



## For 3-Wire Floating or Proportional Control of 15 to 200 mm Globe Valves

### General

MVF actuators are controlled by an increase/decrease signal or by a modulating 0–10 V control signal. Modulating control allows a faster actuator positioning. The brushless motor of the actuator turns a screw via a gear wheel. When the motor receives a control signal from a controller, the screw gets a linear movement, which moves the valve stem. The electronic circuitry of the actuator ensures that the running time is the same, regardless of the valve stroke. The working range of the actuator is adjusted automatically depending on the valve stroke, while the electronic circuitry of the actuator carries out the adjustment of the valve end positions.

### Accessories

AG52 Linkage kit for V.B threaded valves DMVF  
Microswitches

244 Stem heater (24Vac-18W) for valves having AG52

248 Stem heater 24 V~, 50 W (for applications with fluid temperature <-10 °C)

MVLS5 Accessory for 4±20 mA control signal.



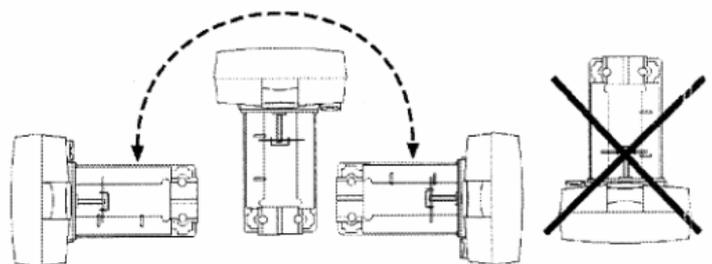
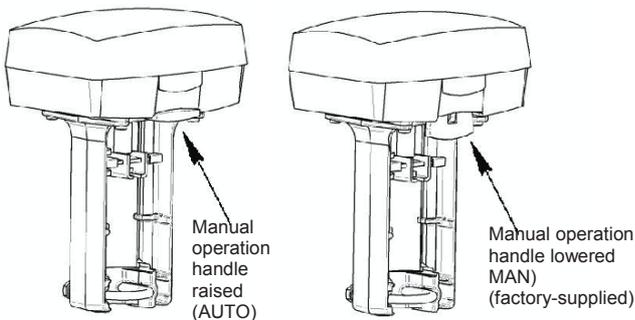
### Feedback Signal

MVF actuators are equipped with a 2–10 V DC position feedback signal, where 2 V always corresponds to the closed position and 10 V to the open position.

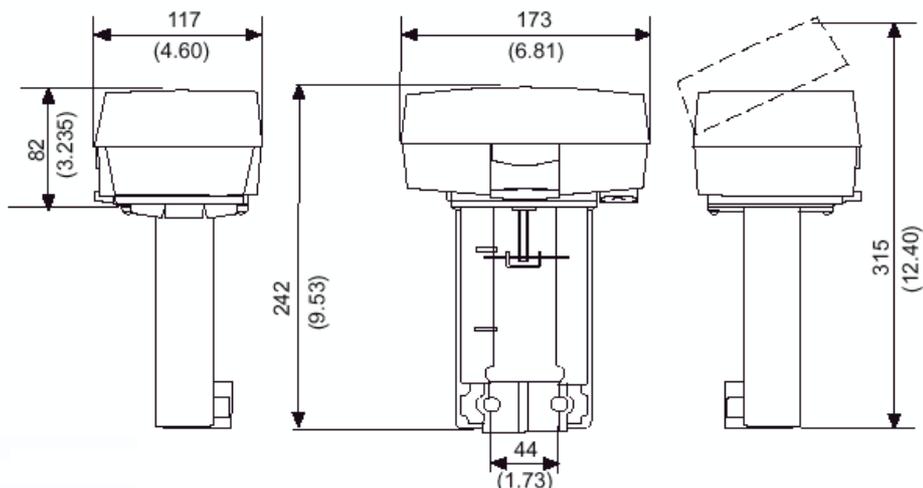
### Mounting

The actuator can be mounted horizontally, vertically and in any position in between, but **not** upside down.

To mount the actuator on a valve, slide the actuator onto the valve neck, thus making the square nut on the valve spindle fit into the groove on the cross bar. Then slide the brace into the groove on the valve neck and secure the nuts.



