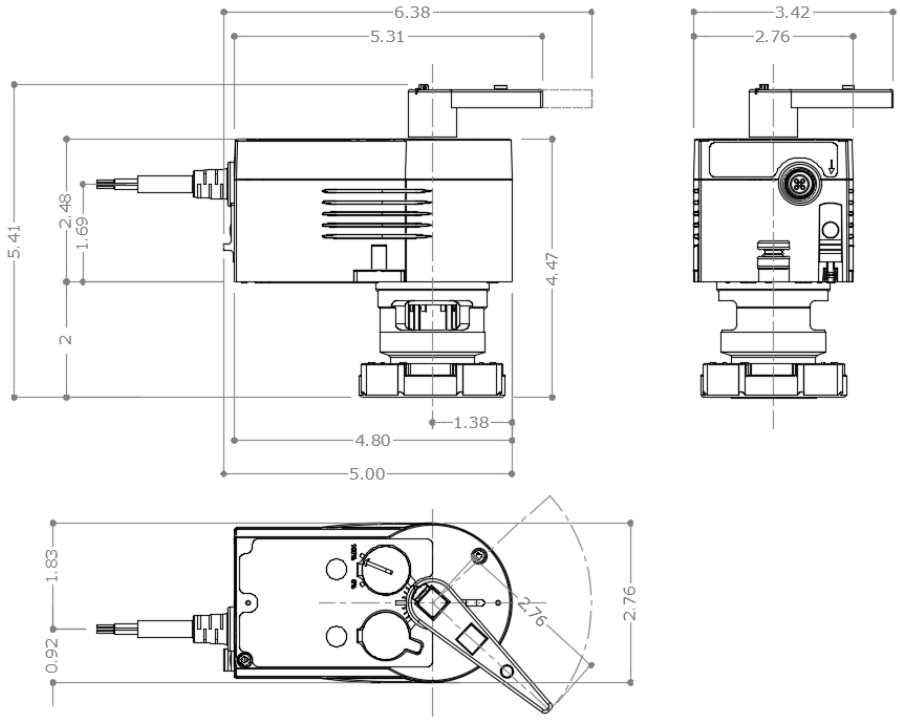
DESCRIPTION

Guidelines for the technician/fitter

T6A-P

Electric actuator 24V with proportional control mode (0-10V) or 2 / 3 points for 6-way ball valves (art. **T6**). It enables the automatic winter-summer change-over or and/or the control of radiant ceilings, fan coil units and chilled beams.

DIMENSIONS



APPLICATION FIELD

The **T6A-P** electric actuator is an actuators fed at 24 V. It moves the HCI 6-way valve **T6**. 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 HCI **T6A-P** has a release button and a handle to manage it manually.

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TECHNICAL FEATURES

Supply voltage	24VAC ±20% - 50-60Hz	Admissible ambient humidity	5% - 85% rF.
Max power consumption	6 W	Max temperature medium	212°F – 100°C
Running time	120s (#) / 35/60/	Admissible ambient temperature	14°F ÷ +131°F
Angle of rotation	0°-90°	Type of protection I	IP54
Response time	200 ms	Protection class	III
Torque	62 lb-in (120s and 60s) – 31 lb-in (35s)	Housing color	Black
Power cable	5x AWG20	Cover color	RAL5015
Power cable length	47.2 in	Weight	1.54 lb
(#)  120s			

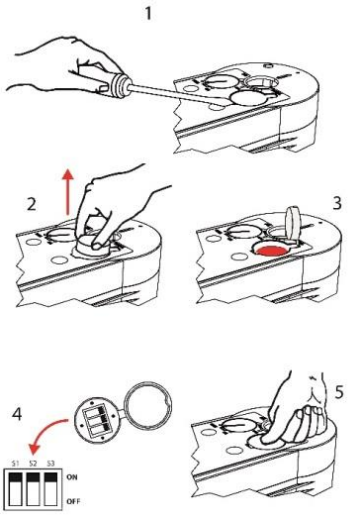
APPROVALS - CERTIFICATIONS

23BA

c UL us Type 1AB UL/EN 60730

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	1 2 3 ON OFF 	1 2 3 ON OFF	1 2 3 ON OFF
Running time	120 s ± 4 (default)	60 s ± 4	35 s ± 4

