripheral Devices.

How to specify spring return, normally open 2-10VDC modulating control valves

Supply zone control valves of globe type construction complete with electronic microprocessor controlled actuators and knurled thumbnut quick-disconnect actuators.

The actuators shall be capable of micro accurate positioning action through LED solid state pickup, the complete assembly responding to a modulating 2 - 10 VDC modulating input signal. On loss of power, the valve shall fail in its normally open position. The base motor shall be of reversible hysteresis, brushless action, capable of continuous stall plus time-out protected for cooler operation and best life expectancy. The electronic microprocessor controller shall self zero the stem adjustment and shall self span the end travel. Drive time in either direction shall be 10 seconds maximum end to end and the gear box and valve linkage shall be with IP51 protection against water ingress, capable of operating in ambient temperatures from 40°F (5°C) to 105°F (40°C).

A full range of characterized valve bodies shall be available enabling correct selection to suit the duties required, and easy, in-line service elements, the packing, stem, plug and return spring all as a simple unscrewable element, easily replaceable from the top of the valve. The valves shall be available rated for either 125, 200 or 250 psig (Pn 8, 13 or 16) as required, each complete with union coupling, enabling simple valve removal in the event of line blockage, etc.

The entire assembly shall be as manufactured by Spartan Peripheral Devices.