

# E Series Electric Actuators

## for ball & butterfly valves up to 4"

SERIES: ER10 – 90 in.lb.  
ER20 – 180 in.lb.  
ER35 – 310 in.lb.  
ER60 – 530 in.lb.  
ER100 – 880 in.lb.

VolTAgES: 115/220 VAC, 12/24 VDC, 24 VAC

EnCloSuRE: Polyamide 6.6  
NEMA 4X



E Series on SM2 Series  
True Union Ball Valve

The **E Series** Electric Actuator is a reversible rotary unit with output torques up to 880 in.-lb. These units are ideal for all ball and butterfly valves up to 4". The E Series is compact, light weight and has a plastic housing. A large black handle provides manual override and position indicator.

**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

- 2 & 3-wire (standard)
- Adjustable Travel (standard)
- Manual Override (standard)
- Bus communication (optional)
- Digital Positioner (optional)
- Failsafe (optional)
- Cold Weather Heater/Thermostat (standard)

### Multiple Feedback Options

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

### CSA Approved

### NEMA 4X Enclosure

- Waterproof, corrosion proof with high impact Polyamide 6.6 housing and stainless steel fasteners

### No Maintenance

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

### Thermal Overload Protection

- Thermal switch embedded onto control board

### Extended Operating Temperature Range

- -10 to 60C (15 to 140°F) (standard)

### Standard Mounting Dimensions

- ISO-5211 mounting bolt circle and drive

## technical

### Operating Voltage

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

### Electrical Conduit Entry

- 2 x 1/2" NPT

### Motor Direction

- Reversing

### Motor Cycle Time

- Fixed (standard)



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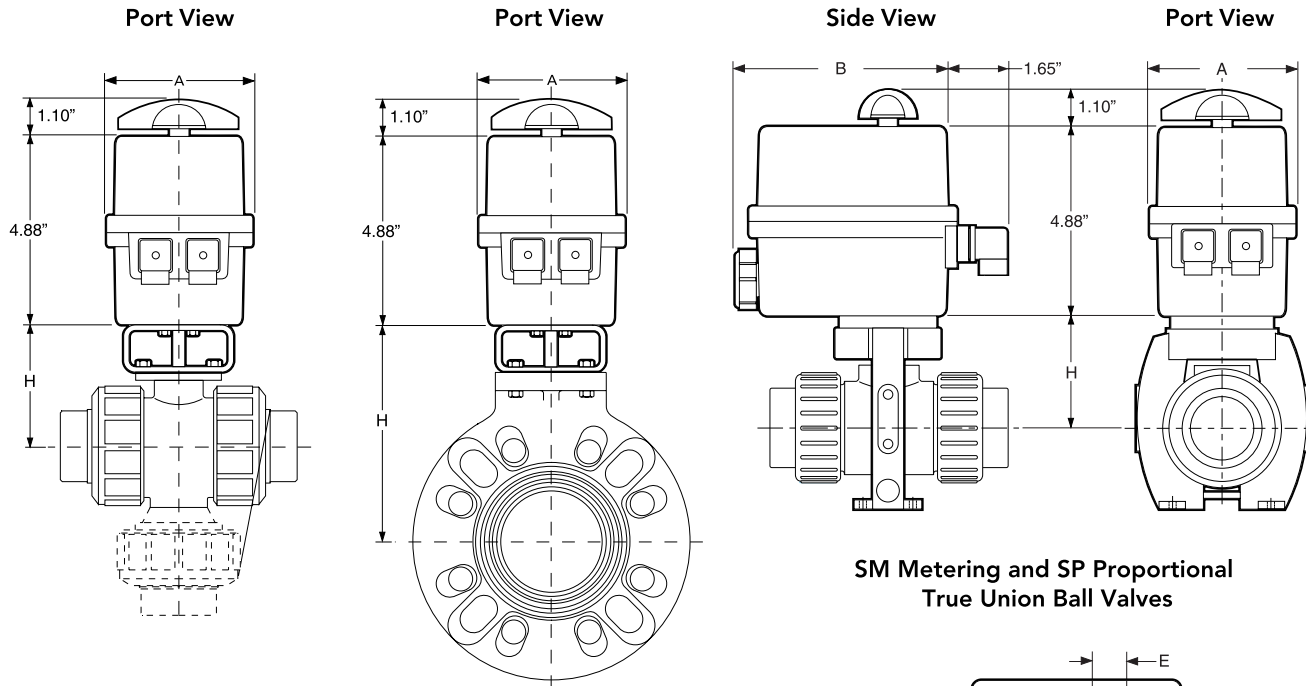
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# E Series Electric Actuators

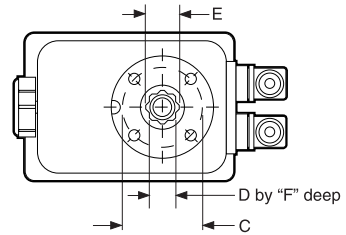
## DIMENSIONS INCHES



Type 21 True Union and Type 23 Multi Port Ball Valves

Type 57 Butterfly Valves

SM Metering and SP Proportional True Union Ball Valves



Bottom View



## DIMENSION INCHES

Model	A	B	C/Thread	D	E Inches (ISO)	F
ER10	3.62	5.35	1.42 (F03) M5	0.55	0.551" 14mm	0.640
ER20	3.62	5.35	1.65 (F04) M5	0.55	0.551" 14mm	0.640
ER35	5.04	5.94	1.97 (F05) M6	0.87	0.551" 14mm	0.945
ER60	5.04	5.94	1.97 (F05) M6	0.87	0.866" 22mm	0.945
ER100	5.04	5.94	2.76 (F07) M8	0.87	0.866" 22mm	0.945

