

J3CS Smart Electric Actuator Function: POWER OPEN - POWER CLOSE , STAYS PUT ON POWER FAILURE



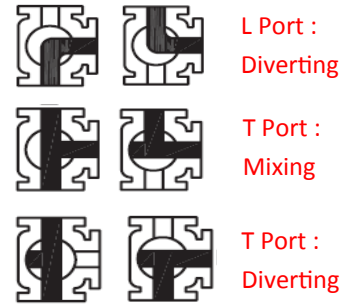
Type: E1303S

Electric actuator direct mounted



Type: E1313S

Electric actuator fitted



### 3 Way Ball Valve - Flow paths

L Port: Divert duty only

T Port: Divert or Mixing duties

### Main J3CS Smart electric actuator features:

- LED light for continual visual actuator status feedback.
- Fully weatherproof smart industrial actuator.
- Multi-voltage 24-240V capable actuator.
- All external electrical connections, no need to remove cover .
- Selectable manual override facility.
- Thermostatic anti-condensation heater.
- Electronic torque limiter.
- End of travel switches for remote open/ closed indication.
- CE marked.
- EU manufactured by J+J.

### Applications:

Water, oil, air and most non-corrosive media, subject to compatibility with wetted parts in contact with media. Not for use on potable water & NOT recommended for use on steam.

Electrical actuators sized on a maximum differential pressure of 10 bar wet service, operated at least once per day. If the intended duty differs from these parameters, or is dry (air or gas) call to check JJ valve actuator sizing as a larger output actuator may be required.

Maximum working temperature of a direct mounted assembly is +70C. For higher working temperatures , consider models that have a mounting kit or TSM stem extension between the valve and smart actuator which uses air cooling to dissipate the rising heat from the valve away from the valve actuator. Should the J3CS smart actuator see more than +70C it will malfunction.

### Typical Kv Values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Kv	2.8	3.0	3.9	7.9	13.0	20.7	38.7	54.0

Kv = m<sup>3</sup> per hour with a 1 bar pressure drop across the valve  
 CV = US gallons per hour with a 1psi pressure drop across the valve  
 Cv = Kv / 0.86

Specifications:	
Actuator housing	UV Protected Polyamide
Supply voltage range	24-240V AC or DC
IP Rating	IP67
Actuator temp limits	-20 to +70°C
Assembly temp limits	E1303S +70°C
	E1313S +105°C
	E1323S +100°C
Valve body	Nickel plated brass
Valve ball	Chrome plated brass
Valve seats	PTFE
Valve Pressure rating	UTI 3/4" 30 bar , rest 16 bar at
Valve temp limits	-20 to +120°C
Size range	1/4" to 2"

### 3 Way ball valve information:

Full bore 3 way ball valve providing full flow and a relatively low pressure drop across the valve. Designed for automation with integrally cast ISO5211 actuator mounting platform. End connections are threaded BSP female.

3 Way brass ball valves are used to change the direction of flow as opposed to 2 way ball valves that simply isolate the flow, and are available as either a L-port or T-port design. L-port diverter valves typically divert flow from the centre port to either output port. T-port valves are used for either mixing or diverting type flow functions. As a diverting valve the T port valve provides straight through flow in one position.

### J3CS ON OFF ELECTRIC ACTUATOR

Power open, power close, stays put on loss of external power.

#### How this electric 1/4 turn valve works (on-off):

Electrically operated valves are driven by a motor and gearbox. On receipt of a continuous voltage signal the motor runs and, via a gearbox in the J+J smart electric actuator, rotates the valve stem. The motor stops at the desired position (usually 0° or 90°) by internal cams striking micro-switches. The smart valve actuator remains in this position, with the voltage still applied continuously, until switched and a continuous voltage reversing signal is applied, which runs the motor in the opposite direction, reversing the rotation until separate set of internal cams strike separate set of micro-switches.

