

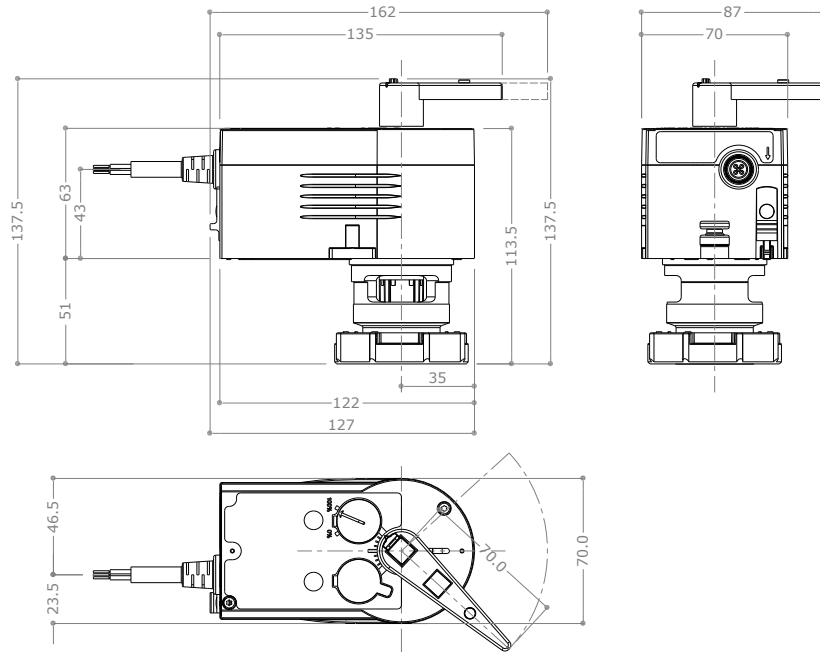


DESCRIPTION

**M63**

Electric actuator 24V with proportional control mode (0-10V) or 2 / 3 points for six ways ballvalves (item **63/2**). It enables the automatic winter-summer change-over or it eventually allows the control of radiant ceilings, fan coil units and chilled beams.

DIMENSIONS



APPLICATION FIELD

The **M63** electric actuator is an actuators fed at 24 V. It moves the Pettinaroli six ways valve **63/2**. According to the system complexity, the actuator can be managed by a BMS or a room thermostat choosing among the following modes:

- Proportional 24V with 0/10V signal
- 2 points control
- 3 points control

For further details, see the section “Electric connection”. The Pettinaroli **M63** has a release button and a handle to manage it manually.

TECHNICAL FEATURES

Supply voltage	24VAC ±20% - 50-60Hz 24VCC -10% ÷+20%	Admissible ambient humidity	5% - 95% Hr. No condensing
Max power consumption	4.9 W – 8.7 VA	Max temperature medium	100°C
Running time	120s (#)/35/60	Admissible ambient temperature	-10°C ÷ +55°C
Angle of rotation	0°-90°	Type of protection (EN60529)	IP54
Response time	200 ms	Protection class (IEC60730)	III
Torque	8 Nm (120 s and 60 s) – 4 Nm (35 s)	Housing color	Black
Power cable	5x 0.5 mm <sup>2</sup>	Cover color	Light blue RAL5015
Power cable length	1.2 m	Weight	700 g

(#)  120s

APPROVALS



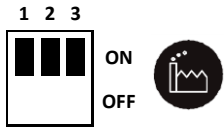
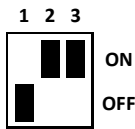
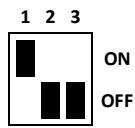
EMC directive 2004/108/EC: EN 61000-6-1, EN 61000-6-3 EN 61000-6-4

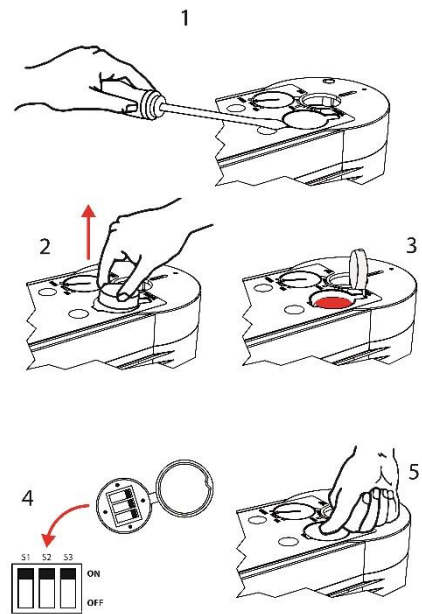
Directive 2006/95/EC: Machine Directive (EN 1050)

**RUNNING TIME SELECTION**

The actuator running time can be set by means of dip-switches. In order to reach them, take the cap away: this cap is placed on the upper cover, as shown by the picture beside.

