



ELECTRIC ACTUATOR OPTIONS & ACCESSORIES

The basic options and accessories listed in this section represent many of the most commonly used for electric actuation. Contact Spears® for any desired accessories, options, functions, or special controls not listed. For differentiation, “Option” is used to identify a basic variation in the actuator while “Accessory” is used to identify an add-on function to the actuator. Both options and accessories are factory configured to order on the actuation package.

Overview of Basic Options & Accessories Available

Options & Accessories	Electro Series Ball Valves	Premium Electric TU Ball Valves	Premium Electric Butterfly Valves	Premium Electric Diaphragm Valves
24 VAC	Option	Option	Option	Option
230 VAC	Option	Option	Option	Option
230 VAC 3-phase, 60Hz	--	Option	Option	Option
230 VAC 3-phase, 50 Hz	--	Option	Option	Option
12 VDC	Option	Option	Option	Option
24 VDC	Option	Option	Option	Option
NEMA 4X, 7, 9 Rating	4X Standard	Option	Option	Option
Declutchable Manual Override	--	Option	(Standard Feature)	Option
Duty Cycle Upgrade	Option	Option	Option	Option
Spring Return (Fail Safe)	--	Option	Option	--
Positioner Board (modulating)	--	Accessory	Accessory	Accessory
Transmitter	--	Accessory	Accessory	Accessory
“2-Wire” Control Relay	Accessory	Accessory	Accessory	--
Position Indicator (Visual)	Standard	Standard	Standard	--
LED Indicator Lights	--	Accessory	Accessory	Accessory
Heater & Thermostat	--	Accessory	Accessory	Accessory
Limit Switch Sets	--	Accessory	Accessory	Accessory
Torque Sensor	--	Accessory	Accessory	Accessory
Speed Controller	--	Accessory	Accessory	Accessory
Friction Brake	--	Accessory	(Standard Feature)	--
ID Tag - SS	Accessory	Accessory	Accessory	Accessory

Contact Spears® for any desired accessories, options, functions, or special controls not listed in this guide.

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Standard (2-position) Actuator Voltage Options

Voltage options and maximum current draw (Lock Rotor Current) are listed for each type and size of valve with 2-position (open/close) actuation. See Modulating Service Option for variable position actuators and applicable voltages.

Electro Series Ball Valves (All 1/2" - 2")

Voltage Options	Loc Roter AMP Electro-50	Loc Roter AMP Electro-100
12 VAC	2.4	N/A
24 VAC	2.1	7.8
230 VAC	.5	1.5
12 VDC	.3	.2
24 VDC	.2	.2
115 VAC	.6	1.9

True Union 2000 Ball Valves

Voltage Options	Size	Max. Current
24 VAC	1/2" - 2"	2.5
	2-1/2" - 4"	3.2
	6"	3.2
230 VAC	1/2" - 6"	.38
	12 VDC	1/2" - 2"
24 VDC	2-1/2" - 6"	4.0
	1/2" - 2"	2.44
	2-1/2" - 6"	3.2

Diaphragm Valves

Voltage Options	Size	Max. Current
24 VAC	1/2" - 4"	3.2
230 VAC	1/2" - 4"	.38
12 VDC	1/2" - 2"	4.0
	2-1/2" - 4"	N/A
24 VDC	1/2" - 2"	2.6
	2-1/2" - 4"	N/A

Butterfly Valves

Voltage Options	Size	Max. Current
24 VAC	1-1/2" - 6"	3.2
	8" - 10"	3.2
	12"	20
230 VAC	1-1/2" - 10"	.38
	12"	2.8
12 VDC	1-1/2" - 6"	4.0
	8" - 10"	4.0
	12"	14
24 VDC	1-1/2" - 6"	3.2
	8" - 10"	3.2
	12"	20



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Enclosure NEMA Rating Options

Standard enclosures are NEMA 4. The following NEMA ratings are available for all True Union Ball Valves, Butterfly Valves and Diaphragm Valves (see NEMA Ratings in Terminology & Definitions for additional description detail).