#### Options:

It is possible to change the J3CS actuator's function by installing user friendly plug and play function conversion kits. These will provide the following alternative functions:

#### Failsafe J3CS Actuator

J3CS fails to pre-set position using our BSR (Battery 'Spring Return' system which creates an alternate power supply should the external power fail.

#### Modulating J3CS Actuator

Movement of the J3CS actuator is proportional to an input control signal, typically 4-20mA or 0-10V, by installing our DPS (Digital Positioning System) user friendly plug and play kit. There are options for how the J3CS modulating reacts to loss of the control signal, but it will stay put on loss of external power.

Configuration options:

- 1) Closes on loss of control signal
- 2) Opens on loss of control signal
- 3) Stays put on loss of control signal

#### Failsafe Modulating J3CS Actuator

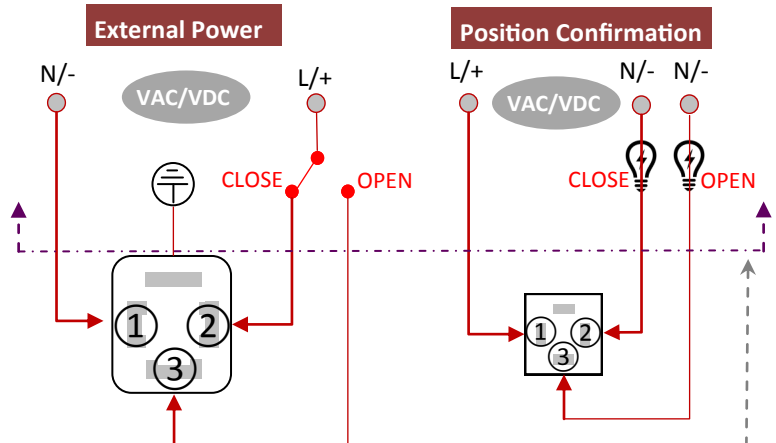
Failsafe modulating by installing the J+J BSR (Battery 'Spring Return') plug and play kit, operates functionally as a modulating electric actuator as described above, but will fail as per the DPS setting on loss of external power, as follows:

Configuration options:

- 1) Closes on loss of control signal, or on loss of external power
- 2) Opens on loss of control signal, or on loss of external power
- 3) Stays put on loss of control signal

## Electrical Connection - Wiring of DIN Plugs

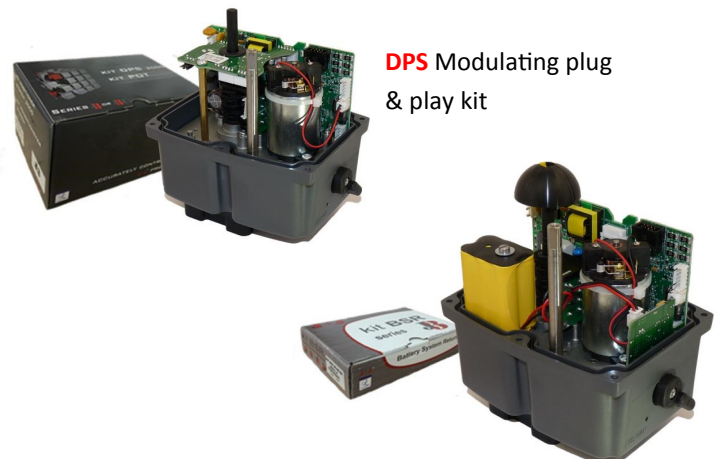
### J3CS ON-OFF & FAILSAFE WIRING (Same connection for either)



Note: Above line above is customer supplied.

In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.

