



Feature:

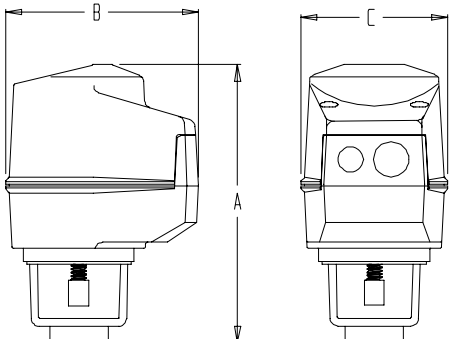
- Retrofit assembly available for the majority of the manufacturers of valves (with option –XX-Y) (see Retrofit option).
- Manuel override
- Maintenance free.
- Control signal fully programmable.
- Fail safe by *Enerdrive System*¹ (on model 2060).

	New Number
AQM2000A	AM000
AQM2060A	AM060
	AM000-30
	AM060-30

Technical Data	AQM2000A AM000	AQM2060A AM060	AM000-30	AM060-30
Fail safe - Enerdrive	No	Yes	No	Yes
Power consumption	6 VA	20VA Peak, 6VA	6 VA	20VA Peak, 6VA
Running time to ½ inch	60 sec force depending		30 sec force depending	
Force	100 lb. [450 N] at rated voltage			
Feedback	4 to 20 mA or 2 to 10 VDC adjustable			
Power supply	22 to 26 VAC or 28 to 32 VDC			
Electrical connection	18 AWG [0.8 mm ²] minimum			
Inlet bushing	2 inlet bushing of 5/8 in [15.9 mm] & 7/8 in [22.2 mm]			
Control signal	Analog, Digital or Pulse width modulation (PWM) programmable (factory set with Analog control signal)			
Maximum stroke	1 in [25.4 mm], electronically adjustable			
Direction	Reversible, normally up position (open) or normally down position (close) (factory set normally down)			
Ambient temperature	0°F to +122°F [-18° C to +50° C]			
Storage temperature	-22°F to +122°F [-30° C to +50° C]			
Relative Humidity	5 to 95 % non condensing.			
Weight	2 lbs. [0.9 kg]			

Warning: Do not use automatic screw driver on manual override

Dimensions



Dimension	Inches	Metric (mm)
A	6.93	176.0
B	4.80	121.9
C	3.60	91.4

Caution

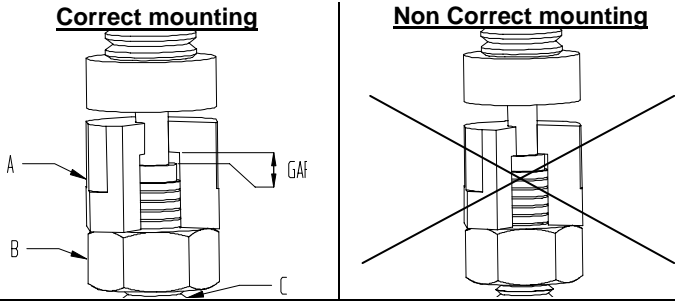
We strongly recommend that all neptronic® products be wired to a separate transformer and that transformer shall service only neptronic® products. This precaution will prevent interference with, and/or possible damage to incompatible equipment.
When multiple actuators are wired on a single transformer, polarity must be observed. Long wiring runs create voltage drop which may affect the actuator performance.

¹ Enerdrive System U.S.A. Patent #5,278,454



Mechanical installation

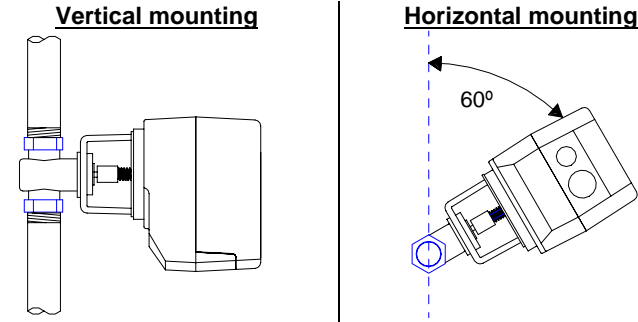
Mounting of the actuator on valve



1. Screw completely the valve shaft (C) unto the coupling of the actuator (A).
2. Unscrew the coupling (A) for 1/2 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.

