

# A Series Electric Actuators

## for ball & butterfly valves up to 6"

SERIES: AA – 400 in.lb.  
AB – 700 in.lb.  
AC – 1,100 in.lb.  
AD – 2,000 in.lb.

VolTAges: 12, 24, 115 or 220 VAC, 12 or 24 VDC

ENCloSuRE: Baked Hybrid Epoxy Coated Die Cast Aluminum  
NEMA 4X

### Beacon Visual Position Indicator and Declutchable Manual Override<sup>1</sup>



A Series on Type 21  
Ball Valve



A Series on Type 57  
Butterfly Valve

The A Series Electric Actuator is a reversible rotary unit with output torques up to 2000 in.-lb. These actuators power butterfly valves up to 6" size, as well as all sizes of Chemline ball valves up to 6". The A Series actuator features an epoxy coated die cast aluminum housing with NEMA 4X enclosure rating.

JJD also offers complete actuated ball, butterfly and diaphragm valves, assembled and bench tested. Actuation service is also available for all quarter-turn metal valves.

## Features

### Multiple Operation/Control Options

- 3-wire (standard)
- Adjustable Travel (standard)
- Manual Override (standard)
- 2-wire (optional)
- 3-position (optional)
- AS-i Bus communication (optional)
- Cycle Length Control (optional)
- Digital Positioner (optional)
- Failsafe (optional)
- Heater/Thermostat<sup>2</sup>
- Mechanical Brake (optional)
- Multiple-Turn (optional)

### Multiple Feedback Options

- Visual (standard)
- Feedback Switches (optional)
- Feedback Potentiometer (optional)
- Feedback Transmitter (optional)

### Special Inspection Labelled by CSA

(Canadian Standards Association)

### NEMA 4X Enclosure

- Waterproof, corrosion proof with baked hybrid epoxy coated die cast aluminum housing and stainless steel fasteners

### No Maintenance

- Permanently lubricated gear train
- Designed for 250,000 + cycles

### Thermal Overload Protection

- Thermal switch embedded into motor windings

### Extended Operating Temperature Range

- -10 to 60°C (15 to 140°F) (standard)
- Lower temperature reachable with anti-condensation/cold weather heater/thermostat (optional)

### Standard Mounting Dimensions

- ISO-5211 mounting bolt circle and drive

## technical

### Operating Voltage<sup>3</sup>

- 115 VAC (standard)
- 220 VAC, 12 or 24 VAC or VDC (optional)

### Electrical Conduit Entry

- 2 x 1/2" NPT

### Motor Direction

- Reversing

### Motor Cycle Time

- Fixed (standard)
- Adjustable (optional)

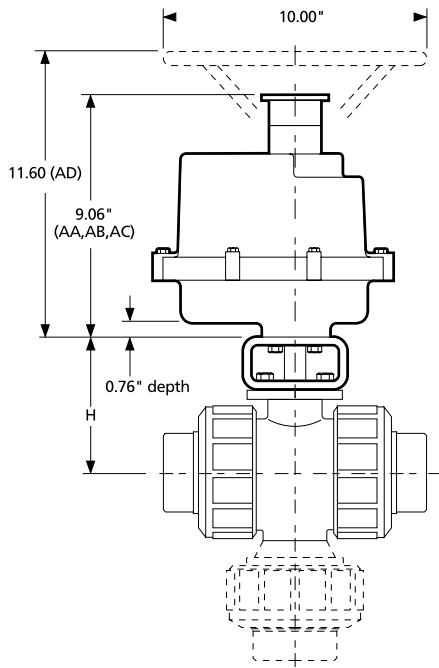
<sup>1</sup> "D" size actuator has declutching hand wheel override