The table below summarizes the three different modes which can be chosen. To ensure proper operation of the assembly valve/actuator, only the 3 proposed configurations are strictly suggested:

Switch position	Running time
	120 s ± 4 (default)
	60 s ± 4
	35 s ± 4



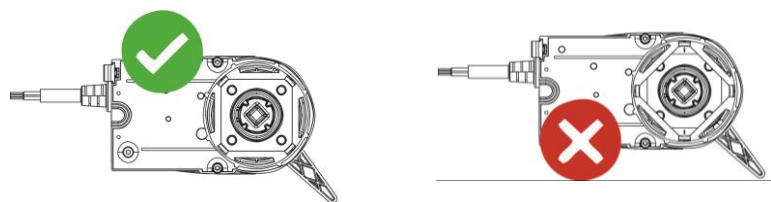
The power consumption changes according to the selected running time; the table below shows that:

Running time	Status	Active power (W)	Apparent power (VA)
35 s	Operation	2.45	4.75
35 s	Stand-by	0.35	0.8
60 s	Operation	4.9	8.7
60 s	Stand-by	0.35	0.75
120 s	Operation	2.25	4.3
120 s	Stand-by	0.35	0.75

**INSTALLATION ON THE 63/2 VALVE**

Strictly follow the procedure in order to correctly couple the **M63** actuator with the six ways ballvalve **63/2**:

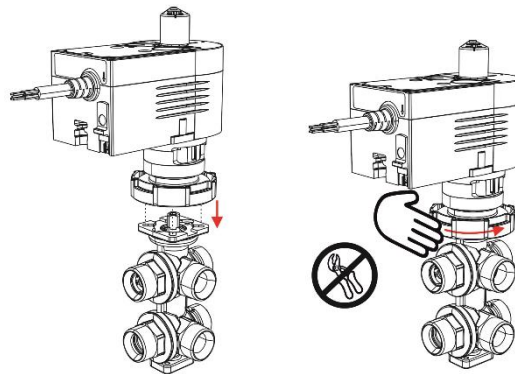
1. The fixing ring must be in the horizontal position, not in the diagonal one.



2. Place the stem of the six ways **63/2** valve at 90° which means getting the 1 and 4 ways closed and the 5 and 6 completely open.
3. Set the actuator at 100% by means of the manual release.



4. Couple the actuator with the valve following the picture beside.



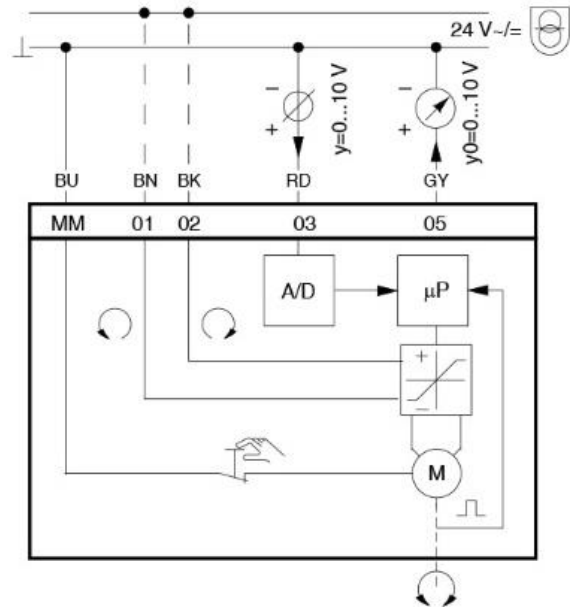
**ELECTRICAL CONNECTIONS**

**LEGENDA**

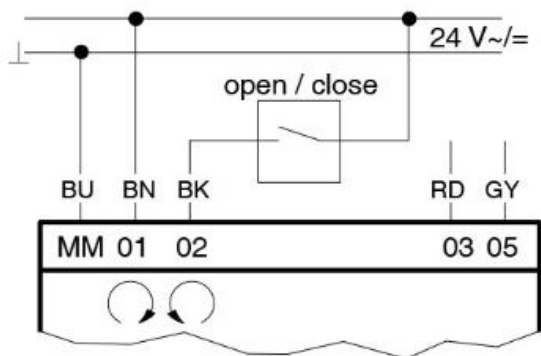
MM	01	02	03	05
BU	BN	BK	RD	GY
Blue	Brown	Black	Red	Yellow

Every kind of electrical connection must be done by qualified staff and without voltage. Do not open the actuator to reach clamps.

