

Terminal Unit and Zone Valve Actuators

Specifications subject to change without notice. | 1st Issue rev. g, 01/12, DBL157e | USA 200204 | Page 1 of 2



MVT



Models	Control Signal	Power supply	Stroke [mm]
MVT28	3 points floating	230 V ~	5.5 (0.22")
MVT44	3 points floating	24 V ~	
MVT56	proportional 0...10/6...10/1...5/2...10 4...7/6...9/8...11V-		
MVT56L	proportional 0...10/6...10/1...5/2...10 4...7/6...9/8...11V-		
MVT56S	proportional 0...10/6...10/1...5/2...10 4...7/6...9/8...11V-		
MVT57	proportional 0...10V-		5.5 (0.22")

Table 1

APPLICATION

MVT actuator is designed to provide, with V.XT, V.BT and 2TGA..B valve bodies, floating control of hot/cool water in two/four-pipe fan-coil units, zone and solar plants, reheat coils and dehumidification batteries.

OPERATION

MVT actuator is electric bidirectional.

The valve stem movement is produced by rotation of a screw spindle connected, through a gear train, to a synchronous bidirectional motor.

An internal magnetic hysteresis coupling limits the torque on the valve stem, avoiding the usage of microswitches and protecting the actuator from overload.

MANUFACTURING CHARACTERISTICS

The actuator consists of a base and a housing made of synthetic materials which contain motor, gear box, magnetic coupling, valve driving screw spindle.

A ring nut M30x1.5 is placed on the lower part; it allows an easy coupling to the valve without special tools.

The actuator is equipped with a cable for 3-wire electrical connection. It requires no maintenance.

POSSIBLE COMBINATIONS AND CONNECTIONS

MVT actuators are to be used with V.XT, V.BT and 2TGA..B valves.

The MVT28/44 series can be connected to any floating controller, with characteristics corresponding to details included in the paragraph "TECHNICAL CHARACTERISTICS".

The MVT5. series is standard proportional as indicated on table 1. Due to the presence of the magnetic clutch, the actuator could be continuously powered up without damages but, for life increase and energy saving, it is highly recommended to use a controller equipped with a cut-off function (suggested timing 120% of stroke time).

TECHNICAL CHARACTERISTICS

Power supply	24 V ~ ± 10%
	230 V ~ ± 10% (MVT28)
Consumption	0.5 VA (MVT44)
	1 VA (MVT5.)
	5 VA (MVT28)
Frequency	50/60 Hz



Stroke timing

100 s for V.XT valves having 5.5 mm (0.22") stroke (at 50 Hz)

150 s for 2TGA..B valves having 8.5 mm (0.33") stroke (at 50Hz)

90 s for VSX..PB/VSXT..PB valves having 5 mm (0.20") stroke (at 50Hz)

Speed

18 s/mm (457 s/inch) at 50 Hz;

15 s/mm (381 s/inch) at 60 Hz

Force

200 N (45 lbf), UNI 9497

Temperature

- working

-5 to 55°C (23° to 131°F)

- storage

-25 to 65°C (-13 to 149°F)

Protection class

III (IEC 950)

Connecting cable

3-wire 1.5 m (4.9 ft) (CEI 20-22/II)

Protection degree

IP43 CEI EN 60529

Weight

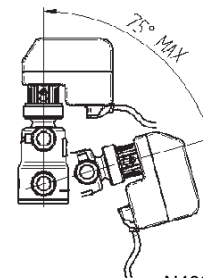
0.2 kg (0.4 lb)

Product conforms, for CE marking, to the following directives: EMC 2004/108/CE according to the EN 61326-1 standard. LVD 2006/95/CE according to the EN 61010-1 standard for the products powered 230 V.

INSTALLATION AND MOUNTING

The actuator can be mounted in the positions indicated below. Before assembling the actuator to the valve, remove the protection cap from valve and make sure that the actuator screw spindle corresponds to the upper notch on the base plate (factory supplied position). Otherwise, it is advisable to consider that, in order to mount the actuator on the valve correctly, the force of the valve internal spring will have to be overcome. Then it should be fixed by tightening the M30X1,5 ring nut on the thread located on the valve body (Fig. 1).

Allowed mounting positions

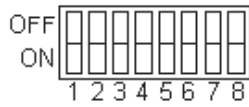


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Perform the electrical connections in compliance with existing rules (Fig. 2)

Through the slits located by the ring nut, it is possible to observe the valve stem movement.