### Optional Plug & Play Function Conversion Kits

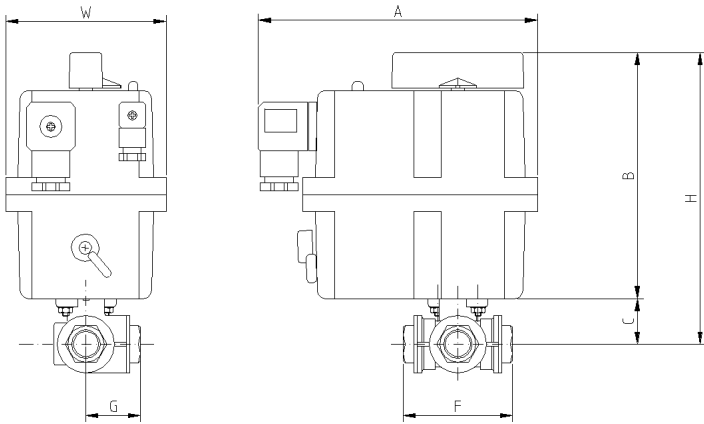


### Installing J+J Plug & Play function conversion kits

Failsafe and/or modulating function is quick and easy to achieve in the J3CS smart electric actuator by the fitting of the user friendly failsafe and/or modulating plug & play function conversion kits to the standard on-off J3CS smart valve actuator. When actuated valves are ordered with failsafe, modulating or failsafe modulating function, J+J install and test the plug and play function conversion kits. They can however be easily retro-fitted to J3CS smart electric actuators should the on-off function requirement (supplied as standard function), change.

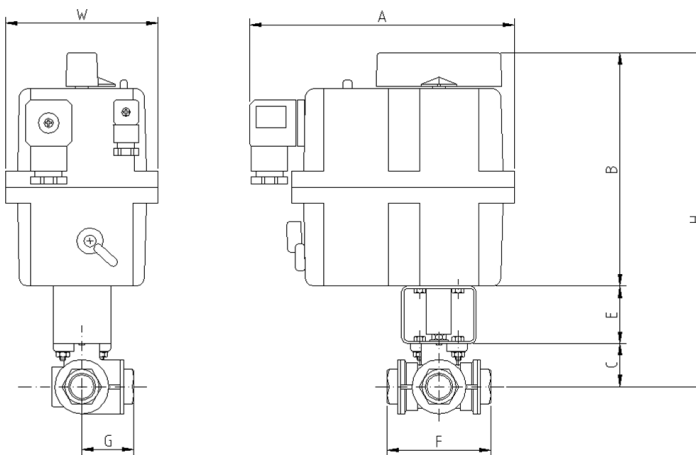
**Typical Dimensions:**

Type: **E1303S** Actuator direct mounted to valve



E1303S Dimensions remain unchanged for all versions							
- On-off, failsafe, modulating and failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/4"	20	177	50	67	180	110	2.1
3/8"	20	177	50	67	180	110	2.1
1/2"	20	177	50	77	182	110	3.7
3/4"	20	177	50	87	191	110	2.6
1"	20	177	50	105	196	110	3.1
1 1/4"	20	177	50	123	209	110	4.3
1 1/2"	35	177	70	139	245	110	6.6
2"	55	177	70	166	281	110	10.8

Type: **E1313S** Actuator fitted to valve via a bracket and drive adapter



E1313S Dimensions remain unchanged for all versions							
- on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/4"	20	177	50	67	230	110	2.3
3/8"	20	177	50	67	230	110	2.3
1/2"	20	177	50	77	232	110	3.9
3/4"	20	177	50	87	241	110	2.8
1"	20	177	50	105	246	110	3.3
1 1/4"	20	177	50	123	259	110	4.5
1 1/2"	35	177	70	139	295	110	6.8
2"	55	177	70	166	331	110	11.1

Type: **E1320S** Actuator fitted to valve via a tubular stem extension

E1323S Dimensions remain unchanged for all versions							
- on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/4"	20	177		67		110	
3/8"	20	177		67		110	
1/2"	20	177		77		110	
3/4"	20	177		87		110	
1"	20	177		105		110	
1 1/4"	20	177		123		110	
1 1/2"	20	177		139		110	
2"	20	177		166		110	