

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



Type: E4406S

Electric actuator direct mounted



Type: E4416S

Electric actuator fitted via kit

### Main J3CS Smart electric actuator features:

- LED light for continual visual actuator status feedback.
- Fully weatherproof smart industrial actuator.
- Multi-voltage 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	E4406S +70°C Direct mounted
	E4416S +130°C Mounted via kit
	E4426S +100°C Mounted via ext'n
Valve body	CF8M (Cast 316SS)
Valve ball	316SS
Valve seats	RPTFE (Graphited seals)
Valve Pressure rating	As per ANSI Class 150
Valve temp limits	-20 to +190°C
Size range	1/2" to 6"

### API607 Fire safe ball valve information:

Full bore 2 piece construction, flanged ASA150 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 ASA150 (ASA300 available on request)

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

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

#### 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) - in stalled 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. This will provide the following alternative function:

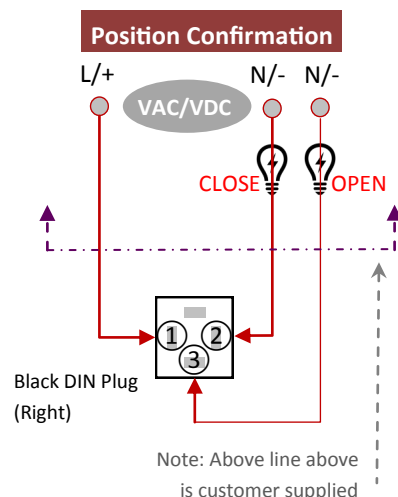
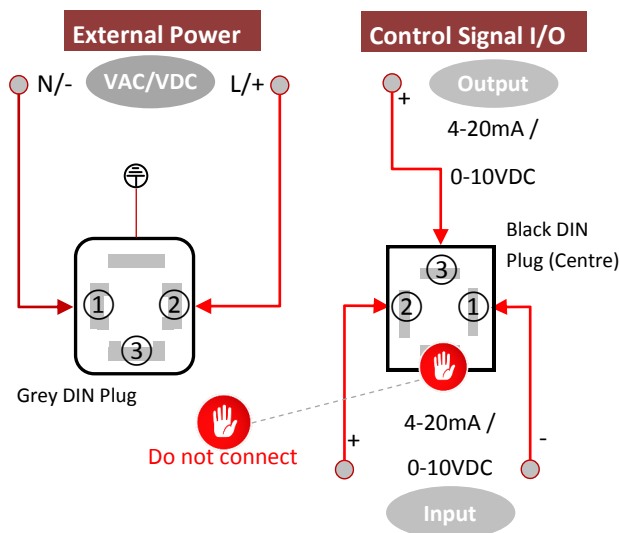
#### Failsafe Modulating J3CS Actuator

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.

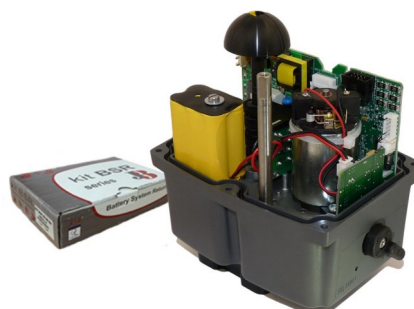
The advantage this gives is that the actuator will fail to either the open or closed position, depending on how the DPS positioner is configured, in the event of an external power failure.

The BSR failsafe system comprises of an industrial rechargeable NiCad battery and a PCB containing a trickle charger and control circuitry. It can either be installed by J+J on original supply, or retro-fitted.

#### 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.

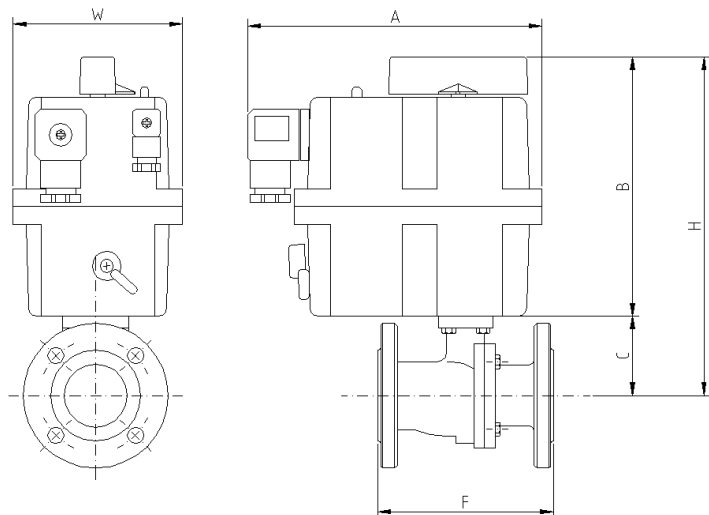


BSR Failsafe plug & play kit can be added to create failsafe modulating function.

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

### Typical Dimensions:

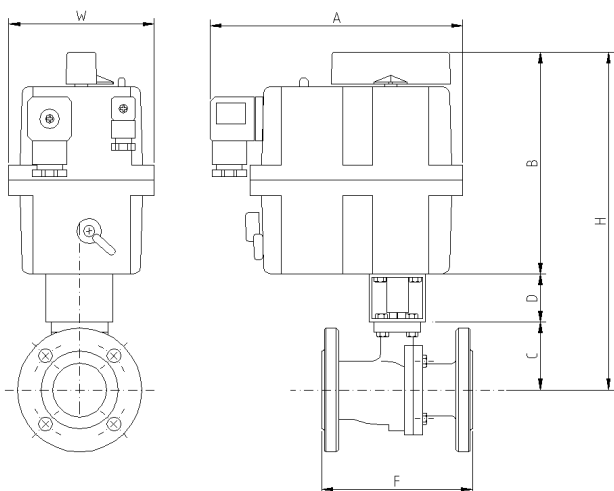
Type: **E4405S** Actuator direct mounted to valve



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

E4405S Dimensions remain unchanged for all versions						
- On-off, failsafe, modulating and failsafe modulating						
	Model	A	F	H	W	Kilos
1/2"	20	177	108	197	110	3.6
3/4"	20	177	117	202	110	4.4
1"	20	177	127	208	110	5.2
1 1/4"	20	177	140	220	110	6.8
1 1/2"	35	177	165	247	110	8.9
2"	35	177	178	256	110	11.5
2 1/2"	85	177	190	290	128	15.5
3"	85	177	203	299	128	19.5
4"	*140	235	229	386	214	30.8
6"	*300	235	394	439	214	74.0

Type: **E4415S** 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.

E4415S Dimensions remain unchanged for all versions							
- on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/2"	20	177	50	108	207	110	3.8
3/4"	20	177	50	117	252	110	4.6
1"	20	177	50	127	258	110	5.4
1 1/4"	20	177	50	140	270	110	7.0
1 1/2"	35	177	50	165	322	110	9.0
2"	35	177	50	178	331	110	11.7
2 1/2"	85	177	70	190	340	128	15.7
3"	85	177	70	203	427	128	20.5
4"	*140	235	70	229	456	214	31.8
6"	*300	235	70	394	534	214	75.8