MVT56/MVT56L/MVT56S Range selection



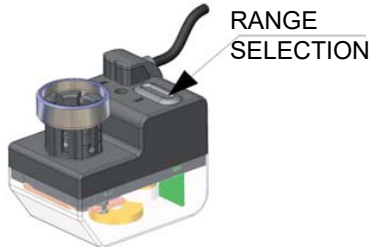
RANGE	N. DIP.
0..10 V	2
6..9 V	3
1..5 V	4
2..10 V	5
4..7 V	6
6..10 V	7
8..11 V	8

The actuator is supplied with 0..10 V- signal and direct action. In case a different setting is required:

- Remove the rubber plug (see the figure below)
- Switch on 'ON' position the DIP 2..8 corresponding to the required range.

Forward/reverse action selection

- Direct action: Position DIP N.1 on OFF
Screw spindle lowers if signal increases (for 3-way valves the direct way is opened and for 2 way-valves it opens).
- Reverse action: Position DIP N.1 on ON
Screw spindle raises if signal decreases (for 3-way valves the direct way is closed and for 2 way-valves it closes).



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- Replace the rubber plug in the previous position.

MVT57

MVT57 actuator has 0..10 V- fixed working signal, direct action (it is not possible to invert the action).

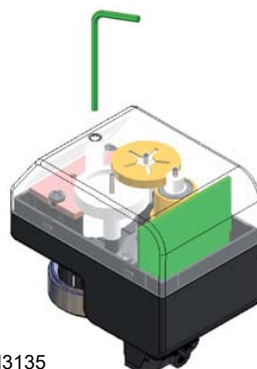
START UP

Supply the controller-actuator system, after having mounted the actuator on the valve body and once the electrical connections are performed and the action ranges selected. When powered, the actuator reaches one stroke end and remains in this position for about 2 min. Afterwards, the actuator will reach the position set by the controller signal (MVT56,56L,57).

MANUAL CONTROL

It is possible to start all MVT models with manual control by means of a socket head key (3 mm).

It is necessary to power off the actuator before starting the manual control.



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VALVES-ACTUATOR ASSEMBLY

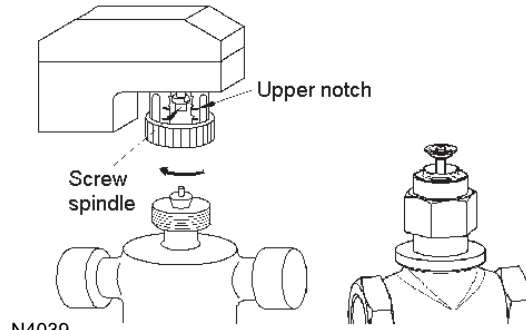
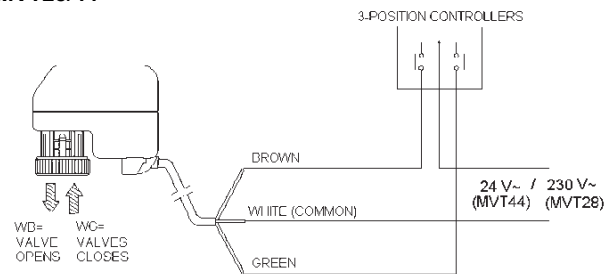


Fig. 1

ELECTRICAL DIAGRAM

MVT28/44



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Fig. 2

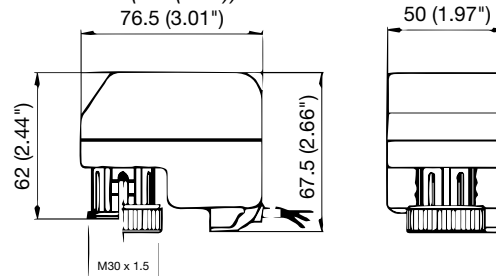
MVT28 actuator is supplied with a screw-safety connector cover. We recommend to carry out the connection with the actuator powered off. At the end of the wiring procedures mount and screw again completely the connector.

MVT56/56L/56S/57

Brown = 24 V~ 50/60 Hz
White = Common
Green = V Control signal

(A) Never perform nor change electrical connections when power supply is on.

DIMENSIONS (mm(inch))



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MVT+VALVES ASSEMBLY OVERALL DIMENSIONS

For MVT-valve assembly overall dimensions, make reference to the following data sheets: DBL216 (for V.XT valves), DBL102 (for VB.T valves), DBL367 (for 2TGA..B valves) and DBL383 (for VSX..PB/VSXT..PB).