

Model	Control signal	Power supply	Stroke max.
MVT203	3 point	230Vac	16 mm
MVT403			
MVT503	proportional	24Vac	
MVT203S	3 point	230Vac	9 mm
MVT403S			
MVT503S	proportional	24Vac	

### APPLICATION AND USE

MVT actuator can be used with valves to control hot/cool water flow rate in two/four pipes terminal units, zone and solar plants, small reheating and dehumidification coils.

### OPERATION

MVT is an electric bidirectional actuator. The valve stem movement is produced by a gear train and a synchronous bidirectional motor.

### POSSIBLE CONNECTIONS AND MATCHES

MVT203S, MVT403S, MVT503S must be used with valves V.XT, V.BT smd 2TGA.B series.

Model MVT203, MVT403 and MVT503 must be used with valves 2-3TGB.T and 2TGA:BT series.

Models MVT203/203S and MVT403/403S can be connected to any controller with 3 point control signal which has the same power supply characteristics of the actuator as indicated in the paragraph "Technical Characteristics".

Models MVT503/503S are proportional and they can operate in the following ranges:

- 0-10Vdc
- 2-10Vdc
- 0-5Vdc
- 6-10Vdc
- 4-20mA

### MANUFACTURING CHARACTERISTICS

The actuator housing is made of a polymeric fireproof material; a metal ring M30x1,5 is dedicated to the assembling with the valve.

The actuator is equipped with a cable for electric connection, and does not need maintenance.

### TECHNICAL CHARACTERISTICS

Power supply:	24Vac $\pm$ 10% (MVT403/403S and MVT503/503S)
	230Vac $\pm$ 10% (MVT203/203S)
Consumption:	0,5VA (MVT403/403S)
	1VA (MVT503/503S)
	5VA (MVT203/203S)
Frequency:	50/60Hz
Stroke timing:	62s for valves V.XT having 5,5mm stroke (at 50Hz)
	96s for valves 2TGB having 8,5mm stroke (at 50Hz)
	56s for valves VSX..PB/VSXT..PB having 5mm (at 50Hz)
Speed:	11,5s/mm at 50Hz - 9,4s/mm at 60Hz
Force:	300N (UNI9497)



Temperature:	
operation:	-5T55°C
storage:	-25T65°C
Protection class:	III (IEC 950)
Connection cable:	3-wire 1,5m for MVT203/203S and MVT403/403S
	5-wire 1,5m for MVT503/503S (CEI20-22/II)
Protection degree	IP43 CEI EN 60529
Weight:	0,250 kg
Feedback signal (just for MVT503/503S):	2-10V (2V fully retracted; 10V fully extended independently from operation range or direct/reverse action)

The product complies, for CE marking, with the following Directives:

EMC 2004/108/CE according to EN 61326-1

LVD 2006/95/CE according to EN 61010-1 for products which require 230Vdc power supply.