## DIMENSION "H" INCHES

Valve Size	Valve Type				
	Type 21 Ball	Type 23 Multiport Ball	SM Metering/SP Proportional Ball	Type 57 Butterfly	ChemValve Butterfly
1/2"	2.76	2.76	1.97	—	—
3/4"	3.01	3.01	2.36	—	—
1"	3.29	3.29	2.60	—	—
1-1/4"	3.64	3.98	2.91	—	—
1-1/2"	3.98	3.98	3.76	5.65	—
2"	4.43	4.43	4.90	5.95	6.89
2-1/2"	5.12	5.47	—	6.35	7.52
3"	5.47	5.47	—	6.65	8.27
4"	—	—	—	7.35	9.05

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

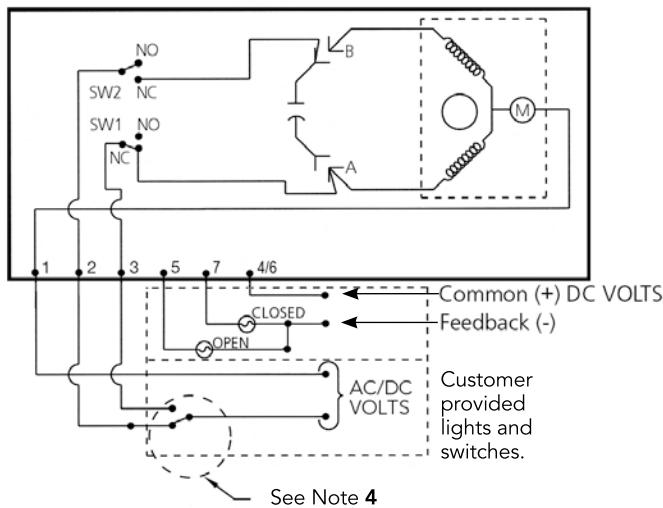
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## SPECIFICATIONS

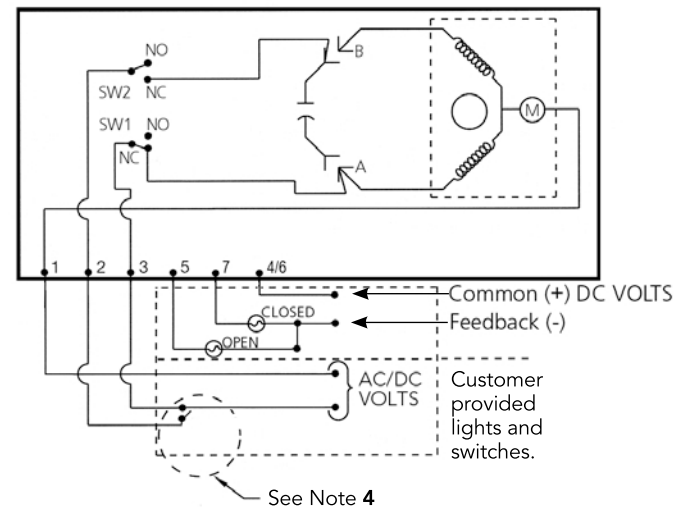
Model	Running Torques		115 VAC / 220 VAC (x=12)		12 to 24 VDC & 24 VAC (x=346)		Cycle Time/90° (sec.)	Weight (lbs.)
	(in.-lbs.)	Nm	Power Draw (Watts) <sup>1</sup>	Duty Cycle	Power Draw (Watts) <sup>1</sup>	Duty Cycle		
ER10	90	10	15W	80%	15W	80%	11	3.0
ER20	180	20	15W	80%	15W	80%	12	3.0
ER35	310	35	15W	80%	15W	80%	7	6.2
ER60	530	60	45W	80%	45W	80%	12	6.9
ER100	880	100	45W	80%	45W	80%	23	6.9

<sup>1</sup>Power draw values are for actuators with locked rotors.

## WIRING, 3-WIRE CONTROL



## WIRING, 2-WIRE CONTROL



## 3-WIRE OPERATION

- Neutral/Negative** – To Terminal 1 (Constant)
- To Open** – Hot/Positive to Terminal 2
- To Close** – Hot/Positive to Terminal 3

## 2-WIRE OPERATION

- Neutral/Negative** – To Terminal 1 (Constant)
- To Open** – Jumper between Terminal 2 and Terminal 3
- To Close** – Hot/Positive to Terminal 3 (Constant)

## NOTES:

1. Actuator shown in counter clockwise extreme of travel, or 'open' position.
2. Motor has a thermal protector as shown by (M) in the diagram.
3. ON-OFF actuator wiring shown. For other versions (Positioning, Failsafe) see operating manual.
4. Each actuator must be powered through its own individual switch contacts to avoid cross feeds.

## OPERATION/CONTROL OPTIONS

- **Digital Positioner** – Onboard digital position controller accepts 4 to 20 mA, 0 to 20 mA, 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
- **Bus Communication** – Proprietary bus communication/operation capability
- **Bluetooth™ Wireless Control** – For maintenance/verification when actuator is out of physical reach

## FEEDBACK OPTIONS

- **Extra Feedback Switches** – For extra end-of-travel position feedback
- **Feedback Potentiometer** – To feedback 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.)





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