

J3CS Smart Electric Actuator Function: MODULATING CONTROL , STAYS PUT ON POWER FAILURE



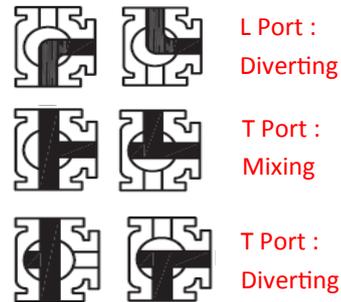
Type: E1305S

Electric actuator direct mounted



Type: E1315S

Electric actuator fitted via kit



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.

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 = m³ 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 | E1305S +70°C |
| | E1315S +105°C |
| | E1325S +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 MODULATING ELECTRIC ACTUATOR

The J3CS Modulating is used where the position of the actuator is required to be set by a control input signal. Unlike an on-off electric actuator, a modulating actuator will rarely travel from open to closed in one movement, it may only be required to alter its position by a few degrees. This is achieved by installing our DPS (Digital Positioning System) - installed by J+J when ordered as a modulating electric actuator.

How this electric 1/4 turn valve works (Modulating):

Power permanently connected, movement of the J3CS actuator is then proportional to an input signal, typically 4-20mA or 0-10V. The DPS processor continually compares the physical position of the J3CS output shaft to the input signal, and if a difference exists, controls the motor to eliminate the difference. An output signal is provided as standard. The reaction from the J3CS actuator to a loss of control signal can be set as below, 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

The DPS in the J3CS uses the latest magnetic position sensing technology which, when combined with digital processing, produces very accurate modulating control. This is a very Smart Red Box.

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:

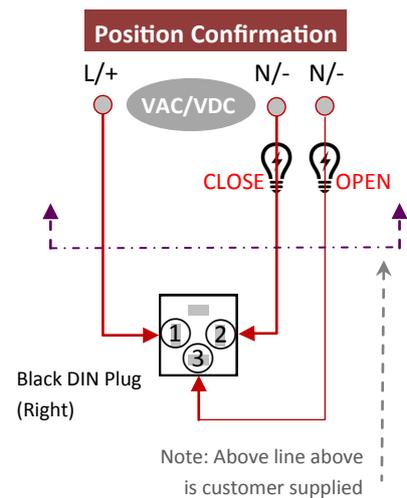
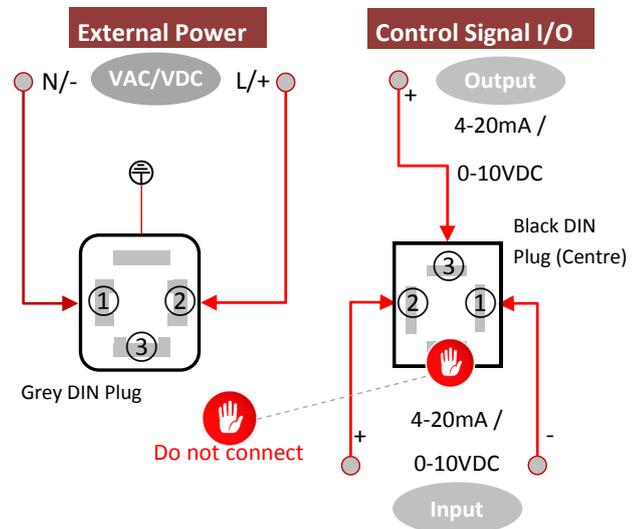
Failsafe Modulating J3CS Actuator

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

Configuration options:

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

J3CS MODULATING WIRING



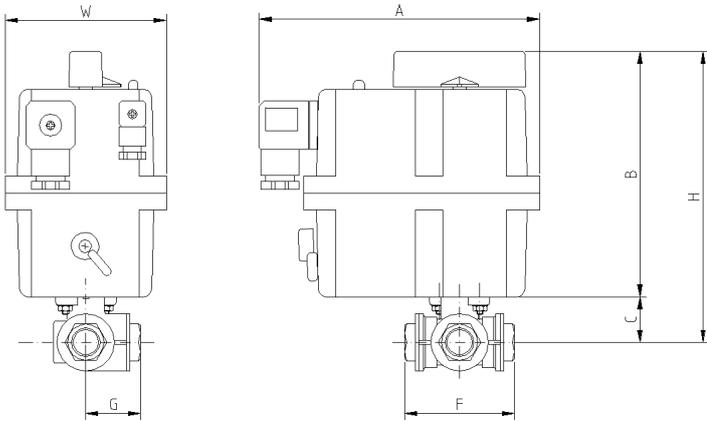
In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.



BSR Failsafe plug & play kit can be added to create failsafe modulating function.

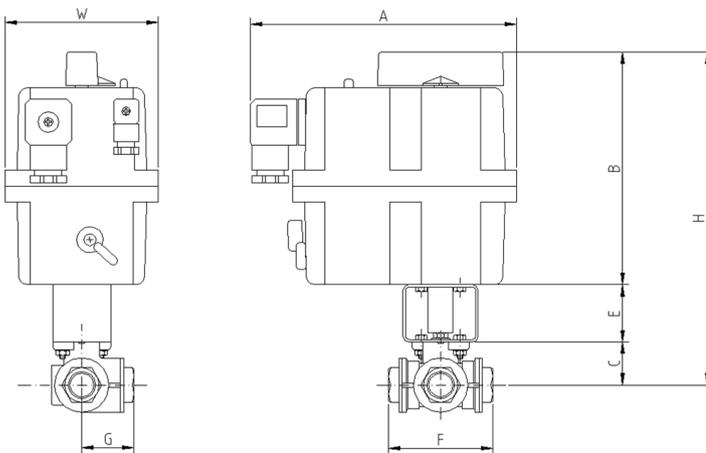
Typical Dimensions:

Type: **E1305S** Actuator direct mounted to valve



| E1305S 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: **E1315S** Actuator fitted to valve via a bracket and drive adapter



| E1315S 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: **E1325S** Actuator fitted to valve via a TSM stem extension

| E1325S 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 | |