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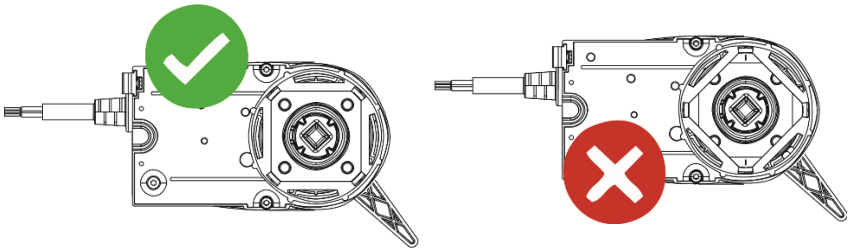
The power consumption changes according to the selected running time; the table below shows that:

Running time	*Status*	*Active Power*	*Apparent Power(VA)*
35 s	Operation	2.45 W	4.75 VA
35 s	Stand-by	0.35 W	0.8 VA
60 s	Operation F	6.0 W	8.7 VA
60 s	Stand-by	0.35 W	0.75 VA
120 s	Operation	2.25 W	4.3 VA
120 s	Stand-by	0.35 W	0.75 VA

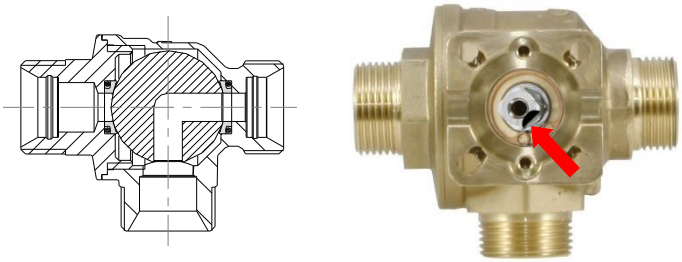
INSTALLATION ON THE T6 VALVE

Strictly follow the procedure in order to correctly couple the **T6A-P** actuator with the 6-way ball valve **T6**:

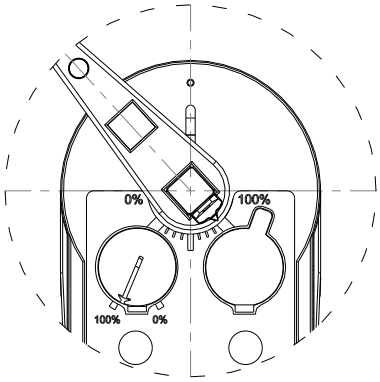
1. The fixing ring must be in the horizontal position, not in the diagonal one



2. Place the stem of the 6-way **T6** 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.



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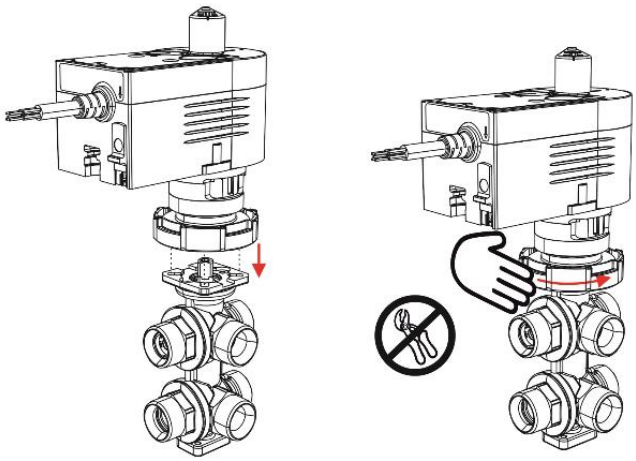
4. Couple the actuator with the valve following the picture beside.



ELECTRICAL CONNECTIONS

Software A UL/EN 60730

The device is supplied by the same Class 2 source for all I/O.

