

Compact Thermoelectric Actuators ME-I 607, ME-I 707, and ME-I 707S



Principles of Operation

Spartan's thermoelectric actuators (MEI607 normally open, MEI707 normally closed, MEI707S normally closed with switch) utilize a highly refined wax filled element with piston/stem and patented packless elastomer seal. They are silent, extremely compact, inherently fail safe and can operate on hot and cold water, and low pressure steam to 15PSI. 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 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.

Spartan Valve Bodies

These actuators can be installed on a multitude of Spartan 2 way & 3 way terminal unit control valve bodies with different types of connections. Choose from V240, V241, V243, V245, V246-12F, V243-12I, V320, V321, V323, V325, V420 series of zone valve bodies.

See Zone Valve Bodies Data Sheet.



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

Technical Data

Operating voltage: 24 VAC/DC +20%...-10%, 2W, 50/60Hz
230VAC, ±10%, 1.8W, 50/60Hz

Max. inrush current: < 300 mA during max. 2 min.

Operating power: 8mA for 230V, 85mA for 24V

Stroke (actuator travel): 4.5 mm

Running time: to open or close is 210 seconds

Actuating force: 100 N ±5%

Switching current for MEI 707S/MEI 727S micro switch: 230 VAC, 5 A

Switching point of MEI 707S/MEI 727S micro switch: NC approx. 2 mm

Fluid temperature: 0 to +100°C

Storage temperature: -25 °C to +60°C

Ambient temperature: maximum 60°C

Cable length: 1 m

Weight with connecting cable (1 m): approx. 150 g

Conformity

Surge protection according to: EN 60730-1 min. 2.5 kV

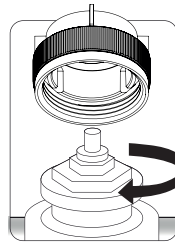
Degree / class of protection: IP 54

CE conformity according to: EN 60730

Power supply: Class II as per UL/CSA

Conforms to ROHS

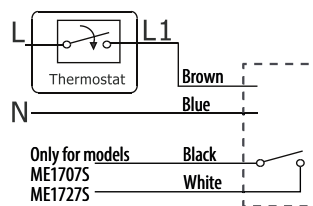
Installation



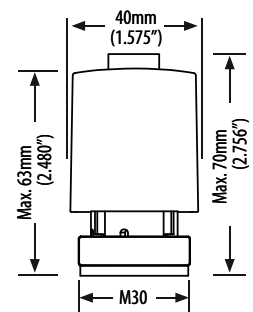
Ordering Information

Part No.	Description
MEI607	Normally Open 24V
MEI707	Normally Closed 24V
MEI707S	Normally Closed with switch 24V
MEI627	Normally Open 230V
MEI727	Normally Closed 230V
MEI727S	Normally Closed with switch 230V

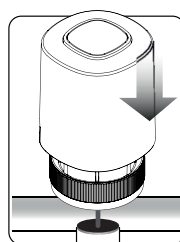
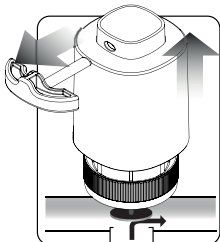
Power Connection



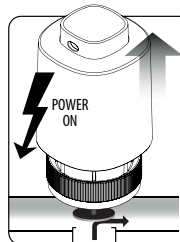
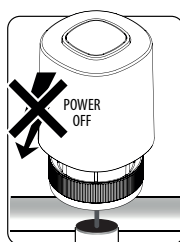
Dimensions



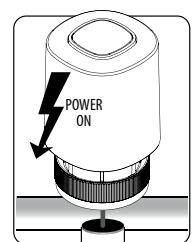
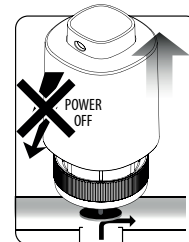
First Open Function NC



Operation Normally Closed



Operation Normally Open



Maximum close-off pressures for Thermoelectric Actuators ME-1607, ME-1707, ME-1707S

