

J3CS Smart Electric Actuator Function: FAILSAFE MODULATING CONTROL, FAILS SAFE ON LOSS OF POWER



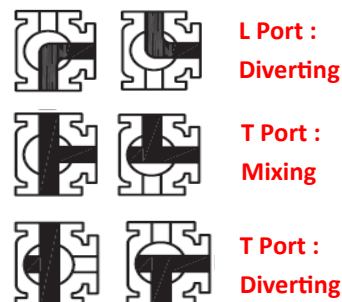
Type: E2306S

Electric actuator direct mounted



Type: E2316S

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 many corrosive media, subject to compatibility with wetted parts in contact with media. Can be used on potable water but not WRAS approved. NOT recommended for use on steam.

JJ 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 electric actuator sizing as a larger output valve 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 actuator which uses air cooling to dissipate the rising heat from the valve away from the 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 for L port | 7 | 7 | 11 | 15 | 30 | 47 | 70 | 133 |
| KV for TD | 8 | 8 | 13 | 19 | 34 | 54 | 84 | 158 |
| KV for TM | 6 | 6 | 8 | 11 | 22 | 41 | 54 | 97 |

| 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 | E2306S +70°C Direct mounted |
| | E2316S +120°C Mounted via kit |
| | E2326S +100°C Mounted via ext'n |
| Valve body | CF8M (Cast 316 SS) |
| Valve ball | 316SS |
| Valve seats | PTFE |
| Valve Pressure rating | 63 bar (1000psi) at ambient temp |
| Valve temp limits | -20 to +200°C |
| Size range | 1/4" to 2" |

3 Way ball valve information:

Reduced bore 3 way ball valve providing diverting or mixing duties. Designed for automation with integrally cast ISO5211 actuator mounting platform. End connections are threaded BSP female.

3 Way stainless steel 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 with either a L-port or T-port flow.

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.

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J3CS FAILSAFE 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:

With external 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.

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.

Adding the BSR (Battery 'Spring Return') plug and play function conversion kit to the J3CS modulating actuator, it becomes a J3CS failsafe modulating electric actuator.

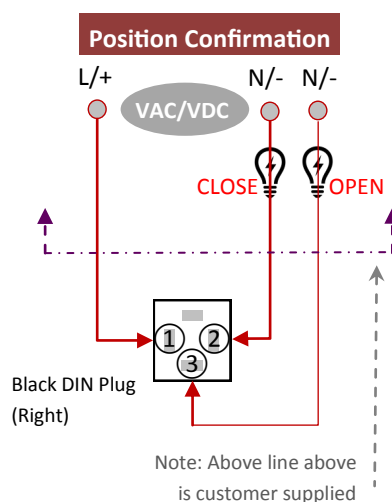
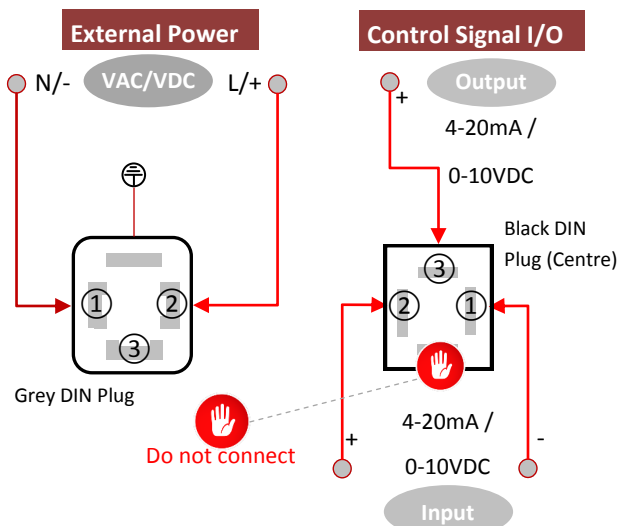
The advantage this gives is that the actuator will fail to either the open or closed position, depending on how the DPS positioner is configured, in the event of an external power failure.

The BSR failsafe system comprises of an industrial rechargeable NiCad battery and a PCB containing a trickle charger and control circuitry.

Whilst generally the J3CS failsafe modulating electric actuators are supplied with the BSR failsafe and DPS modulating kits pre-installed and function tested by J+J, the BSR and DPS kits can be supplied to be installed by the user into an on-off J3CS as they are very user friendly, simple to install and are plug and play. The DPS is self calibrating so no complex set-up procedure is necessary.

This is a very Smart Red Box.