Enclosure Rating	General Description
NEMA 4	Watertight & Dust Tight
NEMA 4X	Watertight & Dust Tight with corrosion resistance
NEMA 7	Explosion Proof (class I, division 1, groups A, B, C, D)
NEMA 9	Explosion Proof (class II, division 1, groups E, F, G)

Declutchable Manual Override Option

Available for all Premium Electric actuated valves.

Valve Type	Standard Actuator Package	Declutchable Option Available
True Union 2000 Ball Valve 1/2" - 3"	Manual	Yes
True Union 2000 Ball Valve 4" - 6"	Declutchable	(standard)
Butterfly Valve - All	Declutchable	(standard)
Diaphragm Valve - All	None	Yes

Slightly different than straight manual override, *Declutchable* Manual Override disengages the actuator gear train for manual operation of the valve. Valves with this option have a hand wheel mounted on top of the actuator for manual valve operation. Spears® True Union Ball Valves and Butterfly valves include either straight Manual or Declutchable Override as part of standard actuation package, as indicated in the Table.

Duty Cycle Upgrade Option

Available for all Premium Electric actuated valves. Upgrades in duty cycles use heavier motors to handle heat build up from extended operation. Standard duty cycles are listed for each valve type and are upgradeable to extended cycles as indicated. Valves with Modulating Service option are equipped with a minimum of a 75% duty cycle as standard. Contact Spears® if a higher Duty Cycle is required

Valve Type	Size Range	Standard Duty Cycle	Upgrade To 75%
Electro Series	1/2" - 2"	25%	X
True Union Ball Valve	1/2" - 2"	75%	--
True Union Ball Valve	2-1/2" - 4"	25%	X
Butterfly Valve	1-1/2" - 10"	25%	X
Butterfly Valve	12"	100%	--
Diaphragm Valve	1/2" - 6"	25%	X

Spring Return (Fail Safe) Option

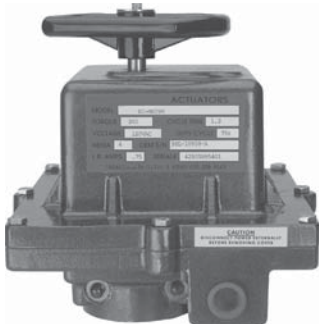
Available for all Premium Electric actuated Ball valves and Butterfly valves. An internal spring in the actuator is configured to either open or close upon loss of power supply. Special gear clutch uncouples motor during spring return. Operation can be specified as either fail-open when spring return open is desired or fail-close when spring return close is desired.

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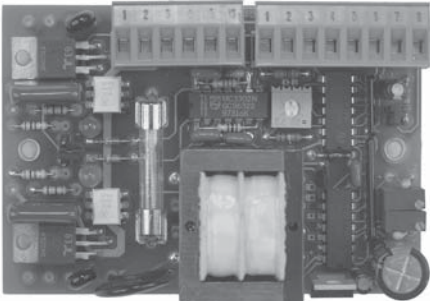
“2-Wire” Control Relay

Available for Premium Electric actuated Ball valves and Butterfly Valves. Special control switch setup operates the valve through internally mounted control relay. Valve opens when control switch is open and closes when control switch is closed. Uses 4-wire connection with 2 wires to line voltage and 2 wires to SPST control switch. Available either in normally closed or normally open configuration.



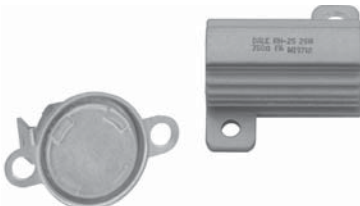
LED Position Indicator Lights

Available for all Premium Electric actuated valves. LED (light emitting diode) red/green indicator lights mounted on actuator enclosure to designate open/closed position.



Positioner Board (Modulating)

Available for all Premium Electric actuated valves. Modulation is used to control or throttle flow in response to an external control signal. An internally mounted, solid state positioner board accurately controls valve position from open to close. Available in the actuator voltages and input signals shown **Note:** Modulating Service option includes Duty Cycle Upgrade to a minimum of 75%.