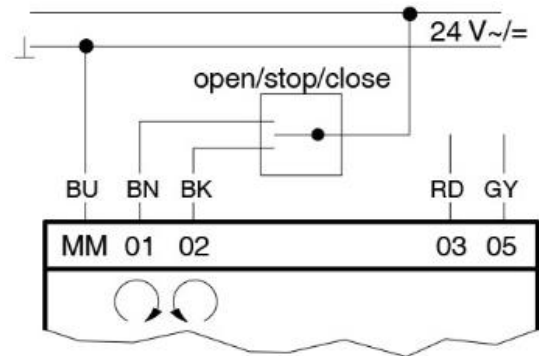
**CONTROL MODE: PROPORTIONAL 0-10V**



**CONTROL MODE: 2 POINTS**



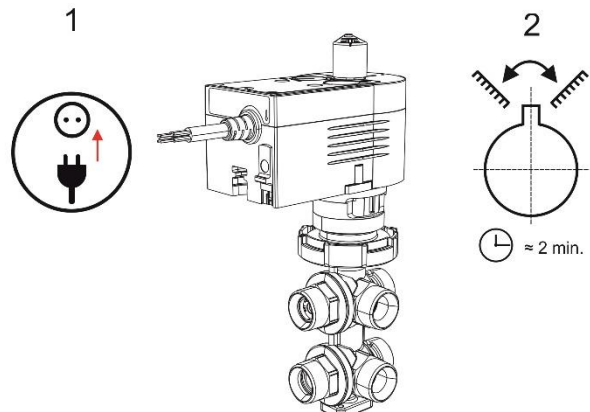
**CONTROL MODE: 3 POINTS**



**COMMISSIONING**

**Proportional 0-10V control mode:** when the actuator M63 is powered, an internal control cycle automatically starts. This cycle lasts about 2 minutes. The actuator checks the end points on their extreme positions (0% e 100%). Then the actuator places itself:

- position 0 %, in other words, ways 1 and 4 completed open, if the brown cable BN is linked;
- position 100 %, ways 1 and 4 completely closed, if the black cable is linked;

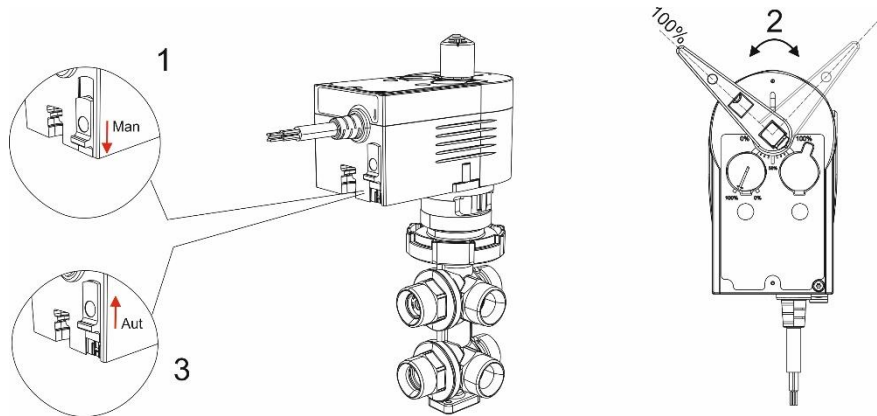


**2 points control mode:** when the actuator **M63** is powered, it identifies the 100% position by itself; this means the ways 1 and 4 are completely closed. Only an external control system (e.g., room thermostat, BMS) can change this situation and opening the ways 1 and 4, and closing ways 5 and 6.

**3 points control mode:** when the actuator **M63** is powered, it places itself to 100% position (ways 1 and 4 closed) or to 0% position (ways 1 and 4 completely open) according to the status of the switch (thermostat): if the contact is linked to the brown cable BN it goes to 100% position, otherwise the 0% position is set.

**RELEASE BUTTON**

As we said before, the **M63** actuator has a release button which disables the mechanical connection between engine and shaft. Thus, valve position (open or closed) can be forced manually.

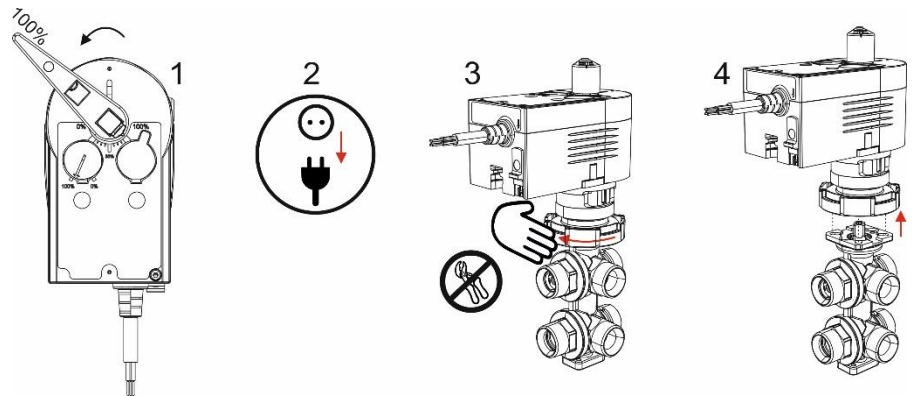


**REMOVING THE ACTUATOR**

In order to make the removal operation easier, the actuator **M63** should be to 100% position.

