

J3CS Smart Electric Actuator Function: POWER OPEN - POWER CLOSE , STAYS PUT ON POWER FAILURE



Type: E2103ES

Electric actuator direct mounted



Type: E2113ES

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

J+J Electric 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	E2103ES +70°C Direct mounted
	E2113ES +130°C Mounted via kit
	E2123ES +100°C Mounted via ext'n
Valve body	CF8M (Cast 316SS)
Valve ball	316SS
Valve seats	RPTFE
Valve Pressure rating	UTI 2" 64 bar at ambient temp
Valve temp limits	-20 to +200°C
Size range	1/4" to 4"

Ball valve information:

Full bore 3 piece construction offers in-line maintenance and provides full unrestricted flow and a very low pressure drop across the ball 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 threaded BSP female. NPT, butt weld and socket weld ends are available as an option.

Typical KV Values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
KV	6.8	6.8	12.8	29.1	47.8	72.6	106.8	213.7	273.3	495.3	871.1

Kv = m³ per hour with a 1 bar pressure drop across the valve
Cv = Kv / 0.86

CV = US gallons per hour with a 1psi pressure drop across the valve

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J3CS ON - OFF ELECTRIC ACTUATOR

Power open, power close, stays put on loss of external power.

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 pug and play function conversion kits. These will provide the following alternative functions:

Failsafe J3CS Actuator

J3CS fails to pre-set position using our BSR (Battery 'Spring Return' system which creates an alternate power supply should the external power fail.

Modulating J3CS Actuator

Movement of the J3CS actuator is proportional to an input control signal, typically 4-20mA or 0-10V, by installing our DPS (Digital Positioning System) user friendly plug and play kit. There are options for how the J3CS modulating reacts to loss of the control signal, 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

Failsafe Modulating J3CS Actuator

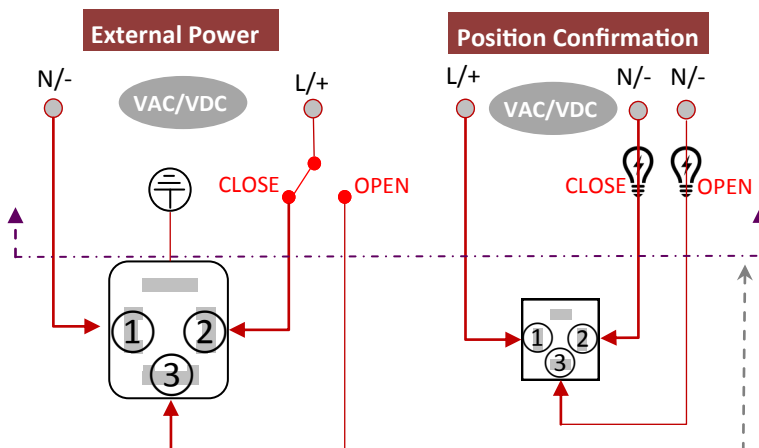
Failsafe modulating by installing the J+J BSR (Battery 'Spring Return') plug and play kit, operates functionally as a modulating electric actuator as described above, but will fail as per the DPS setting on loss of external power, as follows:

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

Electrical Connection - Wiring of DIN Plugs

J3CS ON-OFF & FAILSAFE WIRING (Same connection for either)



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.

Optional Plug & Play Function Conversion Kits



DPS Modulating plug & play kit

BSR Failsafe plug & play kit

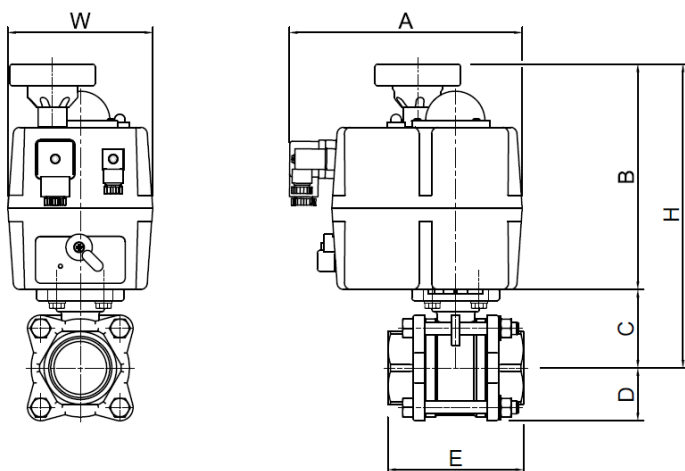
Installing J+J Plug & Play function conversion kits

