MVH

MODEL	STROKE TIME [s] FOR CONTROLLI VALVES (*)			POWER SUPPLY [Vac]	CONTROL
	16.5 mm (0.6")	25 mm (1.0")	45 mm (1.8")		
MVH26	22	33	60	230 Vac	3p
MVH36				24 Vac	pot.
MVH46					3p
MVH56					prop.
MVH36A					pot.
MVH36C					

Note: MVH36A/C models are fitted with spring return device

(*) The time for 1 mm joint movement is 1.33 s. For timing related to different strokes use the following formula:
time [s] = 1.33 x stroke [mm].

APPLICATION AND USE

MVH actuators have linear characteristic (linear ratio between input signal and valve coupling joint movement). They are used for fluid control in air-conditioning-heating systems and in industrial processes.

Three different control types are available:

- floating (3p)
- 165 Ohm proportional potentiometric (pot.)
- proportional (d.c. voltage or current)

They are designed for direct coupling on factory flanged globe valves (add AG62 linkage for V.B valves) and they can also be easily used on other manufacturers' valves with 10..45 mm (0.4..1.8") stroke for floating action models or 10..45 mm (0.4..1.8") stroke for proportional action models.

OPERATION

Actuators are fitted with an asynchronous bidirectional motor and with a torque limit device that makes the actuators self-adjusting on valves with a different stroke, ensuring - moreover - a constant force to the valve mechanical stroke-ends regardless of their position. Voltage/current proportional models are also provided with both a feedback output signal indicating valve position and a device to select direct or reverse action.

All models are equipped with a manual control in order to override the actuator in case of control and/or power supply failure.

Note: do not use the actuator disassembled from the valve.

MANUFACTURING CHARACTERISTICS

The actuator consists in a die-cast aluminum housing, which includes mounting bracket and removable fire resistant terminal cover with captive bolts and a reduction gears supported by ball bearings.

Movement is transmitted to a rack-and-pinion mechanism to which, through a suitable joint, the valve stem is connected.

Internal electronic card with easily accessible terminals for electrical connections. Micro end-switches operated by a torque limit device. Manual knob in thermoplastic material, fitted on the front side.

The actuator is maintenance-free.

TECHNICAL CHARACTERISTICS

Power supply:	24 Vac +/-10%; 230 Vac +/-10% (only MVH26)
Consumption:	12 VA
Dimensioning:	15 VA
Frequency:	50-60 Hz
Stroke:	MVH26/46: 0-45 mm (0-1.8"); MVH36/56: 10-45 mm (0.4-1.8");
Stroke time:	see model table
Force:	MVH: 1500 N (337.2 lbf); MVHA/C: 700 N (157.4 lbf);
Temperature:	
- operation:	-15 to 50°C (5 to 122°F)
- storage:	-25 to 65°C (-13 to 149°F)
Allowed room humidity:	Class R according to DIN 40040;
Terminals:	screw-type for wires from 1.5 to 2.5 mm2 max.
N. 2 cable gland:	Rubber-made punchable on hole D=20 mm, to be replaced by PG 13.5 compression glands
Protection degree:	IP55 DIN 40050 (IEC 529); for rooms with high pollution according to IEC 730-1(93)/6.5.3
Weight:	MVH: 3 kg (6.6 lb); MVHA/C: 4 kg (8.8 lb);
Control signal:	
- 3-point control:	2 SPST contacts
- prop. control:	potentiometric 165 Ohm
- voltage (max 0.1mA):	8-11 Vdc, 4-7 Vdc, 6-9 Vdc / 0-10 Vdc, 2-10 Vdc, 1-5 Vdc/ 0-16 Vdc;
- current (250Ohm):	4-20 mA
Outputs indication (solo	per MVH36/56):
- voltage:	0-10 Vdc (2 mA max); 10-0 Vdc(2 mA max);
- current:	0-200µA;

The product complies the following directives:
EMC 2014/30/UE according to EN61326-1 (emission and immunity)
LVD 2014/35/UE according to EN61010-1

POSSIBLE COMBINATIONS AND CONNECTIONS

All actuators can be connected to any controller, providing that the relevant output signal complies with the requirements at "Technical Characteristics" paragraph. Install a protection device compliant to existing rules with a 125 mA intervention threshold and a minimum 3mm contact opening on the power supply line. The device is not supplied with the product.