LEGEND

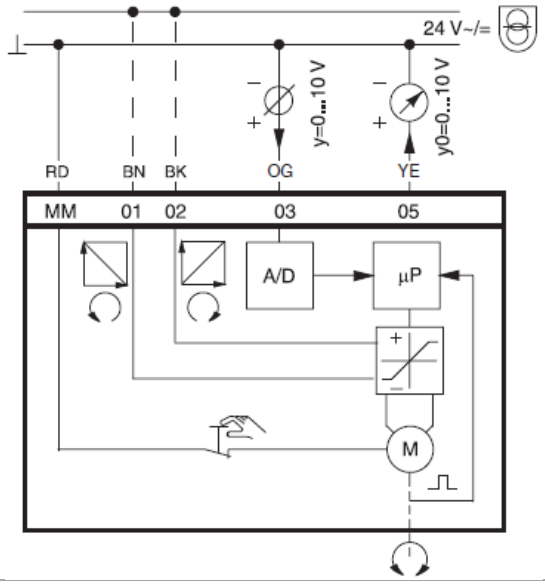
MM	01	02	03	05
RD Red	BN Brown	BK Black	OG Orange	YE Yellow

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

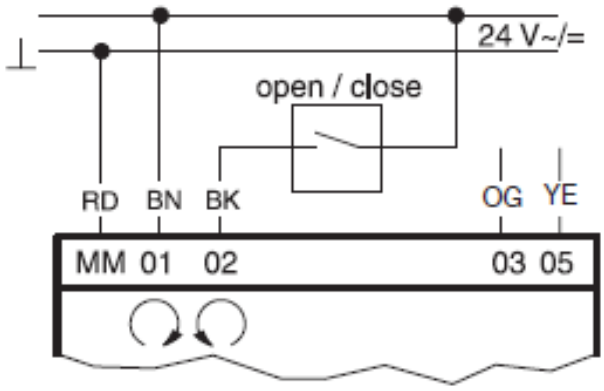
CONTROL MODE: PROPORTIONAL 0-10V

Hook up just one wire between the brown and black ones according to wanted rotation and to control signal increase.

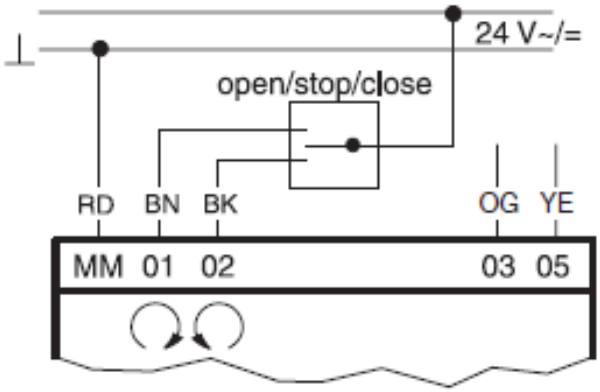
CONTROL MODE: PROPORTIONAL 0-10V



CONTROL MODE: 2 POINTS



CONTROL MODE: 3 POINTS



***WARNING**: the device's non-removable power cable should not be laid between two rooms.*

This device is not suitable for plenum application.

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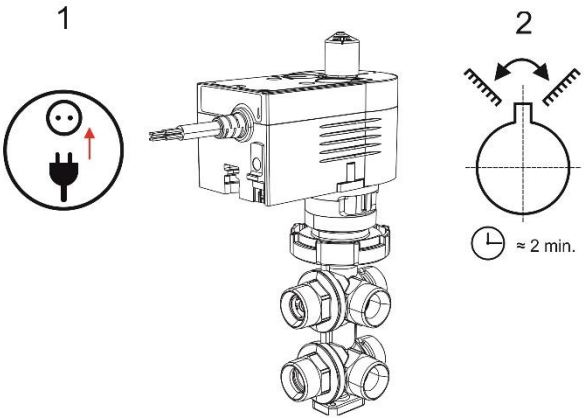
COMMISSIONING

Proportional 0-10V control mode: when the actuator **T6A-P** 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 (**with control signal 0 V**);
- **position 100 %**, ways 1 and 4 completely closed, if the black cable BK is linked (**with control signal 0 V**);

