

**J3CS Smart Electric Actuator Function: MODULATING CONTROL , FAILS SAFE ON POWER FAILURE**



Type: E4206S

Electric actuator direct mounted



Type: E4216S

Electric actuator fitted via kit

### Main J3 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:

Potable water (valve is not WRAS approved), oil, air and most non-corrosive media, subject to compatibility with wetted parts in contact with media.

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 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.

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	E4206S +70°C Direct mounted
	E4216S +130°C Mounted via kit
	E4226S +100°C Mounted via ext'n
Valve body	CF8M (Cast 316SS)
Valve ball	316SS
Valve seats	RPTFE. Graphite seals
Valve Pressure rating	UTI 2" 40 bar at ambient temp
	2 1/2" and above PN16 at ambient
Valve temp limits	-20 to +190°C
Size range	1/2" to 4"

### Ball valve information:

Full bore 2 piece construction, flanged PN16, providing full unrestricted flow and a very low pressure drop across the valve. Designed for automation with integrally cast ISO5211 actuator mounting platform. Turning the ball through 90° fully opens the valve, turning back through 90° fully closes the valve and isolates the flow. End connections are flanged PN16 (PN40 up to and including 2")

These ball valves are anti-static and fire safe tested to API607, latest edition. The tested construction prevents flow through the valve in the event of a fire by creating a metal to metal seal once the Teflon® seats have melted.

### Typical KV Values

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
KV	6.5	14	34	60	95	206	344	602	843

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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.

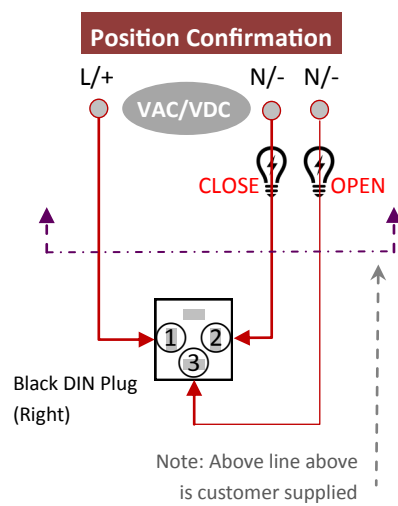
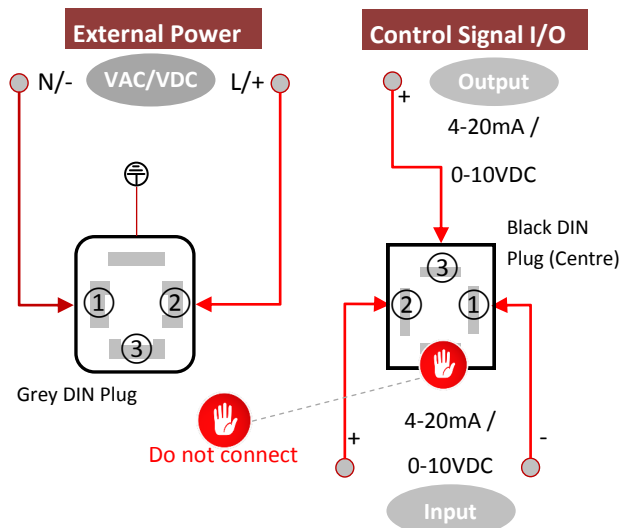
The advantage this gives is that the actuator will fail to either the open or closed position, depending on how the DPS positioner is configured, in the event of an external power failure.

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.

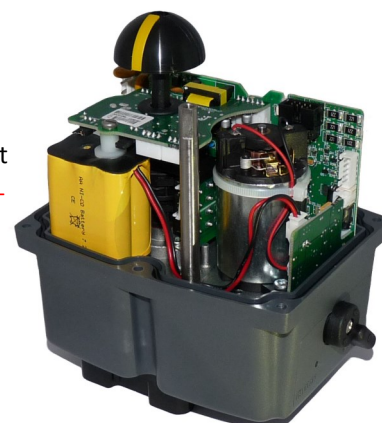
This is a very Smart Red Box.

