

Model	Power supply	Control	Valve stroke [mm]	Stroke time [s]		
				With motor	Spring return with load	Spring return without load
MVH56FA MVH56FC	24V ac/dc	floating or prop.	16,5	17	23	15
			25	25	35	23
			45	48	64	41



All models are fitted with spring return device:

- A: spring return with retracted joint (valve stem up)
- C: spring return with protruding joint (valve stem down)

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

APPLICATION AND USE

MVH.FA/C actuators have linear characteristic (linear ratio between input signal and valve coupling joint movement). They are used for fluid control in air-conditioning and heating systems and in industrial processes. The control signal can be set as proportional or floating by acting on the dip switches. They are designed for direct coupling on all CONTROLLI globe valves and they may also be used easily on other manufacturers' valves having different stroke between 9 and 50mm.

OPERATION

The actuators are equipped with bidirectional electrical motor; they self-adjust if the valves have different stroke, granting a constant torque at the valve mechanical stroke ends regardless of their position.

They are provided with a spring device which, in case of power loss, makes the actuator return to the rest position.

All models are also provided with a feedback output signal indicating valve position.

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

MANUFACTURING CHARACTERISTICS

The actuator consists in a die-cast aluminium housing, which includes the mounting bracket for connection to valve body.

Reduction gears supported by ball bearings. Movement is transmitted to a rack-and-pinion mechanism connected to the valve stem through a suitable joint.

Internal electronic card with easily accessible terminals for electrical connections. Spring return device consisting of a flat spring placed outside the main shaft.

The actuator is maintenance-free.

TECHNICAL CHARACTERISTICS

Power supply:	24Vac +25% -20%; 24Vdc ±20%;
consumption:	17VA/ 7W*;
dimensioning:	30VA;
frequency:	50-60Hz;
stroke:	9-50mm;
stroke time:	see available models;
force:	700N;
operation temp.:	-15T50°C;
storage temp.:	-25T65°C;
allowed room humidity:	Class R according to DIN 40040;
terminals:	screw-type, 1,5mm ² wires;
n. 2 cable glands:	plastic punchable, replaceable by PG 13,5 compression glands;
protection degree:	IP 55 DIN 40050 (IEC 529); For highly polluted environments according to IEC 730-1(93)/6.5.3;
weight:	4kg;
control signal:	2 SPST contacts;
- 3 point control:	
proportional control:	
- voltage:	0-10V (factory settings) 2-10V/4-7V, 8-11V/1-5V, 6-9V;
- current:	see MVHFS5 accessory;
device indication output:	G0-Y 2-10Vdc (max 2mA);
external power supply output voltage:	G0-G1 16Vdc (max 25mA);

(*) Minimum value required [W] if powered in Vcc: 20W

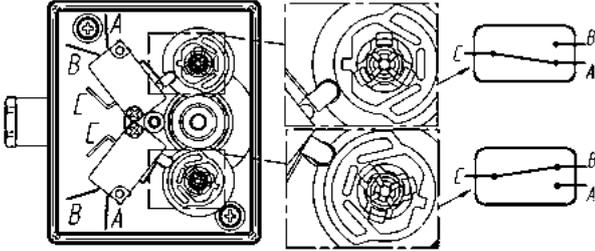
The product complies with EMC 2004/108/CE directive according to EN 61326-1.

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.

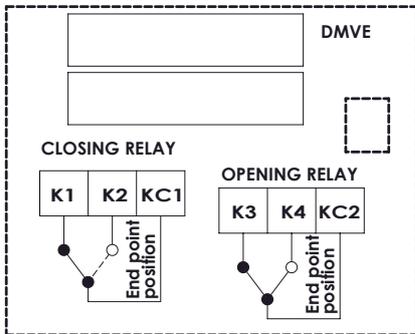
ACCESSORIES

DMVH 2 auxiliary microswitches (SPDT 10 (3) A-250V~) adjustable on the whole stroke. Microdisconnection type 1B according to IEC 730-1(93)/6.4.3.2. It is possible to place the cams so that the microswitches act according to the required position. Keep in mind that when the lever is on the cam protruding part, the contact is closed between b and c and open between c and a (see figure below):



Make the electrical connections in compliance with the rules in force, paying attention that, during operation, the cables do not interfere with the cams and the gears.

AG62 248 Linkage kit for VMB e VSB valves.
Stem heater 24V~, 50W (for applications with fluid temperature <math>< 10^{\circ}\text{C}</math>);
DMVE End point auxiliary switches (electrical rate 24V AC/DC, 4A max);



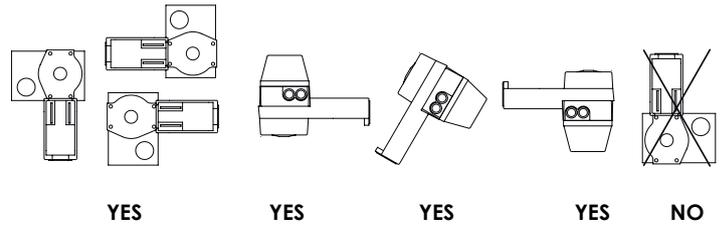
MVHFS5 Accessory for 4-20mA control signal. This accessory is factory-supplied with the actuator.
MVHT Valve body-actuator spacer reducing the actuator direct exposure in case of installation with high-temperature fluids. Dimensions: \varnothing 120mm; h = actuator height + 102mm;
GMVHAC Thermal insulation for MVH.FC/FA actuators.

