

J3CS Smart Electric Actuator Function: POWER OPEN - POWER CLOSE , FAILS 'SAFE' ON POWER FAILURE



Type: E4204S

Electric actuator direct mounted



Type: E4214S

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	E4204S +70°C Direct mounted
	E4214S +130°C Mounted via kit
	E4224S +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 ELECTRIC ACTUATOR

Power open, power close, fails to pre-set position on loss of external power. Typically fails closed, but can be set to fail open. The BSR Failsafe conversion kit is pre-installed by J+J.

How this electric 1/4 turn valve works (on-off):

Electrically operated valves are driven by a motor and gearbox. On receipt of a continuous voltage signal the motor runs and, via a gearbox in the J+J smart electric actuator, rotates the valve stem. The motor stops at the desired position (usually 0° or 90°) by internal cams striking micro-switches. The smart valve actuator remains in this position, with the voltage still applied continuously, until switched and a continuous voltage reversing signal is applied, which runs the motor in the opposite direction, reversing the rotation until separate set of internal cams strike separate set of micro-switches.

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 modulating reacts to loss of the control signal as follows:

Configuration options:

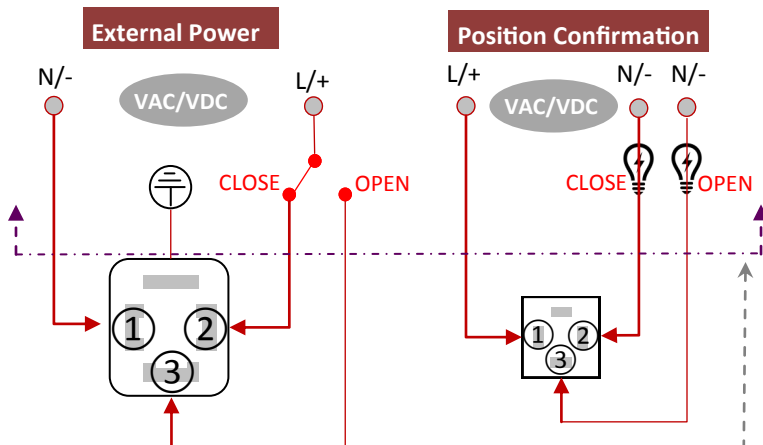
- 1) Closes on loss of control signal, or on loss of power
- 2) Opens on loss of control signal, or on loss of power
- 3) Stays put on loss of control signal



DPS Modulating plug & play kit can be installed with the BSR failsafe kit to create failsafe modulating function.

Electrical Connection - Wiring of DIN Plugs

J3CS FAILSAFE WIRING



Note: Above line above is customer supplied

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.

Pre-installed Plug & Play Function Conversion Kit:



BSR Failsafe plug & play kit (already installed by J+J in the failsafe version)

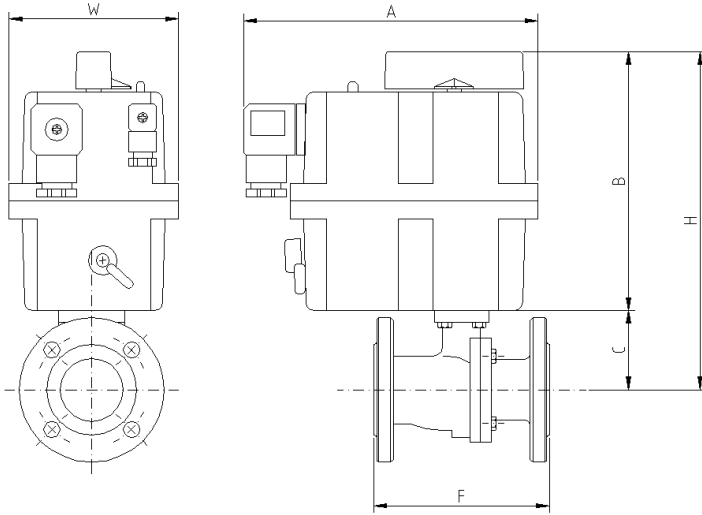
How the BSR (Battery 'Spring Return') system works:

The user friendly BSR failsafe function plug and play conversion kit adds an industrial NiCad rechargeable battery and PCB to the standard power open, power close J3CS actuator. The electric actuator continues to operate power open, power close, and whilst doing so, the battery is constantly trickle charged to keep it fully charged.

When external power is lost, a switch in the BSR PCB draws internal power from the battery to send the J3CS to the desired pre-set 'safe' position, if not already in that position.

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Type: E4204S Actuator direct mounted to valve

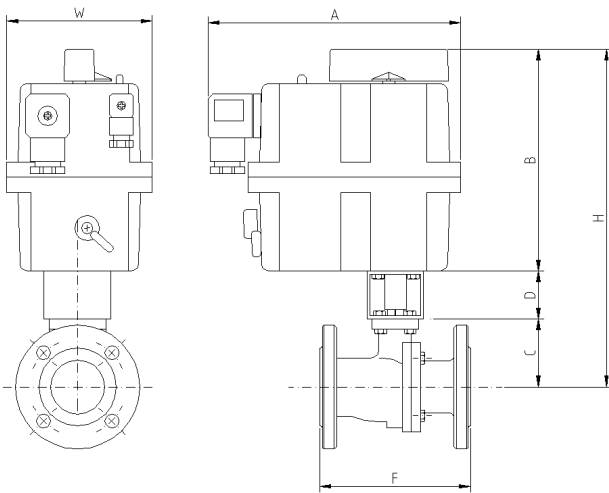


Note: Drawing shows J3 actuator, awaiting updated drawing showing the J3CS, released in late 2016.

Typical Dimensions:

E4204S 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: E4214S 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.

E4214S 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