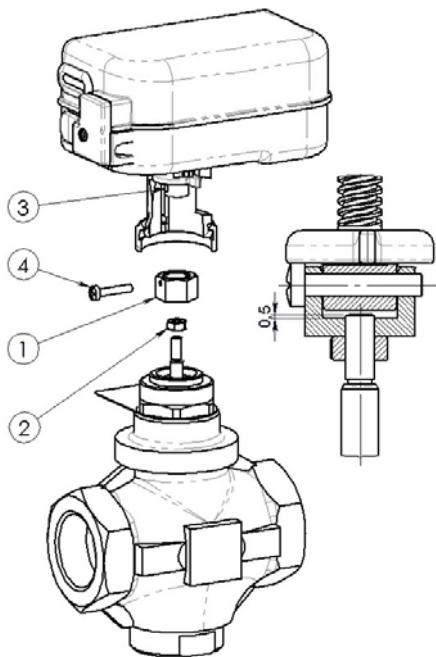
### INSTALLATION AND ASSEMBLING

#### • Models MVT203S - MVT403S - MVT503S

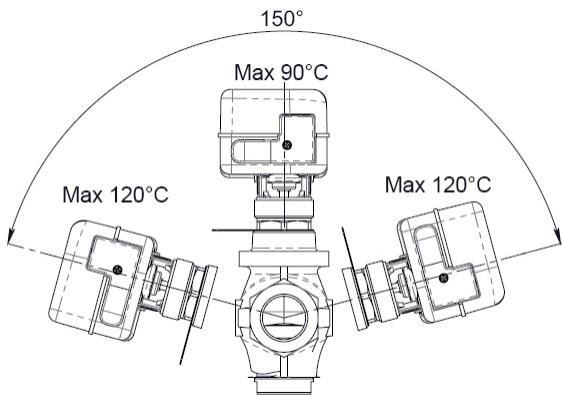
Before assembling the valve and the actuator, check that the set-screw is up (position supplied). If not, remember that, to mount the actuator on the valve in the right position, you have to overcome the spring strenght of the valve itself. Screw in the ring nut M30x1,5 firmly on the valve thread.

#### • Models MVT203 - MVT403 - MVT503

Lock the nut 1 on the valve plug through the lock nut 2, positioning the not threaded hole towards the operator. Mount the actuator on the valve screwing in the ring nut M3x1,5 without locking it; using the manual override make the set-screw go down until the hole 3 corresponds to the hole on the nut 1. Mount the screw 4. Direct the actuator in the desired position and lock the ring nut M30x1,5.



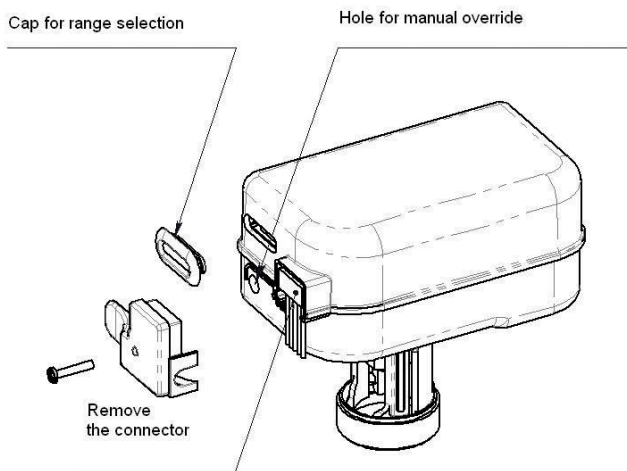
**Allowed mounting position:**



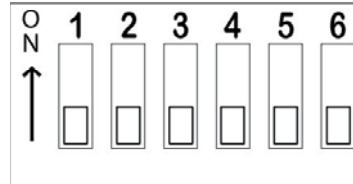
**Range selection (only MVT503/503S models)**

The actuator is supplied prearranged for 0-10V control signal and direct action; to modify this setting, follow these instructions:

- Remove the cap and the connector (look at the following picture):



- Change the DIP switches as indicated in the following scheme:



DIP 1	ON = INV action	OFF = DIR action
DIP 2	ON = 2-10	OFF = 0-10
DIP 3	ON = Range SEQ	OFF = Range NORM
DIP 4	ON = 6-10	OFF = 0-5
DIP 5	ON = 4-20mA	OFF = voltage range
DIP 6	ON = Learning	OFF = Running

**Manual override**

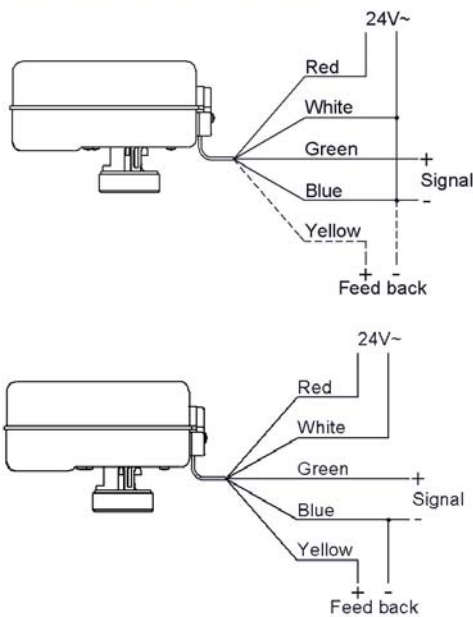
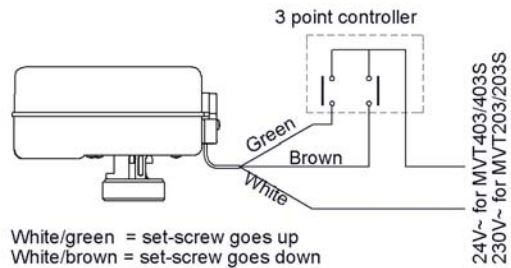
Removing the connector cover you can reach the hole for manual override, which can be activated through a 3mm socket head screw (not included). Before operating on the manual override, be sure that the actuator is not powered.