INSTALLATION AND MOUNTING

The actuator can be mounted in the positions shown in **Fig. 3**. It is advisable to use the motorized valve with MVHT spacer, in order to reduce the actuator working temperature in case of fluids at high temperatures (approximately $> 120^{\circ}\text{C}$) 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 with the rules in force. For valve mounting, follow the assembly instruction inside the package. These actuators are factory-supplied with 0-10V control signal. To select different ranges, move the "DIP" microswitches. (see **fig 1.**) For 4-20 mA range it is necessary to select 2-10 range and use the

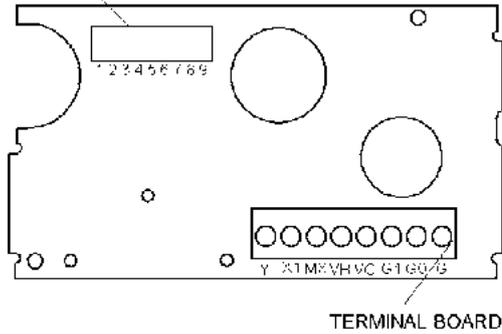
MVHFS5 accessory.
To reverse the action direction, move the DIP n. 7 from OFF to ON.

Mounting positions (Fig.3)

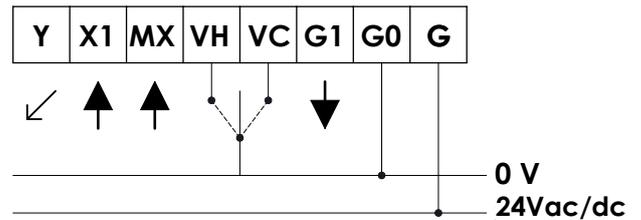


Electronic board

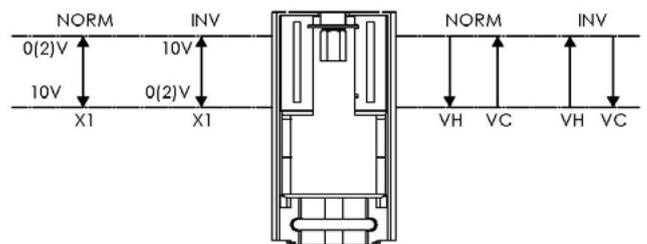
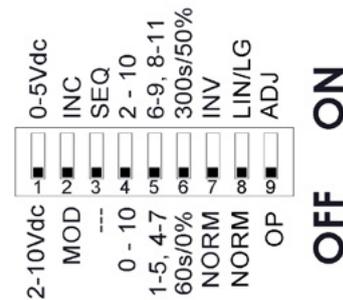
OPERATION MODE SELECTION (CONFIGURATION DIP)



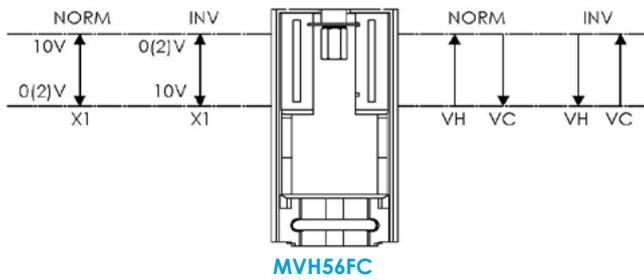
Terminal



DIP switches - factory settings (fig 1.)

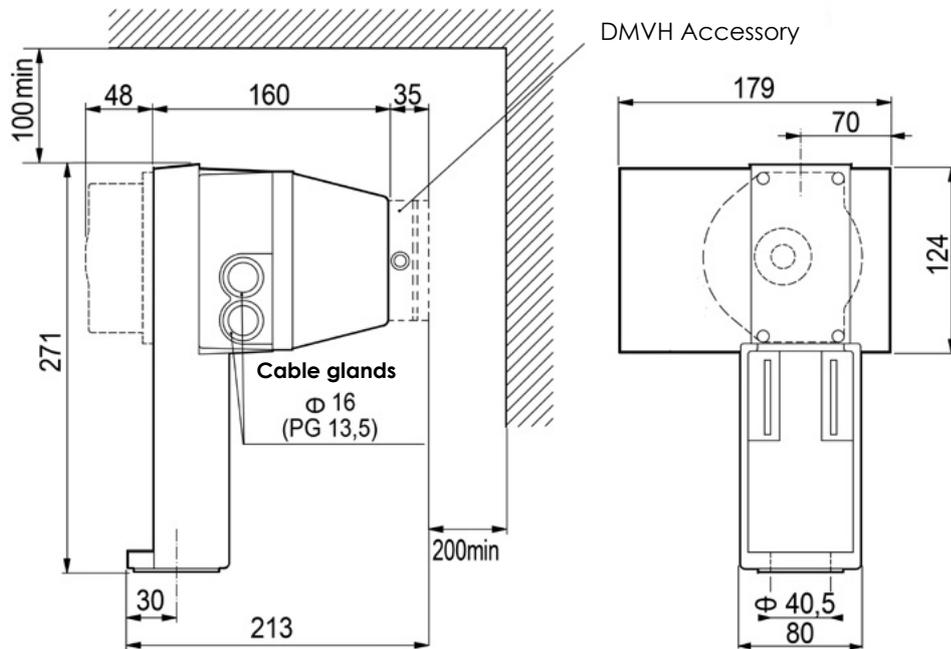


MVH56FA



Terminal	Function	Description
G	24Vac/dc	Power supply voltage
G0	24Vac rtn	
X1	Mod. input (+)	Modulating control signal (0-10Vdc)
MX	Mod. input (-)	
VH	Open input	Control signal short circuited on G0
VC	Close input	
G1	16Vdc	Auxiliary power supply max. 25mA
(G0)	Common	
Y	2-10Vdc signal	Position 0-100% status indication
(G0)	Common	

DIMENSIONS [mm]



The performances stated in this sheet can be modified without any prior notice