J3CS FAILSAFE MODULATING WIRING

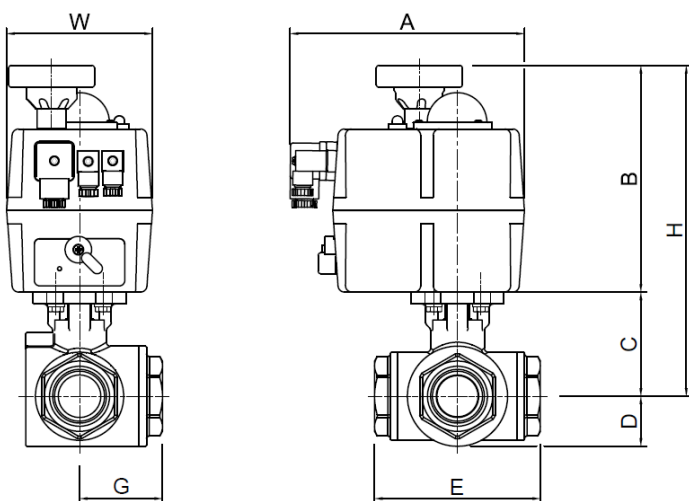


In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.



BSR Failsafe plug & play kit pre-installed to create fail-safe modulating function.

Type: **E2306S** Actuator direct mounted to valve

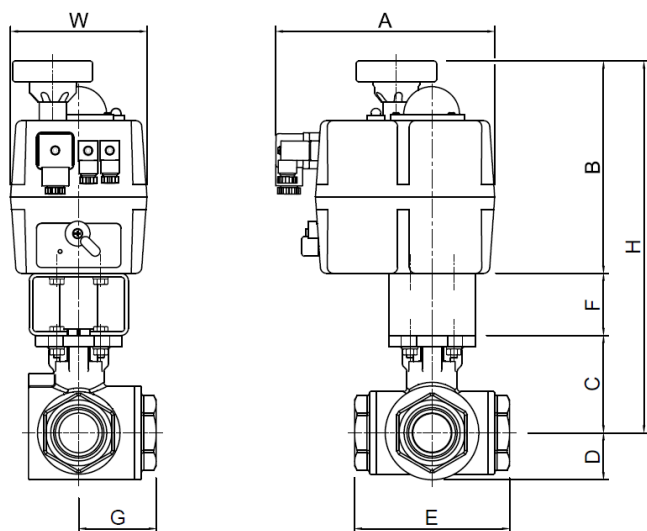


Typical Dimensions:

E2306S Dimensions remain unchanged for all versions
- On-off, failsafe, modulating and failsafe modulating

| | Model | A | E | H | W | Kilos |
|--------|-------|-----|-----|-----|-----|-------|
| 1/4" | 20 | 177 | 72 | 210 | 110 | 2.2 |
| 3/8" | 20 | 177 | 72 | 210 | 110 | 2.2 |
| 1/2" | 20 | 177 | 83 | 212 | 110 | 2.4 |
| 3/4" | 20 | 177 | 99 | 220 | 110 | 3.0 |
| 1" | 20 | 177 | 112 | 226 | 110 | 3.7 |
| 1 1/4" | 35 | 177 | 125 | 234 | 110 | 5.1 |
| 1 1/2" | 55 | 177 | 149 | 270 | 110 | 7.3 |
| 2" | 55 | 177 | 174 | 289 | 110 | 11.5 |

Type: **E2316S** Actuator fitted to valve via a bracket and drive adapter



E2316S Dimensions remain unchanged for all versions
- on-off, failsafe, modulating & failsafe modulating

| | Model | A | F | E | H | W | Kilos |
|--------|-------|-----|----|-----|-----|-----|-------|
| 1/4" | 20 | 177 | 50 | 72 | 260 | 110 | 2.4 |
| 3/8" | 20 | 177 | 50 | 72 | 260 | 110 | 2.4 |
| 1/2" | 20 | 177 | 50 | 83 | 262 | 110 | 2.6 |
| 3/4" | 20 | 177 | 50 | 99 | 270 | 110 | 3.2 |
| 1" | 20 | 177 | 50 | 112 | 276 | 110 | 3.9 |
| 1 1/4" | 35 | 177 | 50 | 125 | 284 | 110 | 5.3 |
| 1 1/2" | 55 | 177 | 50 | 149 | 320 | 110 | 7.5 |
| 2" | 55 | 177 | 50 | 174 | 339 | 110 | 11.7 |

Type: **E2326S** Actuator fitted to valve via a tubular stem extension

E2326S Dimensions remain unchanged for all versions
- on-off, failsafe, modulating & failsafe modulating

| | Model | A | E | F | H | W | Kilos |
|--------|-------|-----|---|-----|---|-----|-------|
| 1/4" | 20 | 177 | | 72 | | 110 | |
| 3/8" | 20 | 177 | | 72 | | 110 | |
| 1/2" | 20 | 177 | | 83 | | 110 | |
| 3/4" | 20 | 177 | | 99 | | 110 | |
| 1" | 20 | 177 | | 112 | | 110 | |
| 1 1/4" | 35 | 177 | | 125 | | 110 | |
| 1 1/2" | 55 | 177 | | 149 | | 110 | |
| 2" | 55 | 177 | | 174 | | 110 | |