If so requested, use the release button to reach manually this position.

To remove the actuator, please follow the procedure shown beside.



**INSTALLATION**

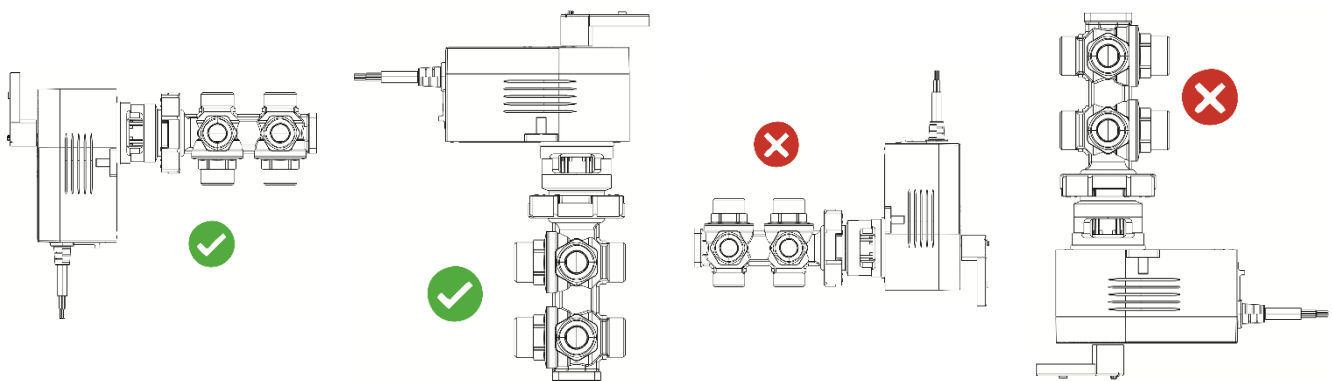


Fig.1

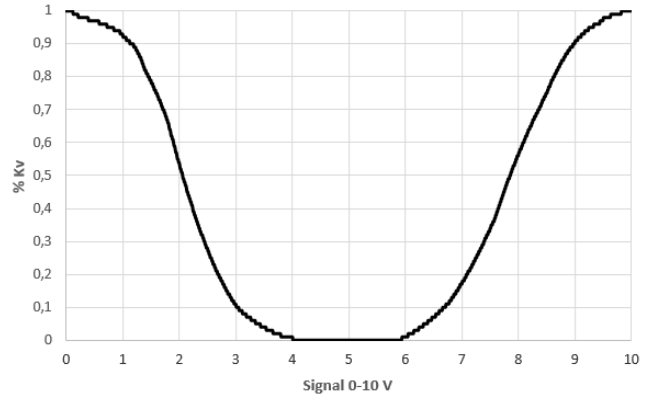
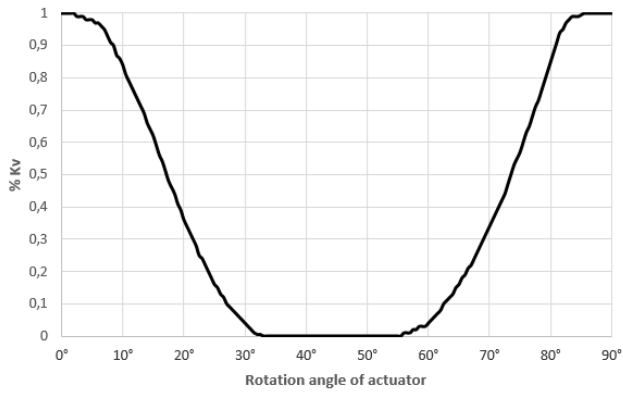
Fig.2

Fig.3

Fig.4

It is appropriate installing the **M63** actuator like pictures 1 or 2. Vertical or upside-down installation (pictures 3 and 4) could injure right operations and it could be dangerous, electrically speaking.

OPERATION CHARACTERISTIC CURVE OF THE ASSEMBLY M63 ACTUATOR AND 63/2 VALVE



EXAMPLE OF ASSEMBLY M63 ACTUATOR WITH 63/2 VALVE