ACCESSORIES

244 Stem heater for valves with AG62 *
248 Stem heater 24 V~, 50 W (for applications with fluid temperature <-10 °C) *
AG62 Linkage kit for VMB and VSB valve assembly DMVH 2 auxiliary microswitches (SPDT 10 (3)A-250 V~) adjustable on the whole stroke. Microdisconnection type 1B according to IEC 730-1(93)/6.4.3.2
MVHPA2 Electronic card with 1kOhm auxiliary potentiometer for MVH26
MVHPA4 Electronic card with 1kOhm auxiliary potentiometer for MVH46

To state the max. resistance value among

STROKE [mm (inch)]	WHEEL COLOR	AUX. POTENTIOMETER MAX. VALUE
16.5 (0.6")	Grey	1000 Ohm
25 (1.0")	White	700 Ohm
45 (1.8")		1000 Ohm

MVHT Valve body-actuator spacer reducing the actuator direct exposure in case of installation with high-temperature fluids.

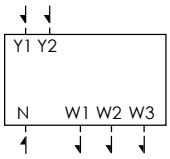
Dimensions: Ø 120 mm; h = actuator height + 102 mm
Dimensions: Ø 4.7"; h = actuator height + 4.0"

GMVH Thermal insulation for MVH actuators *

** It is not possible to install both thermal insulation (Gxxxx) and stem heaters.*

TERMINAL BOARDS

MVH26 (230 Vac)
MVH46 (24 Vac)

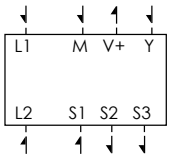


Power supply control | N-Y1 (**) N-Y2 (***)

(**) Joint moves upwards
(***) Joint moves downwards

W1 W2 W3 | Auxiliary potentiometer MVH 26/46

MVH36/56 (24 Vac)
MVH36A/C (24 Vac)



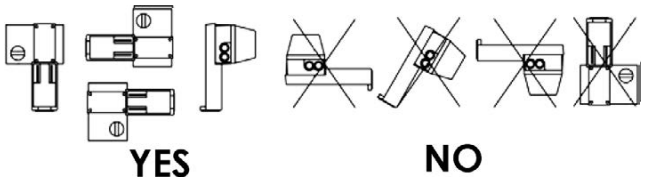
L1 Phase
L2 Neutral | 24V~ ±10% power supply

M Common
V+ +15 V Output
Y Control signal (2) | (1)

S1 Analogue common
S2 0..10V or 0..200uA
S3 10..0V or 200..0uA | (3)

INSTALLATION AND MOUNTING

The actuator can be mounted in the positions shown below. It is advisable to equip the motorized valve with MVHT spacer, in order to reduce the actuator working temperature in case of fluids at high temperatures (approximately > 120°C) in the valve body. For fluids over 160°C avoid mounting the actuator in vertical position on the valve so as to avoid the direct exposure to heat sources. Carry out the electrical connections by removing the cover, in compliance to existing standards. For valve mounting, follow the assembly instructions inside the package. If the equipment is used improperly, the protection provided by the device can be damaged.



Model with proportional signal (MVH56)

These actuators are factory supplied with 0-10Vdc control signal. To select different ranges, the jumper on SW1 should be moved from the position set to the one desired (see figure on the right). For 4-20mA range, it is necessary to position on SW2 both the SW1 jumper and the jumper set in DIP position.

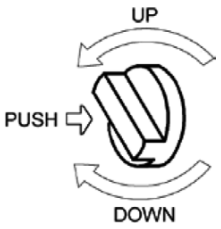
In order to select the rotation direction, move the SW3 jumper from A to C position.

Model with electronic card for proportional-potentiometric signal (MVH36)

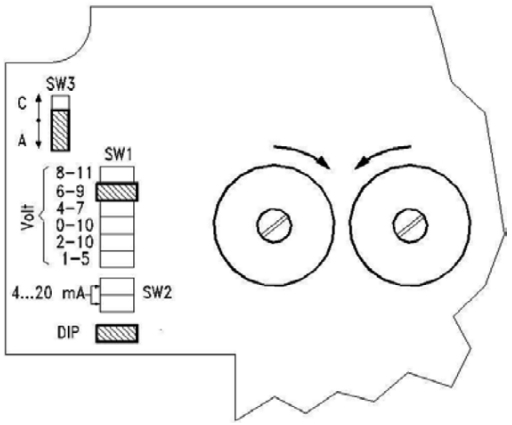
To reverse the rotation direction, exchange the connections at M and V+ terminals.

MANUAL OVERRIDE OPERATION

The manual control can be activated only after disconnecting power supply. To use the manual control, it is necessary to push and hold down the knob; turn clockwise to move the valve stem downwards and counter clockwise to move it upwards (see below). Be careful not to force the manual control when the actuator stroke end is reached.



ELECTRONIC BOARD



DIMENSIONS [mm (inch)]