



VM400, VM800, VM1500
Electric Actuators
Non-Spring Return

VM400, VM800, VM1500 are electric actuators for use on Paxton valves and similar globe valves from other manufacturers. They feature direct coupling of the actuator to the valve and self-adjusting stroke.

The Vdc inputs can be changed to accept 0/4 - 20 mA signals by placing a 500 ohm resistor across the input terminals.

In modulating mode a pair of actuators may be sequenced by setting one to operate over the lower half of the control signal and the other to operate over the upper half. Two actuators can also be connected in parallel.

The full modulating signal applies to the actual stroke of the valve which the actuator determines with automatic stroke adjustment.

3-point floating mode is selected by DIP switch setting.

All models can be manually operated with an override knob located on the underside of the housing.



Technical Data

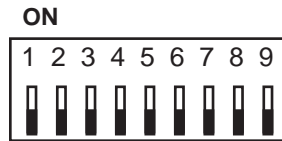
Power	VM400	6 VA @ 24 Volts ac ± 10%
	VM800	15 VA @ 24 Volts ac ± 10%
	VM1500	24 VA @ 24 Volts ac ± 10 %
Outputs		16 Vdc aux. power max 25 mA 0/2 - 10 Vdc feedback
Modulating input		0 - 10 Vdc or 2 - 10 Vdc at 100 K ohms impedance 0 - 20 mA or 4 - 20 mA with 500 ohm resistor (incl.)
Floating input		24 Vac @ 5 mA minimum pulse 20 milliseconds
Stem Force		
	VM400	90 lb. 400 N
	VM800	180 lb 800 N
	VM1500	335 lb 1500 N
Stroke	VM400	3/8" - 1 1/4"
	VM800 & VM1500	3/8" - 2"
Running time floating		60 sec or 300 sec
Running time modulating		
	VM400	60 sec
	VM800 & VM1500	20 sec for 3/4" stroke
Temperature Limits		
Storage		-10° F - 160° F -23° C - 70° C
Operating		15° F - 160° F -10° C - 70° C
Humidity Limit		max 90% RH
Material		
	Housing	Aluminum, unpainted
	Cover	ABS/PC, black

Ordering

Model	Stem Force	Auxiliary Switch
VM400	90 lbs	no
VM400-2S	90 lbs	2 spdt
VM800	180 lbs	no
VM800-2S	180 lbs	2 spdt
VM1500	335 lbs	no
VM1500-2S	335 lbs	2 spdt

Operation

The operating mode of the actuator is set by a row of switches on the circuit board. The operating mode can be changed by turning the power off and resetting the switches.



Factory default: All switches OFF

Dip Switch Settings

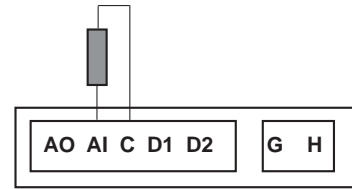
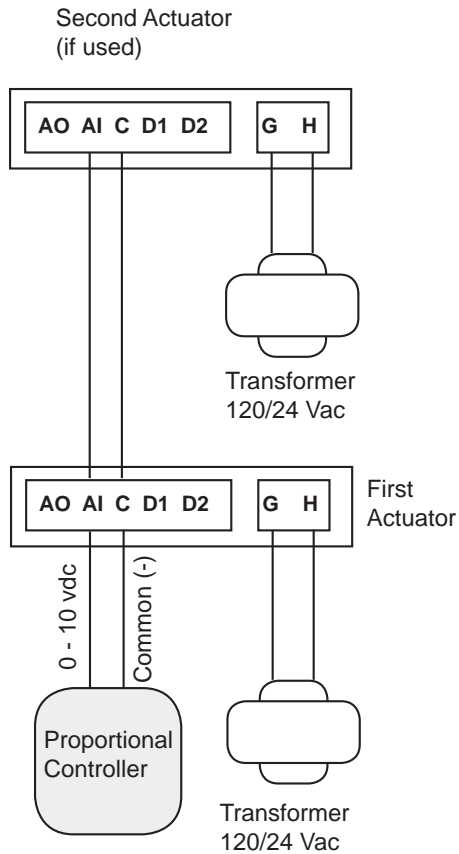
Switch	OFF	ON
1	Actuator stem retracts on start-up	Stem extends on start-up
2	Modulating 2 - 10 Vdc or 0 - 10 Vdc Signal	3 point floating (see also switch 5)
3	Full range control signal	Split range control signal
4	0 - 10 volt control signal (0 - 20 mA)	2 - 10 volt control signal (4 - 20 mA)
5	0- 5 (2-6) volt split range control signal	5 - 10 (6-10) volt split range control signal
6	60 seconds full travel time in floating mode (switch #2 on; otherwise no effect)	300 seconds travel time in floating mode (switch #2 on; otherwise no effect)
7	Travel direction; stem down on increasing signal (modulating mode only)	Stem up on increasing signal
8	Linear motion proportional to signal.	Changes valve characteristic: converts equal percentage valves to linear and linear valves to quick opening.
9	Normal operation	Valve stroke adjustment. With switch 9 ON momentarily, the actuator self-adjusts to the stroke of the valve.

