

Extra Compact Thermoelectric Actuators ME-1605 NO and ME-1705 NC

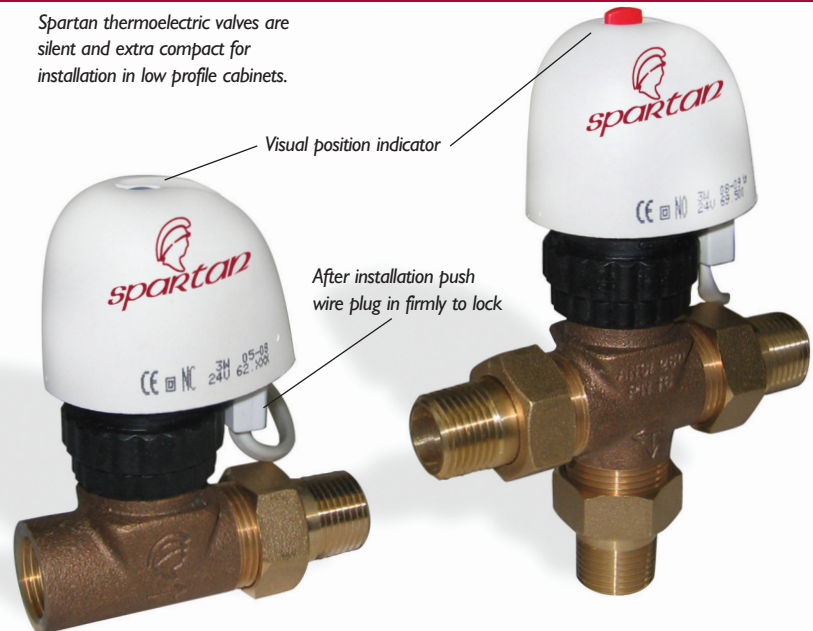
5 YEAR WARRANTY
SPARTAN PERIPHERAL DEVICES

These two-way, three-way and 4 ported zone control valves all use a simple time proven thermo-electric actuator operating on the principle of the expansion of refined wax when heated through its melting point. They are silent, extremely compact, inherently fail safe (open or closed) and operate on steam to 15PSI temperatures.

Principles of Operation

Spartan's thermoelectric actuators utilize a highly refined wax filled element with piston/stem and patented packless elastomer seal. A PTC (positive-temperature-coefficient) semi-conductive disc is both temperature control and heat source, inherently controlling at 90°C (194°F). The wax is chemically refined to melt at 70°C (158°F). The element expands in direct proportion to the amount of wax melted, driving the stem through its travel to close (or open) the valve. No other travel or thermostatic switches are required. Life expectancy is therefore in multiple decades and unconditionally guaranteed by Spartan Peripheral Devices for 5 years. For 230Vac, 50/60Hz versions choose models ME-1625 and ME-1725.

Spartan thermoelectric valves are silent and extra compact for installation in low profile cabinets.



Actuator Models: ME-1605, ME-1705

General Specifications

- Supply Voltage:** 24Vac or Vdc $\pm 10\%$, 50/60Hz
- Running Power Consumption:** 3W or 4.3VA
- Holding Power Consumption:** 1.3W or 2.1VA
- Connection:** 1m/40" PVC Cable (optional UL Plenum cable available)
- Ambient Temperature:** 5°C/40°F to 50°C/120°F
- Stroke:** 4.0mm
- Running Time to open or close:** 210 seconds in each direction
- Enclosure:** IP54 at vertical installation
- End of travel cut-off:** PTC
- Tactile position indicator**
- Maintenance free**
- Agency approval:** Conforms to CE/ROHS requirements Class 2 as per UL/CSA
- Bayonet connection engaged with a click:** For ease of installation in tight spaces

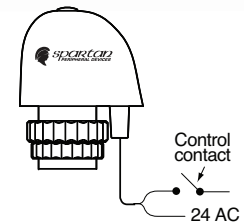
ME-1605 NO Technical Data

- Direct Acting:** 2-wire control
- Spring Return:** Normally open, stem up, red position indicator
- Control Input:** on/off or PWM
- Stem Force:** 25lbs, 110N

ME-1705 Technical Data

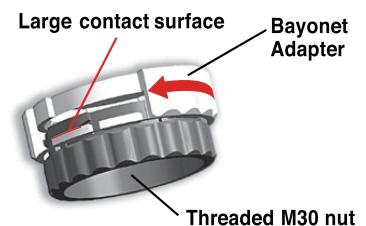
- Reverse Acting:** 2-wire control
- Spring Return:** Normally closed, stem down, blue position indicator
- Control Input:** on/off or PWM
- Stem Force:** 27lbs, 120N

Wiring Diagram



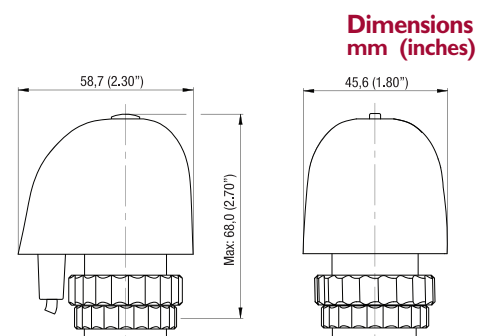
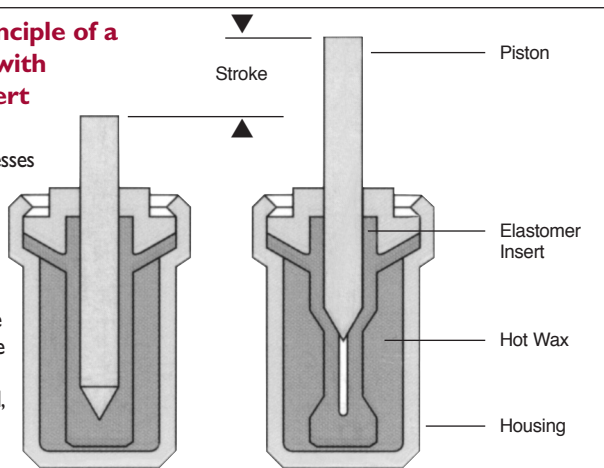
Quick Bayonet Coupling

The ME-1605 and ME-1705 Extra Compact Thermoelectric Actuators are designed for quick and easy attachment release with 4 x large contact surfaces inter-locking into the threaded M30 nut.



