

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



Type: E2703VS

Electric actuator direct mounted

Main J3CS Smart electric actuator features:

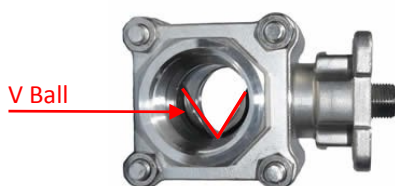
- LED light for continual visual actuator status feedback.
- Fully weatherproof smart industrial actuator.
- Multi-voltage 24-240V capable actuator.
- All external electrical connections, no need to remove cover .
- Selectable manual override facility.
- Thermostatic anti-condensation heater.
- Electronic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

Applications:

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

JJ 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.



The V notch is orientated in the upstream side.
V- angle available in 30°, 60° or 90°.

Specifications:	
Actuator housing	UV Protected Polyamide
Supply voltage range	24-240V
IP Rating	IP67
Actuator temp limits	-20 to +70°C
Assembly temp limits	E2706VS +70°C Direct mounted
	E2716VS +130°C Mounted via kit
	E2726VS +100°C Mounted via ext'n
Valve body	CF8M (Cast 316SS)
Valve ball	316SS (30°, 60° or 90° V notched)
Valve seats	PTFE with 50% SS filled seals
Valve Pressure rating	UTI 2" 64 bar at ambient temp
Valve temp limits	-20 to +200°C
Size range	1/2" to 4"

V Ball valve information:

Full bore 3 piece construction, designed for modulating automation with V notched ball to give much improved flow control when compared to a standard circular bored ball. The integrally cast ISO5211 actuator mounting platform ensures excellent valve to actuator alignment when mounting the actuator.

Turning the ball through 90° fully opens the v-notch, turning back through 90° fully closes the valve and isolates the flow. The flow in between open and closed and dictated by the V angle, depending on whether the V notch is 30°, 60° or 90°.

End connections are threaded BSP female. NPT, socket weld and butt weld ends are available as an option.

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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. This will provide the following alternative function:

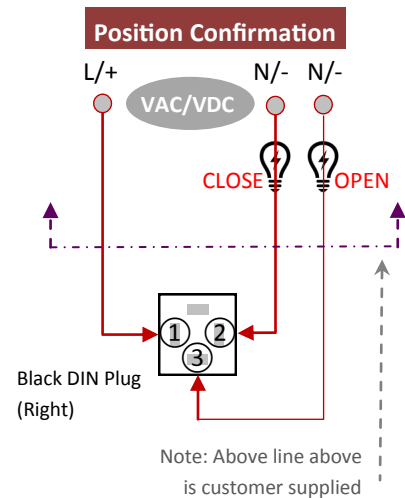
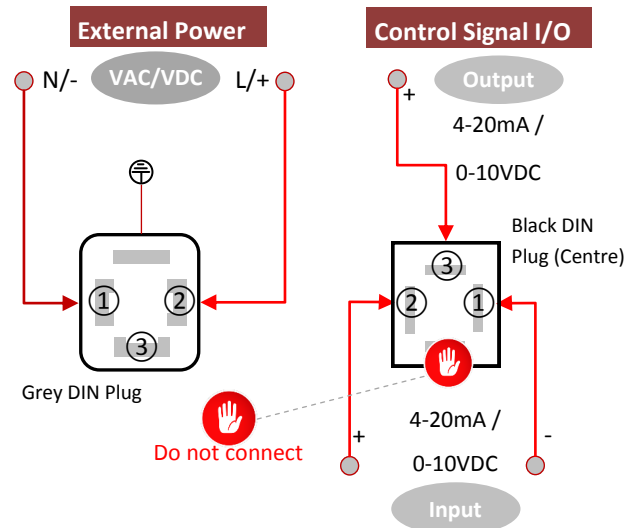
Failsafe Modulating J3CS Actuator

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.

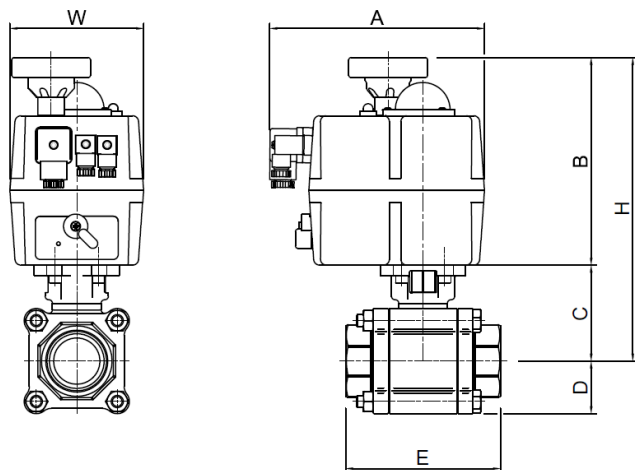


BSR Failsafe plug & play kit can be added to create **failsafe modulating** function.