Wiring Terminal Markings

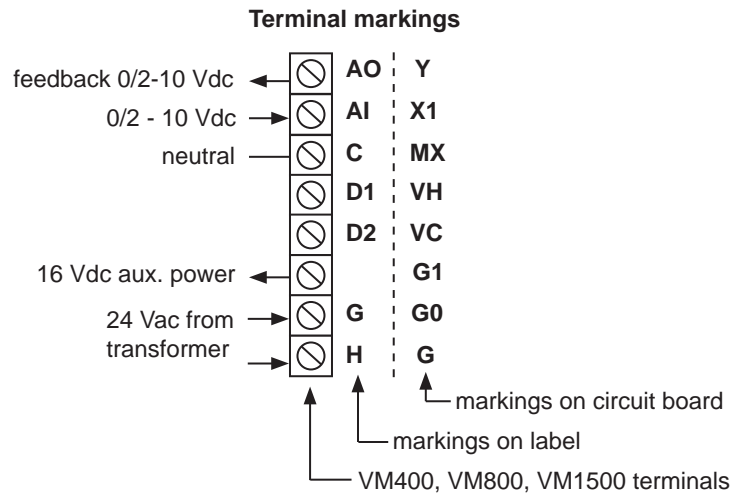
New (Label)	Old (On circuit board)		
AO	Y	Feedback signal	2 - 10 Vdc
AI	X1	Input signal	0 -10 or 2 - 10 Vdc
C	MX	Input neutral	0 Vdc
D1	VH	Floating input signal stem up	24 Vac
D2	VC	Floating input signal stem down	24 Vac
*	G1	Power output for tac devices	16 Vdc
H	G	Power in	24 Vac
G	GO	Power & signal neutral	24 Vac

*/ This terminal is blank on the new label

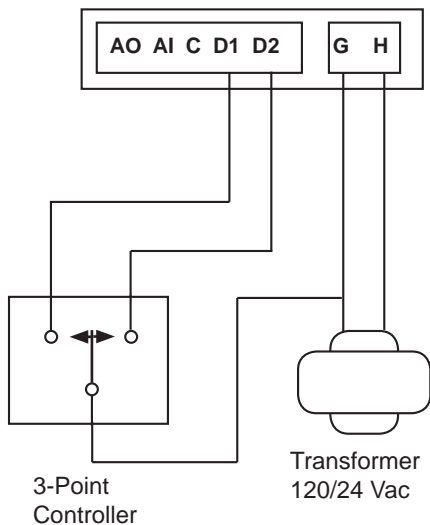
Proportional Control



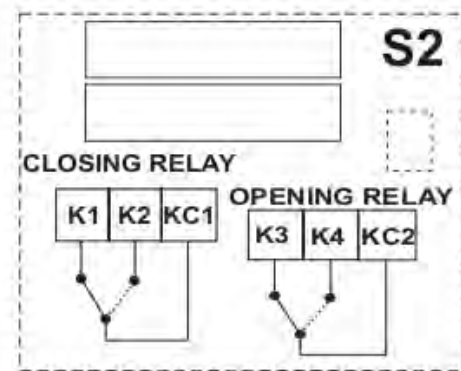
Add a 500 ohm resistor (included) when using a mA control signal.



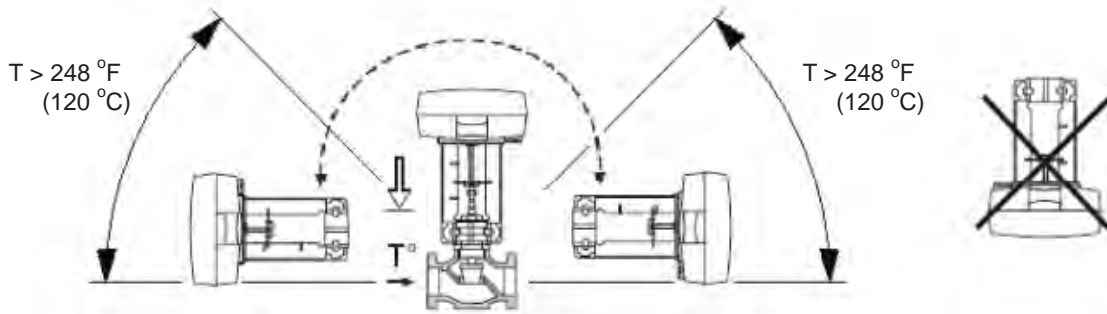
3-point floating Control



Auxiliary Switches



Switches are only available in the -2S models



Mounting

The actuator may be mounted in any position from horizontal to vertical. Do not install with the actuator lower than the valve.

If the fluid temperature exceeds 248° F (15 psi steam) the actuator must be mounted at least 45° from vertical.



VM800 on V43
Stainless steel valve