## Dimensions in mm



## Technical Information

Power supply	24 Vac +25%/-20%
Power consumption	6 VA (MVF54) 15 VA (MVF58) 24 VA (MVF515)
Transformer sizing	30 VA (MVF54) 50 VA (MVF58-515)
Stroke time with proportional control:	
MVF54	60 s
MVF58/MVF515:	9-24 mm stroke 15s 5-32 mm stroke 20s 33-52 mm stroke 30s
Proportional stroke time: (increase/decrease)	300 s / 60 s
Stroke	9-32 mm (MVF54) 9-52 mm (MVF58-515)
Factory set stroke	20 mm
Analogue input:	
Voltage	0-10 V
Impedance min.	100 kOhm
VH-VC digital inputs:	
Voltage across open input	24 Vac
Current through closed input	5 mA
Pulse time	min. 20 ms
Output G1	Voltage 16 V DC $\pm 0,3$ V Load 25 mA, protection against short-circuit
Output Y	Voltage 2-10 V (0-100%) Load 2 mA
Ambient temperature	
Operation/storage	-10T 50 °C
Ambient humidity	90% R.H .max.
Protection degree	IP 54
Sound power level	32 dBA max (MVF54) 40 dBA max (MVF58-515)
Material	
Housing	aluminium
Cover	ABS/PC plastic
Colour	aluminium/blue
Weight	1.8 kg

## Installation

Before installing it is necessary to remove the antistatic protection placed under the cover. The switches on the circuit board should be set before the actuator is installed. There are no other switches or potentiometers to be set or adjusted. To make an end position adjustment, it is sufficient to switch the "OP/ADJ" switch into its ADJ position, when the supply voltage has been turned on, and then back to its OP position. When an end position adjustment is made, MVF closes the valve and opens it fully. The adjustment is complete when the actuator closes the valve again; the electronic circuitry then adjusts the valve stroke and running time. The set values are stored in the EEPROM of the actuator so that they remain after a loss of voltage. When the end position adjustment is complete, the actuator starts to control the valve according to the control signal.

## End Switches

When actuators are controlled in sequence, it is possible to use the end switches with preset positions. They switch on or off when the valve is, respectively, fully open or fully closed. For further details about the switches see the MVF actuators mounting instructions (DIM064E).

## Cables

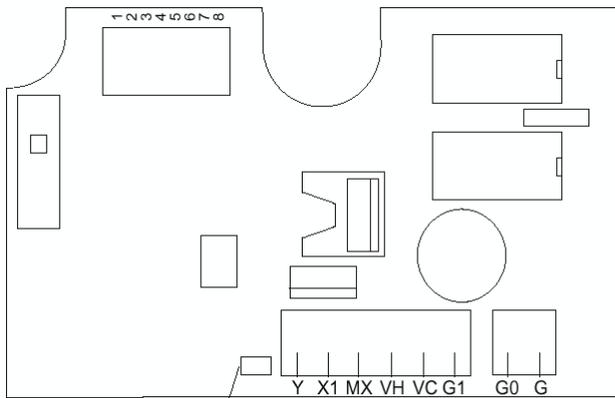
The cables to G, G0 and G1 should be max. 100 m (328 ft.) and have a cross-sectional area of min. 1.5 mm<sup>2</sup> (AWG 16).

Other cables should be max. 200 m and have a cross-sectional area of min. 0.5 mm<sup>2</sup> (AWG 20). The actuator is provided for three M20 conduits opening application.

### Note

In 3-wire installations, where the control signal reference is connected to G0, the actuator motor current will cause varying voltage loss in the cable and, therefore, in the reference level. MVF, which is equipped with a highly sensitive control signal input, will detect the varying signal and follow it, making difficult for the actuator to find a stable position. This variation and therefore the 3 wires connection can be accepted in simplified installations on the following conditions: the cables between the controller and actuator are shorter than 100 m, the cross-sectional area is larger than 1.5 mm<sup>2</sup> (AWG 16) and the cables must be connected to one actuator only.

### Electrical Board



TERMINAL BOARD

Terminal Board	Operation	Description
G G0	24 VAC L 24 VAC N	Power supply
X1 MX	input + input -	0~10 VDC
VH VC	Opening input Closing input	3-wire signal G0
G1 G(0)	16 VDC Common	25 mA Power supply
Y G(0)	2~10 VDC Common	Status indication (0~100%)

### Wiring Diagrams