Valve Body	Description	Size	*Cartridge CV/KV selection	Actuator ME1607, ME1707, ME1707S	EP Cartridge Max. Close-off PSI / Bar	EB Cartridge Max. Close-off PSI / Bar
V240 - 2 way Straight valve body - union connection both ports						
V240-12X	2 Unions in-line - Select 1/2" (12) or 3/4" (34)		BC-0.15,0.25 (EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5 (EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE240-BCXX-1607/1707/1707S VE240-EP/EBXX-1607/1707/1707S VE240-EP/EBXX-1607/1707/1707S	60 / 4.0 60 / 4.0 45 / 3.0	- - 100 / 6.8
V241 - 2 way Straight valve body - threaded female port in, X union connection port out						
V241-12	Single Union Straight	1/2"	BC-0.15,0.25	VE241-12-BCXX-1607/1707/1707S	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-1607/1707/1707S	45 / 3.0	100 / 6.8
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-1607/1707/1707S	45 / 3.0	100 / 6.8
V241-10		1"	EB-6.0,6.4,8.0,9.0	VE241-10-EP/EBXX-1607/1707/1707S	-	100 / 6.8
V243 - 2 way Straight valve body - threaded female port in, X threaded female port out						
V243-12	Female by Female Port	1/2"	BC-0.15,0.25	VE243-12-BCXX-1607/1707/1707S	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-1607/1707/1707S	45 / 3.0	100 / 6.8
V243-34		3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE243-34-EP/EBXX-1607/1707/1707S	45 / 3.0	100 / 6.8
V243-10		1"	EB-6.0,6.4,8.0,9.0	VE243-10-EBXX-1607/1707/1707S	-	100 / 6.8
V245 - 2 way Straight valve body - solder female port in, X solder female port out						
V245-12	For 5/8" copper pipe	1/2"	BC-0.15,0.25	VE245-12-BCXX-1607/1707/1707S	60 / 4.0	-
V245-12	For 5/8" copper pipe	1/2"	(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE245-12-EP/EBXX-1607/1707/1707S	45 / 3.0	100 / 6.8
V245-34	For 7/8" copper pipe	3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE245-34-EP/EBXX-1607/1707/1707S	45 / 3.0	100 / 6.8
V260 - 2 way Angle valve body - double union OR V261 - 2 way angle valve body - threaded female port in, union connection port out						
V260/V261-12	Angle body	1/2"	(EP or EB)-0.50,1.0,1.5,2.0,2.5,3.5	VE26X-12-EP/EBXX-1607/1707/1707S	45 / 3.0	100 / 6.8
V260/V261-34	Single or Double Union	3/4"	(EP or EB)-1.0,1.5,2.0,2.5,3.5,4.5	VE26X-34-EP/EBXX-1607/1707/1707S	45 / 3.0	100 / 6.8
V261-10		1"	EB-6.0,6.4,8.0,9.0	VE26X-10-EP/EBXX-1607/1707/1707S	-	100 / 6.8
V320 - 3 way Diverting valve body - unions on all three ports						
V320-12X	3 Way Diverting - Select 1/2" or 3/4"		ED1.0,2.0,3.0,3.5	VE320-12-EDXX-1607/1707/1707S	50 / 3.4	-
V320-34X	unions, solder S or threaded N		ED1.0,2.0,3.0,3.5	VE320-34-EDXX-1607/1707/1707S	50 / 3.4	-
V345-34			CV5.5	VE345-34-5-5-1607/1707/1707S	50 / 3.4	-
V345-10			CV5.5	VE345-10-5-5-1607/1707/1707S	50 / 3.4	-
V321 - 3 way Mixing valve body - unions on all three ports						
V321-12-EM3.5	Sei 1/2" or 3/4" unions S or N	1/2", 3/4"	3.5	VE321-12-EM3.5-1607/1707/1707S	50 / 3.4	-
V323 - 3 way Diverting valve body - thread female all ports						
V323-12	Female thread	1/2"	ED1.0,2.0,3.0	VE323-12-EDXX-1607/1707/1707S	50 / 3.4	-
V325 - 3 way Diverting valve body - direct solder						
V325-12	For 5/8" copper pipe	1/2"	ED1.0,2.0,3.0,3.5	VE325-12-EDXX-1607/1707/1707S	50 / 3.4	-
V325-34	For 7/8" copper pipe	3/4"	ED1.0,2.0,3.0,3.5	VE325-34-EDXX-1607/1707/1707S	50 / 3.4	-

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