Operating principle of a wax element with elastomer insert

Wax elements, their manufacturing processes and their application to regulation have been proven for decades. Even the most sophisticated requirements can be met using this simple yet extremely cost-effective, precise and, above all, reliable technology.



Spartan Control Valve Assemblies with Extra Compact Thermoelectric Actuators ME-1605, ME-1705

Valve Body	Description	Size	*Cartridge CV selection	Actuator ME1605 24Vac Spring Open	EP Cartridge Max. Close-off PSI / Bar	EB Cartridge Max. Close-off PSI / Bar	Actuator ME1705 24Vac Spring Closed	EP Cartridge Max. Close-off PSI / Bar	EB Cartridge Max. Close-off PSI / Bar
V240 - 2 way valve body - union connection both ports									
V240-12X	2 Unions in-line - Select 1/2" or 3/4"		BC-0.15,0.25	VE240-BCXX-1605	60 / 4.0	-	VE240-BCXX-1705	60 / 4.0	-
V240-34X	unions, solder S or threaded N		(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE240-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE240-EP/EBXX-1705	45 / 3.0	100 / 6.5
V241 - 2 way valve body - female port in, X union connection port out									
V241-12	Single Union Straight	1/2"	BC-0.15,0.25	VE241-12-BCXX-1605	60 / 4.0	-	VE241-12-BCXX-1705	60 / 4.0	-
V241-12	Female port in	1/2"	(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE241-12-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE241-12-EP/EBXX-1705	45 / 3.0	100 / 6.5
V241-34	Male union out	3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE241-34-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE241-34-EP/EBXX-1705	45 / 3.0	100 / 6.5
V243 - 2 way valve body - female port in, X female port out									
V243-12	Female by Female Port	1/2"	BC-0.15,0.25	VE243-12-BCXX-1605	60 / 4.0	-	VE243-12-BCXX-1705	60 / 4.0	-
V243-12	Straight	1/2"	(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE243-12-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE243-12-EP/EBXX-1705	45 / 3.0	100 / 6.5
V243-34		3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE243-34-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE243-34-EP/EBXX-1705	45 / 3.0	100 / 6.5
V243-10		1"	EB-6,0,6,4,8,0,9,0	VE243-10-EBXX-1605	50 / 3.4	100 / 6.5	VE243-10-EBXX-1705	60 / 4.0	100 / 6.5
V245 - 2 way valve body - female port in, X female port out									
V245-12	Direct solder body	1/2"	BC-0.15,0.25	VE245-12-BCXX-1605	60 / 4.0	-	VE245-12-BCXX-1705	60 / 4.0	-
V245-12		1/2"	(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE245-12-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE245-12-EP/EBXX-1705	45 / 3.0	100 / 6.5
V245-34		3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE245-34-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE245-34-EP/EBXX-1705	45 / 3.0	100 / 6.5
V260 - 2 way angle valve body - double union OR V261 - 2 way angle valve body - single union									
V260M261-12	Angle body	1/2"	(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE26X-12-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE26X-12-EP/EBXX-1705	45 / 3.0	100 / 6.5
V260M261-34	Single Union	3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE26X-34-EP/EBXX-1605	35 / 2.4	100 / 6.5	VE26X-34-EP/EBXX-1705	30 / 2.0	100 / 6.5
V320 - 3 way diverting valve body - unions on all three ports OR V321 - 3 way mixing valve body - unions on all three ports									
V320M321-12X	3 Way Diverting - Select 1/2" or 3/4"		ED1.0,2,0,3,0	VE32X-12-EDXX-1605	30 / 2.0	-	VE32X-12-EDXX-1705	30 / 2.0	-
V320M321-34X	unions, solder S or threaded N		ED1.0,2,0,3,0	VE32X-34-EDXX-1605	30 / 2.0	-	VE32X-34-EDXX-1705	30 / 2.0	-
V345-34		3/4"	CV5.5	VE345-34-5-5-1605	30 / 2.0	-	VE345-34-5-5-1705	30 / 2.0	-
V345-10		1"	CV5.5	VE345-10-5-5-1605	30 / 2.0	-	VE345-10-5-5-1705	30 / 2.0	-
V323 - 3 way diverting valve body - Female thread all ports									
V323-12	Female thread	1/2"	ED1.0,2,0,3,0	VE323-12-EDXX-1605	30 / 2.0	-	VE323-12-EDXX-1705	30 / 2.0	-
V325 - 3 way diverting valve body - direct solder									
V325-12	3 Way Diverting	1/2"	ED1.0,2,0,3,0	VE325-12-EDXX-1605	30 / 2.0	-	VE325-12-EDXX-1705	30 / 2.0	-
V325-34	Direct Solder	3/4"	ED1.0,2,0,3,0	VE325-34-EDXX-1605	30 / 2.0	-	VE325-34-EDXX-1705	30 / 2.0	-

*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.
For 220Vdc models use ME1625 and ME1725