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Type: **E2706VS** Actuator direct mounted to valve

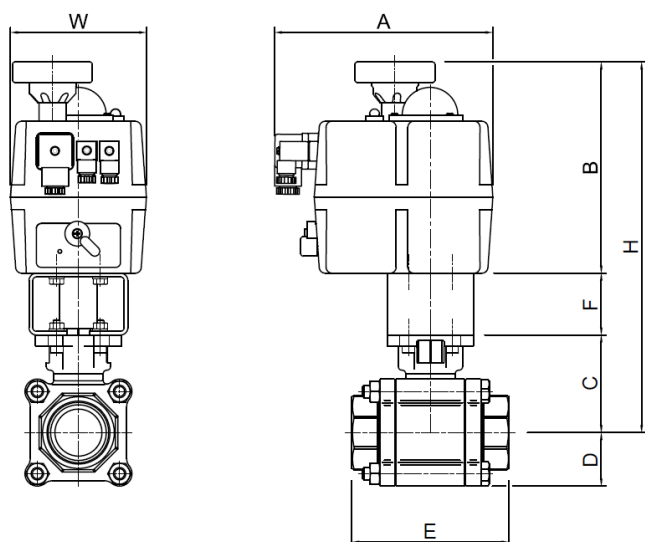
Typical Dimensions:



E2706VS Dimensions remain unchanged for all versions
- On-off, failsafe, modulating and failsafe modulating

	Model	A	E	H	W	Kilos
≤1/2"	20	177	65	201	110	2.2
3/4"	20	177	73	202	110	2.4
1"	20	177	85	204	110	2.9
1 1/4"	20	177	105	207	110	3.5
1 1/2"	35	177	111	211	110	4.5
2"	35	177	127	218	110	5.8

Type: **E2716VS** Actuator fitted to valve via a bracket and drive adapter



E2716VS Dimensions remain unchanged for all versions
- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
≤1/2"	20	177	50	65	251	110	2.2
3/4"	20	177	50	73	252	110	2.4
1"	20	177	50	85	254	110	2.9
1 1/4"	20	177	50	105	257	110	3.5
1 1/2"	35	177	50	111	261	110	4.5
2"	35	177	50	127	268	110	5.8

Type: **E2726VS** Actuator fitted to valve via a tubular stem extension

E2726VS Dimensions remain unchanged for all versions
- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
≤1/2"	20	177		65	229	110	2.2
3/4"	20	177		73	228	110	2.4
1"	20	177		85	232	110	2.9
1 1/4"	20	177		105	235	110	3.5
1 1/2"	35	177		111	261	110	4.5
2"	35	177		127	268	110	5.8

Typical V Series valve specifications:

"V" Series Flow Coefficients- Cv Chart

CV = Flow of water in USGPM at 1psi pressure drop

Valve Size	Ball Angle	0%	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2"	30	0	0.1	0.1	0.2	0.3	0.5	0.8	1.1	1.6	2.2	2.6
	60	0	0.1	0.1	0.3	0.5	0.9	1.4	2	3.3	4.4	6
	90	0	0.1	0.2	0.4	0.6	0.9	1.5	2.2	3.8	5.4	6.9
3/4"	30	0	0.1	0.2	0.5	0.7	1.1	1.8	2.4	3.3	4.5	5.4
	60	0	0.1	0.2	0.7	1	1.7	2.8	4	6.5	9	12
	90	0	0.2	0.4	0.8	1.2	2	3.1	4.6	8	11.3	14
1"	30	0	0.1	0.3	0.8	1.3	2.3	3.5	5.1	9.8	8.5	10
	60	0	0.2	0.4	1.1	1.8	3.4	5.3	7.9	12.3	15.3	21
	90	0	0.2	0.6	1.8	3.4	5.1	8.1	11.4	16	21	29
1 1/4"	30	0	0.2	0.4	1.1	2	3.7	5.5	8	10	13	15
	60	0	0.2	0.6	1.8	3	5.5	9.5	12.8	19	26	39
	90	0	0.3	0.8	2	5	8	14	19	28	39	55
1 1/2"	30	0	0.3	0.6	1.6	3	5	7.5	11	14	17	20
	60	0	0.4	0.8	2.5	4	8	13	19	27	40	52
	90	0	0.4	0.9	3.5	7	13	20	31	42	63	78
2"	30	0	0.4	1.2	3.8	6	10	15	23	31	43	60
	60	0	0.4	1.5	4.6	9	16.5	27	39	55	83	110
	90	0	0.5	2	6	12	22	35	45	70	105	135
2 1/2"	30	0	0.4	1	4	8	12	18	28	37	62	75
	60	0	0.4	1.5	5	10	21	34	53	75	103	150
	90	0	0.5	1.7	7	14	28	48	70	106	160	218
3"	30	0	0.5	1.2	4	8	14	23	33	46	65	82
	60	0	0.5	2.5	6	14	25	40	65	91	128	165
	90	0	0.7	3.5	8	18	35	60	90	135	205	310
4"	30	0	0.6	2	6	15	29	48	71	100	130	159
	60	0	0.7	3	11	25	40	59	90	141	212	356
	90	0	1	3.5	16	40	75	125	190	295	442	670
6"	30	0	0.9	3.2	14	33	60	103	155	220	280	350
	60	0	2	5	22	60	110	190	285	416	586	800
	90	0	3	8	35	90	160	280	425	650	970	1480

Pressure x temperature chart