<sup>2</sup> Optional on AA and AB models, standard on AC and AD models

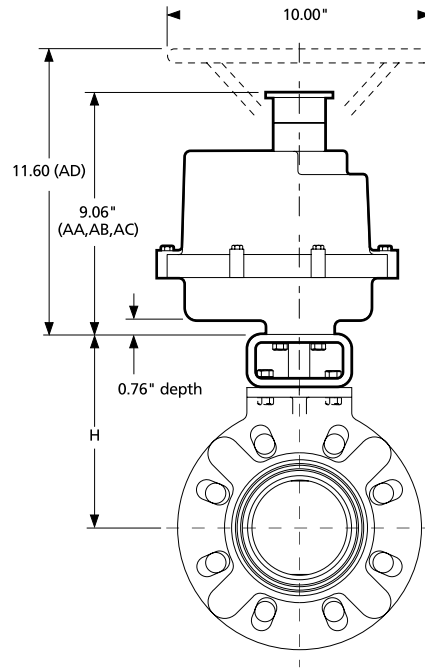
<sup>3</sup> 150 and 220 VAC are rated 50/60Hz, CE approved for Europe

# A Series Electric Actuators

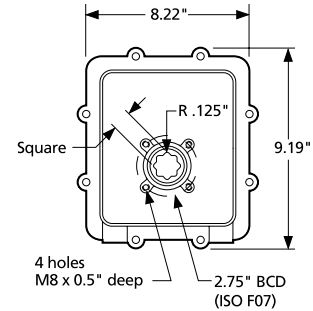
## DIMENSIONS INCHES



**Type 21 True Union and  
Type 23 Multi Port Ball Valves**



**Type 57 Butterfly Valves**



**Bottom View**

**Square Size**

up to June 2012 = 0.948"  
after June 2012 = 0.669" (17mm)

## DIMENSION "H" INCHES

Valve Size	Valve Type						
	Type 21 Ball	Type 23 Multiport	Type 57 Butterfly	ChemValve Butterfly	HC Series Ball	Type 14 Diaphragm	CG Series Gate
1/2	2.76	2.76	-	-	-	3.55	-
3/4	3.01	3.01	-	-	-	3.61	-
1	3.29	3.29	-	-	-	3.77	-
1-1/4	3.64	3.98	-	-	-	5.94	-
1-1/2	3.98	3.98	5.65	-	-	6.50	9.00
2	4.43	4.43	5.95	6.89	-	7.02	10.46
2-1/2	5.12	5.47	6.35	7.52	-	9.52	-
3	5.47	5.47	6.65	8.27	-	10.25	14.06
4	6.97	6.97	7.35	9.05	6.75	11.00	-
5	-	-	8.80	-	-	-	-
6	-	-	9.30	10.31	8.30	-	-

Valves are not to scale. For valve dimensions and parts refer to separate valve data sheets.