Failsafe and/or modulating function is quick and easy to achieve in the J3CS smart electric actuator by the fitting of the user friendly failsafe and/or modulating plug & play function conversion kits to the standard on-off J3CS smart valve actuator. When actuated valves are ordered with failsafe, modulating or failsafe modulating function, J+J install and test the plug and play function conversion kits. They can however be easily retro-fitted to J3CS smart electric actuators should the on-off function requirement (supplied as standard function), change.

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Typical Dimensions:

Type: E2103ES Actuator direct mounted to valve



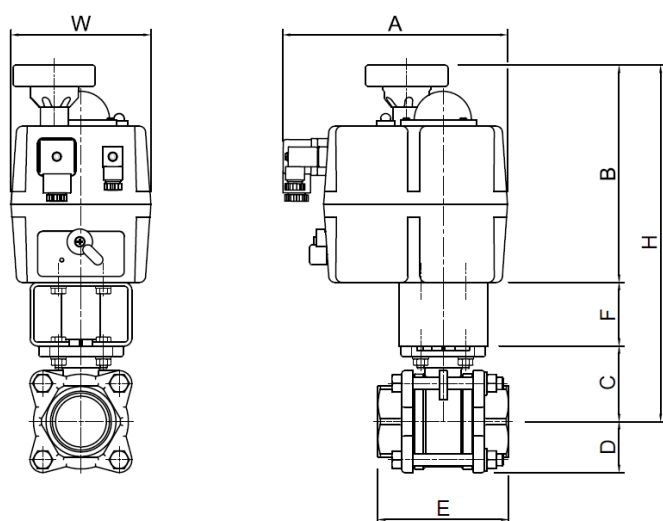
E2103ES Dimensions remain unchanged for all versions

- On-off, failsafe, modulating and failsafe modulating

	Model	A	E	H	W	Kilos
≤1/2"	20	177	66	213	110	2.2
3/4"	20	177	76	219	110	2.3
1"	20	177	86	228	110	2.8
1 1/4"	20	177	103	232	110	3.4
1 1/2"	35	177	119	249	110	5.0
2"	55	177	131	281	110	6.6
2 1/2"	85	177	164	305	110	11.0
3"	85	177	183	314	110	14.3
4"	140*	235	236	154	254	26.7

*140 = J3C-140

Type: E2113ES Actuator fitted to valve via a bracket and drive adapter



E2113ES Dimensions remain unchanged for all versions

- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
≤1/2"	20	177	50	66	263	110	2.4
3/4"	20	177	50	76	269	110	2.5
1"	20	177	50	86	278	110	3.0
1 1/4"	20	177	50	103	282	110	3.6
1 1/2"	35	177	50	119	299	110	5.2
2"	55	177	50	131	331	110	6.8
2 1/2"	85	177	70	164	375	128	12.0
3"	85	177	70	183	384	128	15.3
4"	140*	235	70	236	417	254	27.7

Type: E2123ES Actuator fitted to valve via a tubular stem extension

E2123ES Dimensions remain unchanged for all versions

- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
≤1/2"	20	177		66		110	
3/4"	20	177		76		110	
1"	20	177		86		110	
1 1/4"	20	177		103		110	
1 1/2"	35	177		119		110	
2"	55	177		131		110	
2 1/2"	85	177		164		128	
3"	85	177		183		128	
4"	140*	235		236		254	