Heater and Thermostat

Available for all Premium Electric actuated valves. Mounted internally, heats the inside of the enclosure in low temperature environments to prevent condensation and keep internal lubricants fluid. The thermostat activates the heater when the enclosure internal temperature drops below the set point. There are a variety of thermostats available and a set point must be specified at the time of ordering.

Modulating Actuator Voltage	Input Signal
115 VAC	4-20mA, 0 - 5 VDC, 0 - 10 VDC
230 VAC	4-20mA, 0 - 5 VDC, 0 - 10 VDC
24 VAC	4-20mA, 0 - 5 VDC, 0 - 10 VDC
24 VDC	4-20mA, 0 - 5 VDC, 0 - 10 VDC

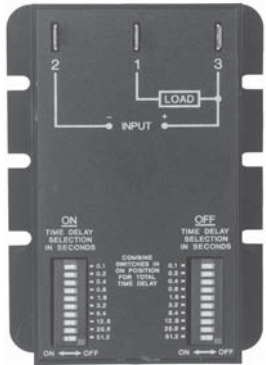


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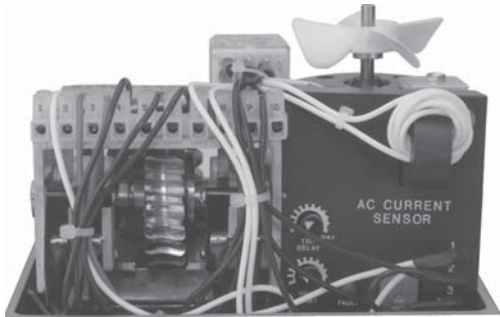


Auxiliary Limit Switches (Provide in sets of 2)
 Available for all Premium Electric actuated valves. Additional internally mounted single pole double throw limit switch (SPDT) independent from the motor switches. Typically used for indicator lights, auxiliary equipment, etc. Actuation packages accept from 1 to 2 additional sets of auxiliary limit switches as indicated. When ordering replacement sets, specify hole size of cams (either 3/8" or 1/2").

Valve Type	Auxiliary Limit Switch Sets
True Union Ball Valve	
1/2" - 2"	1
2-1/2" - 3"	1
4" - 6"	2
Butterfly Valve	
1-1/2"	1
2" - 10"	2
12"	2
Diaphragm Valve - all Sizes	

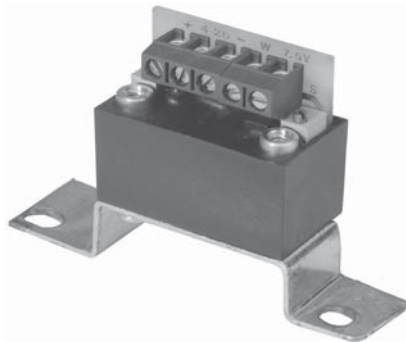


Speed Controller
 Available for all Premium Electric actuated valves. Internally mounted relays (not shown) and solid state timer allow variable control of valve cycle time (speed) by selecting combinations of ON time and OFF time options. Rate may be slowed, but cannot exceed the standard cycle time specified for the actuator.



Torque Sensor
 Available for all Premium Electric actuated valves. Internally mounted sensor is adjustable to specific torque limits to avoid damage to valve in the event of blockage.

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Transmitter

Available for all Premium Electric actuated valves. The Transmitter module is normally used with the 4-20mA Positioner Board and the board's power supply. It can also be used as a stand alone feedback transmitter when no position controller is used, but will require an external power supply for stand alone application. This internally mounted module provides a 4-20mA output signal directly proportional to the Positioner Board feedback potentiometer. This signal can be used by a remote instrument to monitor or display actuator position. Zero and span adjustments allow adjustment of the Transmitter's 4-20mA signal to correspond with the zero and span positions set by the Positioner Board.



Custom ID Tag

Stainless steel valve/actuator ID Tag imprinted to user specified identification criteria. Each tag is 1/2" x 3" and accommodates up to 3 lines of text, maximum of 12 characters and spaces per line.



Friction Brake

Available for all Premium Electric actuated valves. Internally mounted device which is used to eliminate mechanical "coast" of the actuator motor at the end of its cycle. Brakes are standard on all electrically actuated Butterfly Valves and not applicable to Diaphragm Valves.