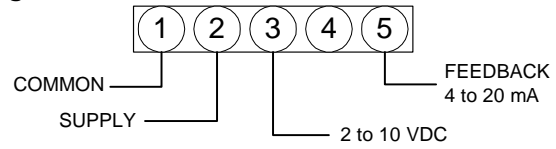
Mounting of the actuated valve on system



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.

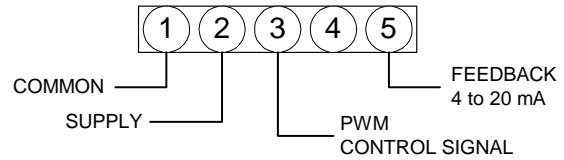
Wiring Diagrams

Analog

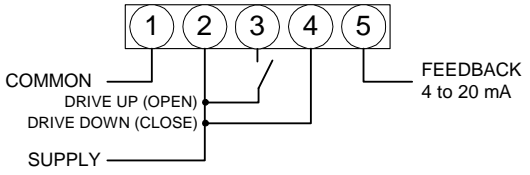


For 4 to 20 mA control signal
Connect one of the supplied 500 ohm resistors between pins 1 and 3.

PWM

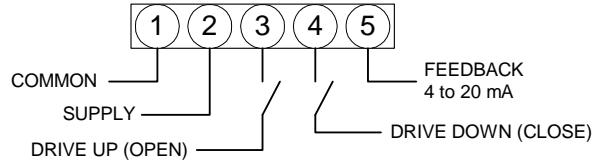


Digital - 3 wire / 2 position



Special consideration for Digital control
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.

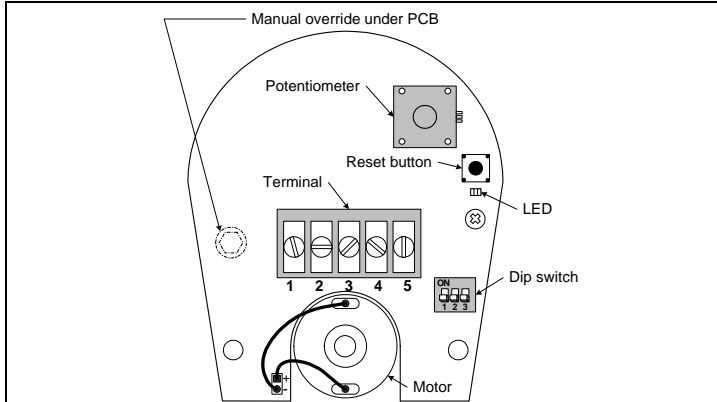
Digital - 4 wire / 3 point floating



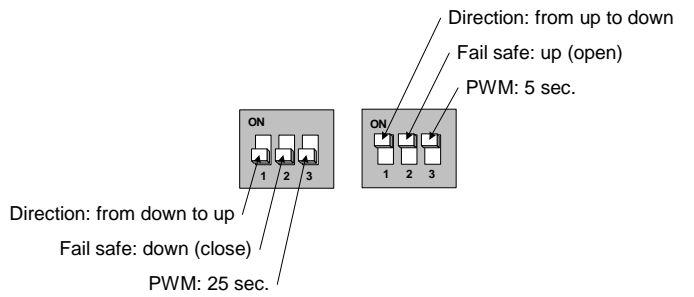
For 2 to 10 VDC output feedback

For any of above wiring configurations, connect one of the supplied 500 ohm resistors between pins 1 and 5.

PC Board



Dip switch settings



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 its 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 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. Remove power and put all dip switches "OFF". (factory preset).
2. 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.
3. Release the reset button. The LED is now constantly illuminated.
4. Apply new minimum voltage.
It can be any value between 0 to 7 VDC, with an external 0 to 10 volt supply (ex: MEP).
5. Press and release the reset button to memorize the new minimum voltage. The LED blinks once.
6. Apply new maximum voltage.
It can be any value between 3 to 10 VDC, this value should be greater than the new minimum value.
7. 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.

Retrofit option