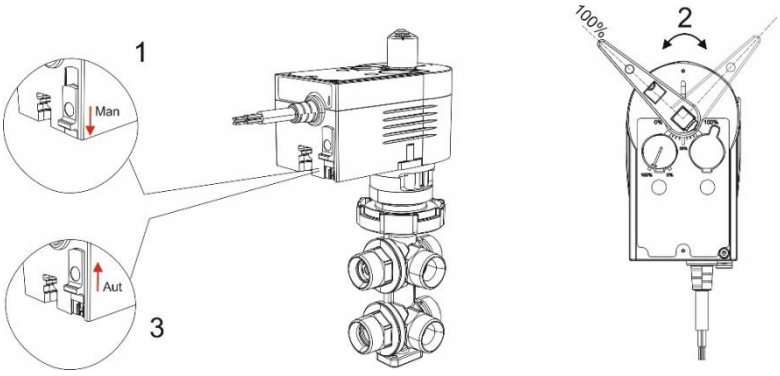


2 points control mode: when the actuator **T6A-P** is powered, it identifies the 100% position by itself; this means the ways 1 and 4 are completely closed. Only an external control system (e.g., room thermostat, BMS) can change this situation and opening the ways 1 and 4, and closing ways 5 and 6.

3 points control mode: when the actuator **T6A-P** 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 **T6A-P** actuator has a release button which disables the mechanical connection between engine and shaft. Thus, valve position (open or closed) can be forced manually.



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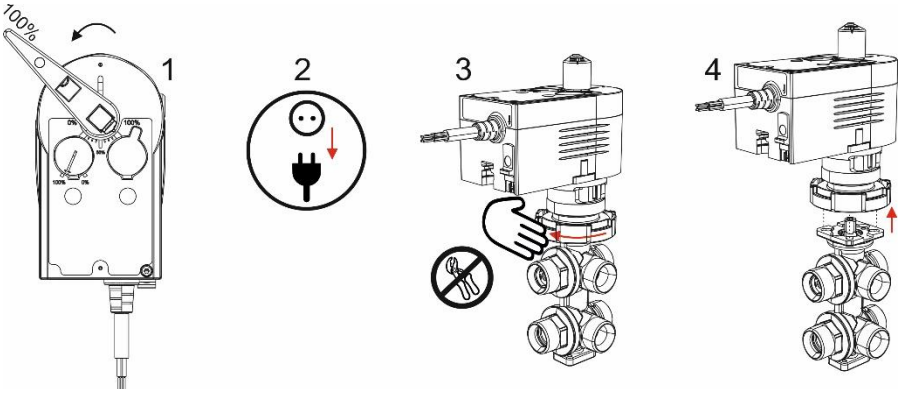
REMOVING THE ACTUATOR

In order to make the removal operation easier, the actuator **T6A-P** 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

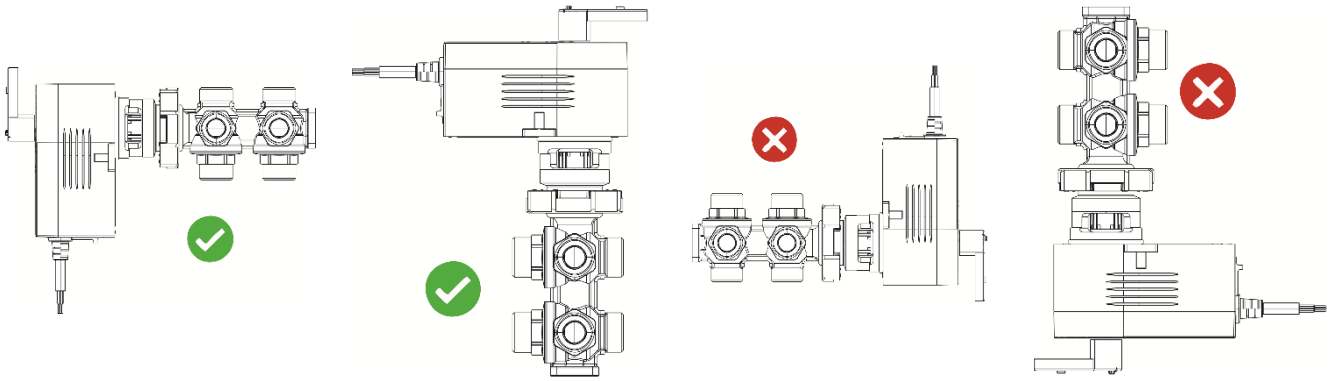


Fig.1 Fig.2 Fig.3 Fig.4

It is appropriate installing the **T6A-P** 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.

CLOSING PROCEDURE OF ALL WAYS

Follow the procedure below to contemporary close all the ways of T6 valves (balls in dead zone), keeping the overpressure discharge system operating at any time:

0 – 10 V control signal

- with starting position 0V (cooling side open), give a 6 V signal. Then give a 5 V signal.
- with starting position 10V (heating side open), give a 4 V signal. Then give a 5 V signal.