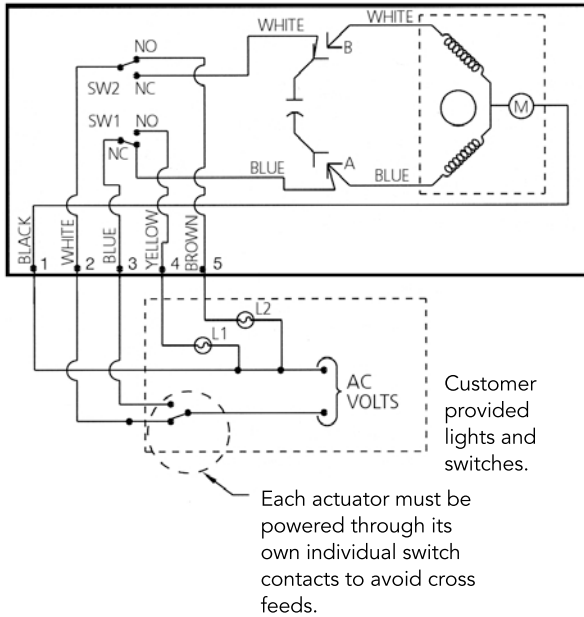
## SPECIFICATIONS

Model	Torques (in.-lbs.)	115 VAC (x=1)		220 VAC (x=2)		12 VDC (x=3)		24 VDC (x=4)		12 VAC (x=5)		24 VAC (x=6)		Cycle Time/90° (sec.)	Weight (lbs.)
		Amp Draw	Duty Cycle	Amp Draw	Duty Cycle	Amp Draw	Duty Cycle	Amp Draw	Duty Cycle	Amp Draw	Duty Cycle	Amp Draw	Duty Cycle		
AAx	400	0.50	100%	0.40	75%	2.0	75%	4.0	75%	2.0	75%	3.0	75%	10	15.3
ABx	700	0.75	75%	0.60	50%	2.0	75%	4.0	75%	2.0	75%	3.0	75%	10	15.3
ACx	1,100	0.50	100%	0.40	75%	2.0	75%	4.0	75%	2.0	75%	3.0	75%	25	15.5
ADx	2,000	1.00	50%	0.60	50%	2.0	75%	4.0	75%	2.0	75%	3.0	75%	25	18.3

Current draw values are for actuators with rotors locked. Duty cycles are for ambient temperature 20°C (68°F).

# A Series Electric Actuators

## AC WIRING



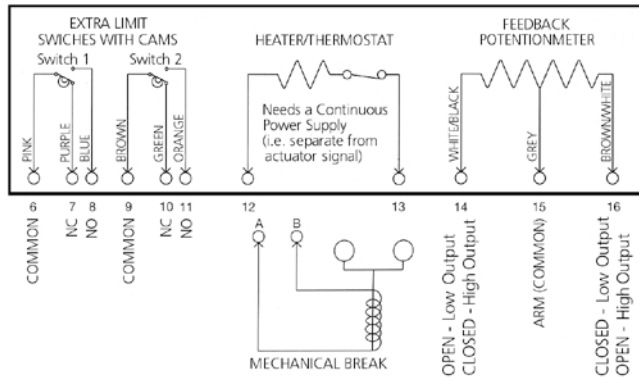
## VALVE OPERATION

- 1. Black** – Neutral
- To Open** – Power to White (Terminal 2)
- To Close** – Power to Blue (Terminal 3)
- L1** – Possible Customer Equipment
- L2** – Possible Customer Equipment

## NOTES:

1. Actuator shown in counter clockwise extreme of travel, or 'open' position.
2. Motor has a thermal protector shown as (M) in the diagram.
3. ON-OFF actuator wiring shown. For other versions (Positioning, Failsafe) see operating manual.

## ACCESSORIES WIRING



## OPERATIONAL/CONTROL OPTIONS

- **2-Wire Control** – For direct wiring timers, level switches, pump control, etc.
- **3-Position Control** – For 3-way ball valves or dribble control on 2-way valves
- **AS-i Bus Communication** – Available with 24 VDC model for 30 VDC ASi systems
- **Cycle Length Control Module** – For lengthening closing/opening times when water hammer is a concern
- **Digital Positioner** – Onboard digital position controller accepts 4 to 20 mA, 1 to 5 VDC, 0 to 5 VDC, 0 to 10 VDC or other inputs. These units are easier to calibrate, have faster response and provide more precise proportional control.
- **Failsafe Capability** – Onboard backup battery pack powers actuator in case of power failure
- **Heater/Thermostat** – For outdoor or humid environments. Maintains internal temperature of actuator at 5°C (40°F)
- **Mechanical Brake** – To eliminate oscillation when seating butterfly valves or large ball valves
- **Multi-Turn Models** – For diaphragm and gate valves

## FEEDBACK OPTIONS

- **Feedback Switches** – For end-of-travel position feedback, including 3-position option
- **Feedback Potentiometer** – For feedback indicating the precise valve position to a remote location, or to allow "jogging" control
- **Feedback Transmitter** – A circuit board coupled with a feedback potentiometer provides 4 to 20 mA output used by other equipment (PLC, data logger, etc.)

# JJD

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