#### J3CS FAILSAFE MODULATING WIRING



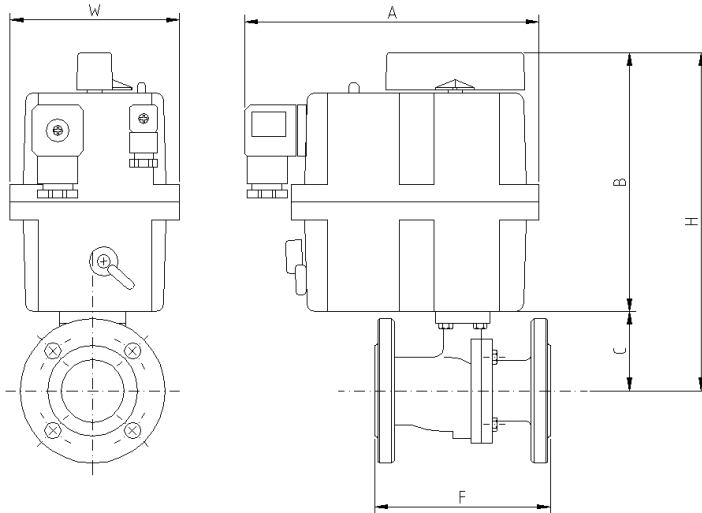
In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.

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



**J3CS Smart Electric Actuator Function: MODULATING CONTROL , FAILS SAFE ON POWER FAILURE**

Type: **E4205S** Actuator direct mounted to valve

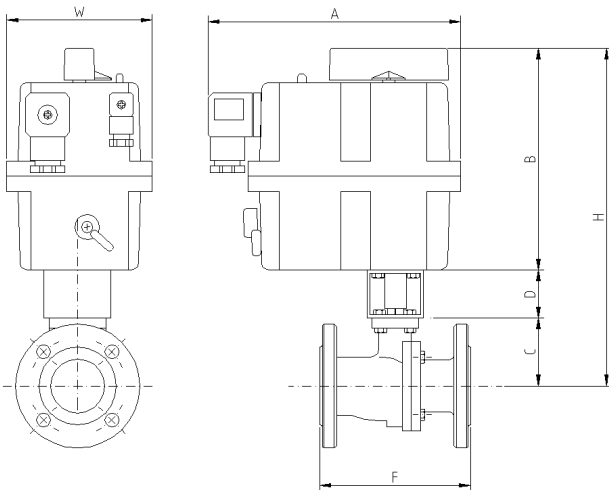


Note: Drawing shows J3 actuator, awaiting updated drawing showing the J3CS, released in late 2016.

**Typical Dimensions:**

E4205S Dimensions remain unchanged for all versions						
- On-off, failsafe, modulating and failsafe modulating						
	Model	A	F	H	W	Kilos
1/2"	20	177	115	197	110	3.6
3/4"	20	177	120	202	110	4.4
1"	20	177	125	208	110	5.2
1 1/4"	20	177	130	220	110	6.8
1 1/2"	35	177	140	247	110	8.9
2"	35	177	150	256	110	11.5
2 1/2"	85	177	170	290	128	15.5
3"	85	177	180	299	128	19.5
4"	*140	235	190	386	214	30.8

Type: **E4215S** Actuator fitted to valve via a bracket and drive adapter



Note: Drawing shows J3 actuator, awaiting updated drawing showing the J3CS, released in late 2016.

E4215S Dimensions remain unchanged for all versions							
- on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/2"	20	177	50	115	247	110	3.8
3/4"	20	177	50	120	252	110	4.6
1"	20	177	50	125	258	110	5.4
1 1/4"	20	177	50	130	270	110	7.0
1 1/2"	35	177	50	140	297	110	9.0
2"	35	177	50	150	306	110	11.7
2 1/2"	85	177	70	170	340	128	15.7
3"	85	177	70	180	369	128	20.5
4"	*140	235	70	190	456	214	31.8