**Direct/reverse action**

- Direct action: DIP nr. 1 OFF. As the signal increases the actuator set-screw goes down (3-way valve opened on direct way, 2-way valve opened).
- Reverse action: DIP nr. 1 ON. As the signal increases the actuator set-screw goes up (3-way valve closed on direct way, 2-way valve closed).
- Put again the cover on its ordinary position.

**WIRING DIAGRAMS**

Make electrical connections in accordance with regulation in force. To verify the direction of the set-screw movement, compare the rotation way of the manual override with the information you find on the base. The movement of the stem valve can be observed also through the slits in correspondance to the fixing ring nut.



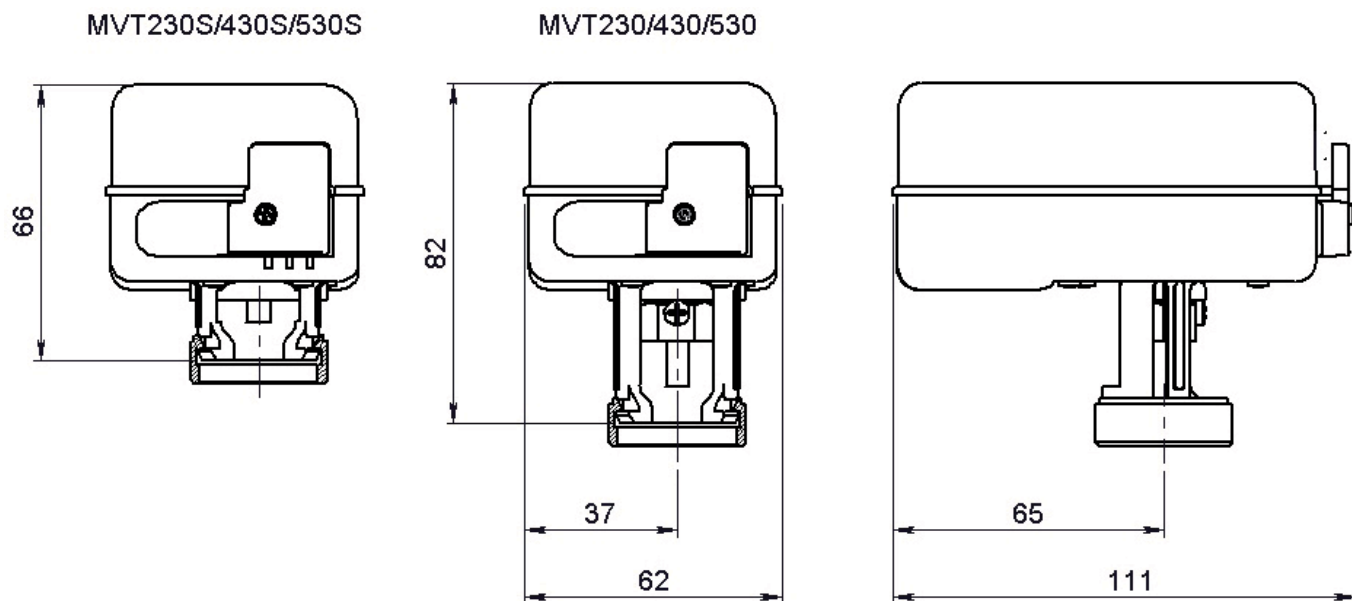
## Replacement of the old proportional MVT

Connect together the white and the blue cable; then connect the white cable of the new actuator in place of the white cable of MVT56/57, the new green cable in place of the old green cable and THE NEW RED CABLE IN PLACE OF THE OLD BROWN CABLE.

If you need you can make use of the feedback signal, not available on the old models of actuator.

Do not make electrical connection or changing operation in case actuators are powered.

### OVERALL DIMENSIONS (mm)



The performances stated in this sheet can be modified without any prior notice due to design improvements