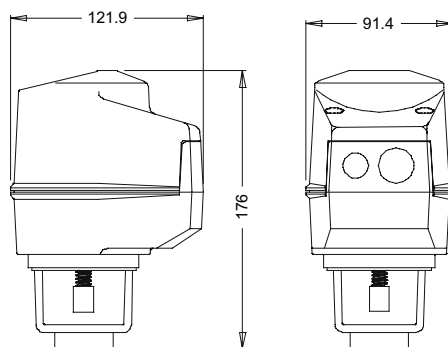


Motor type MT40A
Installation instruction



Dimensions in mm



Caution

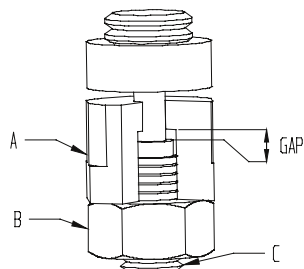
We strongly recommend that all Clorius products be wired to a separate transformer and that transformer shall service only Clorius products. This precaution will prevent interference with, and/or possible damage to incompatible equipment.

When multiple actuators are wired on a single transformer, polarity must be observed. Long wiring runs create voltage drop which may affect the actuator performance.

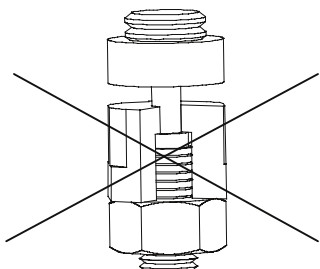
Mechanical installation

Mounting of the actuator on valve

Correct mounting



Non Correct mounting

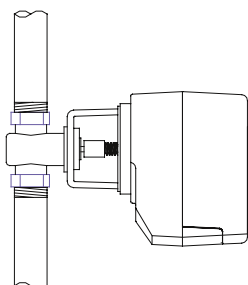


1. Screw completely the valve shaft (C) unto the coupling of the actuator (A).
2. Unscrew the coupling (A) for ½ of turn in order to leave a functional play.
3. Screw the counter nut (B).

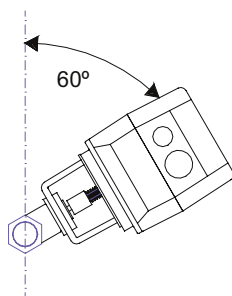
Warning: Do not over tight coupling of the actuator on the shaft of the valve.

Mounting of the actuated valve on system

Vertical mounting



Horizontal mounting



1. Pay attention to system particularity; be sure that the expansions, contractions of the system and its medium as well as operating pressures are within the tolerances.
2. When plumbing, the motorized valve should be situated in an easily accessible place and sufficient space should be allowed for the removal of the actuator.
3. To prevent moisture from collecting in the motor casing, install the motorized valve such that the **actuator is superior to the valve**, at 60° maximum / at vertical. Avoid mounting the valve so that the valve stem is below horizontal.

Wiring Diagrams

<p>Analog</p> <p>COMMON 24 VAC 30 VDC</p> <p>FEEDBACK 4 to 20 mA</p> <p>2 to 10 VDC</p> <p><u>For 4 to 20 mA control signal</u> Connect one of the supplied 500 ohm resistors between pins 1 and 3.</p>	<p>PWM</p> <p>COMMON 24 VAC 30 VDC</p> <p>FEEDBACK 4 to 20 mA</p> <p>PWM CONTROL SIGNAL</p>
<p>Digital – 3 wire / 2 position</p> <p>COMMON DRIVE UP (OPEN) DRIVE DOWN (CLOSE) 24 VAC 30 VDC</p> <p>FEEDBACK 4 to 20 mA</p> <p><u>Special consideration for Digital control</u> In this mode, actuator is sensitive to induced electrical voltages from other sources. To prevent such interference, wire one 2.2k ohm 0.5W resistor between pins 4 and 1 and a second 2.2k ohm 0.5W resistor between pins 3 and 1. These resistors are supplied.</p>	<p>Digital – 4 wire / 3 point floating</p> <p>COMMON 24 VAC 30 VDC</p> <p>DRIVE UP (OPEN)</p> <p>FEEDBACK 4 to 20 mA</p> <p>DRIVE DOWN (CLOSE)</p>
<p>For 2 to 10 VDC output feedback For any of above wiring configurations, connect one of the supplied 500 ohm resistors between pins 1 and 5.</p>	

PC Board

<p>Manual override under PCB</p> <p>Potentiometer</p> <p>Reset button</p> <p>Terminal</p> <p>LED</p> <p>Dip switch</p> <p>Motor</p>	<p>Dip switch settings</p> <p>Direction: up (open) Fail safe: down (close) PWM: 25 sec.</p> <p>Direction: down (closed) Fail safe: up (open) PWM: 5 sec.</p>
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Stroke adjustment – No control signal change

1. Apply power and, **wait for at least 10 seconds**.
2. Press and release the reset button to start the auto-stroke process.

The LED should be illuminated.

- First option:
The actuator will then travel in both directions to find it's limit and position itself according to the demand.
The LED will extinguish, the process is complete.
- Second option:
When the desired end position is reached, press and release the reset button. The actuator will now return back to its original position. (You can also press and release the reset button when it's reaches the original position.)
The LED will extinguish, the process is complete.

Programming – Change of control signal

1. Remove power and put all dip switches "OFF". (factory preset).
2. Apply power and, **within 10 seconds**, press and release the reset button. The LED should be blinking.
3. Select the control signal with dip switches:
 - **Digital** (On/Off or 3 point floating) - move switch **No1** "ON" and then "OFF".
 - **PWM** - move switch **No2** "ON" and then "OFF".
 - **Analog** (factory preset) - move switch **No3** "ON" and then "OFF".

4. Stroke adjustment - *see the stroke adjustment section above*.

Note, If PWM mode is selected:

- Time base : When programming is done,
if switch No3 is "on" time base is 0.1 to 5 sec. (resolution 20 msec.)
if switch No3 is "off" time base is 0.1 to 25 sec. (resolution 100 msec.)
* For 5 sec. time base, we strongly recommend a switch common connection for better position stability.
- Switch 24 VAC: Triac or dry contact, 40mA maximum switching current.
- Switch common: NPN transistor, SCR, Triac or dry contact 75mA maximum switching current.

Feedback selection (for up to down direction)

To select up to down direction put switch No1 "ON".

In Analog or 3 point floating mode you can program the feedback control.

- If switch No3 is "OFF": The feedback control is automatically reverse to 4 to 20 mA for up to down direction.
- If switch No3 is "ON": The feedback control is to 20 to 4 mA for up to down direction.

Zero and span calibration

This feature is applicable to analog control signal only.

1. Apply power and, **within 10 seconds** press and hold the reset button until the LED blinks once.
The Zero and span calibration process then start.
2. Release the reset button. The LED is now constantly illuminated.
3. Apply new minimum voltage.
It can be any value between 0 to 7 VDC, with an external 0 to 10 volt supply (ex: MEP).
4. Press and release the reset button to memorize the new minimum voltage. The LED blinks once.
5. Apply new maximum voltage.
It can be any value between 3 to 10 VDC, this value should be greater than the new minimum value.
6. Press and release the reset button to memorize the new maximum voltage. The LED blinks once.
The Zero and span calibration process is complete.

Note: To reset zero and span to 2 to 10 VDC (factory value). You just have to re-select the analog control signal mode, see Programming.