3 points floating

Always do a 120 s or 60 s cycle (according to selected running time) plus 10 s.
Then invert the rotation direction for:

- 65 s with 120s running time
- 32 s with 60 s running time

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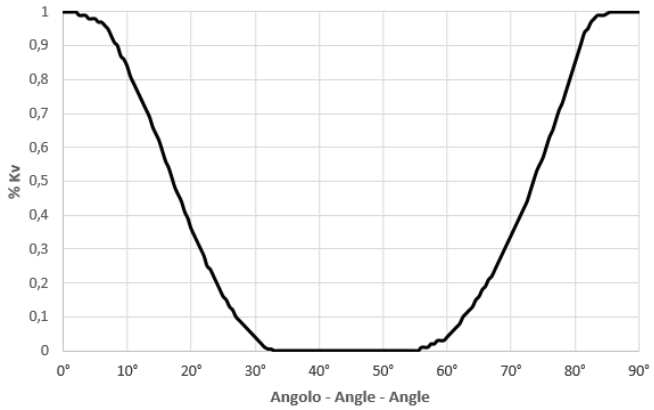
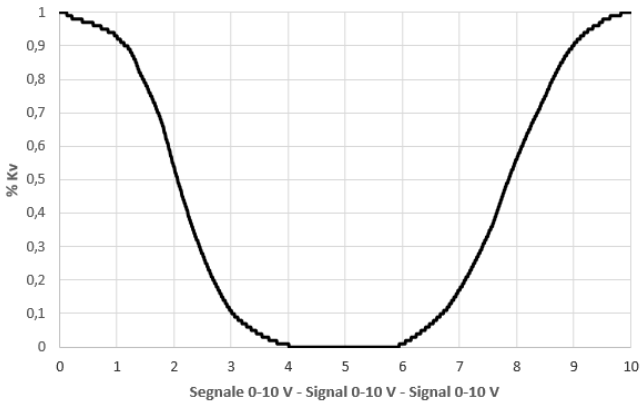
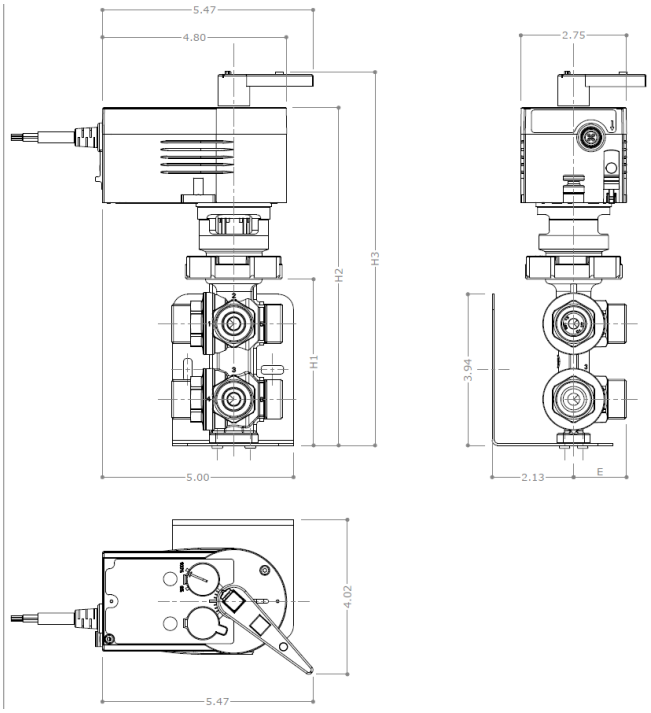
OPERATING CHARACTERISTIC OF THE ASSEMBLY T6A-P ACTUATOR AND T6 VALVE





EXAMBLE OF ASSEMBLY T6A-P ACTUATOR WITH T6 VALVE



	T6-AF-1.45	T6-BF-4.62	T6-AU-1.45	T6-AU-3.24
H1	4.33	5.24	4.33	5.24
H2	8.78	9.72	8.78	9.72
H3	9.72	10.63	9.72	10.63
E	1.34	1.57	1.38	1.61

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