

Terminal unit and zone valve actuators



PART NUMBER	CONTROL SIGNAL	POWER SUPPLY
MVT28	3 floating	230 V~
MVT44	3 floating	24 V~
MVT56	proportional 0...10/6...10/1...5/2...10 4...7/6...9/8...11V-	
MVT57	proportional 0...10V-	

Table 1



APPLICATION

MVT actuator is designed to provide, with V.XT, V.T and V.BT 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 CONTROLLI V.XT, V.T, V.BT valves. The MVT28/44 series can be connected to any 3-position 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

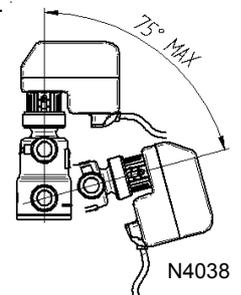
Power supply	24 V ~ ± 10%
	230 V ~ ± 10% (MVT28)
Consumption	0,5 VA (MVT44)
	1 VA (MVT5.)
	5 VA (MVT28)
Frequency	50/60 Hz

Stroke timing	100 s for V.T valves having 5,5 mm stroke (at 50 Hz)
Speed	18 s/mm at 50 Hz - 15 s/mm at 60 Hz
Force	200 N (UNI 9497)
Temperature:	
- working	-5T55 °C
- storage	-25T65 °C
Protection class	III (IEC 950)
Connecting cable	3-wire 1,5 m (CEI 20-22/II)
Protection degree	IP43 CEI EN 60529
Weight	0,2 Kg.
The product conforms to EMC 89/336 directive with reference to the below-mentioned standards: for emission EN 50081-1 for immunity EN 50082-1	

INSTALLATION AND MOUNTING

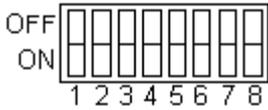
The actuator can be mounted in the positions indicated below. Before assembling the actuator to the valve, remove the protection cap from valve and make sure that the actuator screw spindle corresponds to the upper notch on the base plate (factory supplied position). Otherwise, it is advisable to consider 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).

Mounting positions allowed



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.

RANGE AND ACTION SELECTION

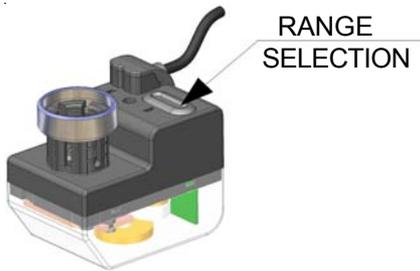


RANGE	DIP NR..
0..10 V	2
6..9 V	3
1..5 V	4
2..10 V	5
4..7 V	6
6..10 V	7
8..11 V	8

MVT56

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.
- 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).
- Replace the rubber plug in the previous position.



N4150

MVT57

MVT57 actuator has 0..10 V- fixed working signal, direct action.

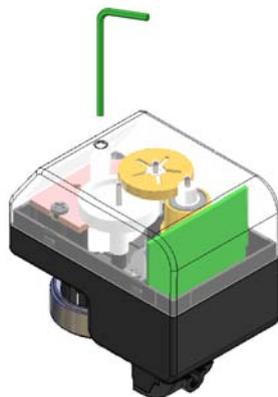
START UP

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 (MVT56,57).

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.



N3135

VALVES-ACTUATOR ASSEMBLY

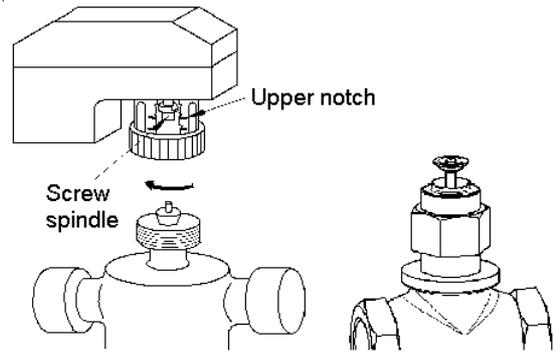
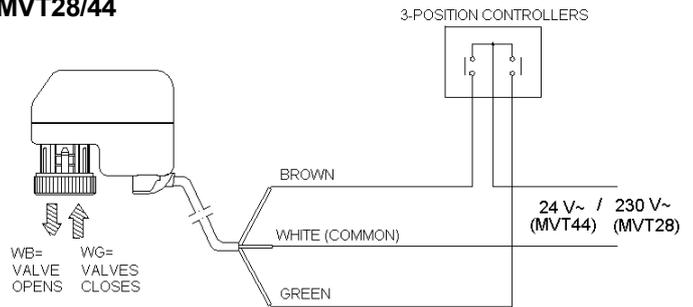


Fig. 1

ELECTRICAL DIAGRAM

MVT28/44



N3032

Fig. 2

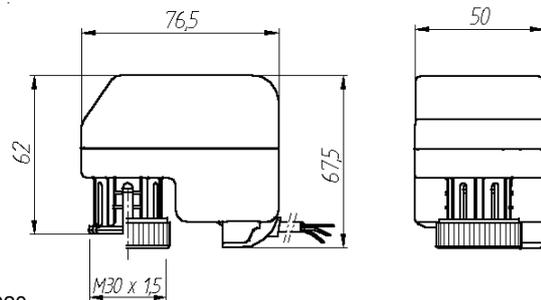
MVT28 actuator is supplied with a screw-safety connector cover. We recommend to carry out the connection with the actuator powered off. At the end of the wiring procedures mount and screw again completely the connector.

MVT56/57

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

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

DIMENSIONS (mm.)



N4020

MVT+VALVES ASSEMBLY OVERALL DIMENSIONS

For MVT-valve assembly overall dimensions, make reference to the following data sheets: DBL216 (for V.XT valves), DBL025 (for V.T valves) and DBL102 (for VB.T valves).

The performances stated on this sheet can be modified without any prior notice due to design improvement.

Rev. d

12/06

2

DBL157E

CONTROLLI

Automatic control systems for:
air conditioning/heating/industrial thermal process.

ISO 9000