

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



Type: **EJ3-1104S**

Electric actuator direct mounted



Type: **EJ3-1114S**

Electric actuator fitted via kit

Main J3C-S Smart Failsafe electric actuator features:

- Power On LED light
- LED light for continual visual actuator status feedback.
- Fully weatherproof smart industrial actuator.
- Multi-voltage 24-240V capable actuator with auto sensing.
- 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.

Specifications:

Actuator housing	UV Protected Polyamide
Supply voltage range	25-240V AC or DC
IP Rating	IP67
Actuator temp limits	-20 to +70°C
Assembly temp limits	EJ3-1104S +70°C Act direct mount
	EJ3-1114S +95°C Act via mounting kit
Valve body	Nickel plated brass
Valve ball	Chrome plated brass
Valve seats	PTFE
Valve Pressure rating	UTI 2" 40 bar at ambient temp
Valve temp limits	-20 to +95°C
Size range	1/2" to 2"

Applications:

Potable water, oil, air and most non-corrosive media, subject to compatibility with wetted parts in contact with media. This assembly is NOT recommended for use on steam.

Valve 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), please call to check the actuator sizing as a larger output electric 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 the JJ electric 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.

Ball valve information:

Full bore 2 piece construction, providing full unrestricted flow and a very low pressure drop across the valve. Approved in the UK for use on potable water by WRAS. 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.



Typical Kv Values

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Kv	16.3	29.5	43	89	230	265

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

J3C-S 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. BSR Failsafe conversion kit 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 J3C-S actuator's function by installing user friendly plug and play function conversion kits. These will provide the following alternative functions:

Failsafe Modulating J3C-S Actuator

Movement of the J3C-S 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:

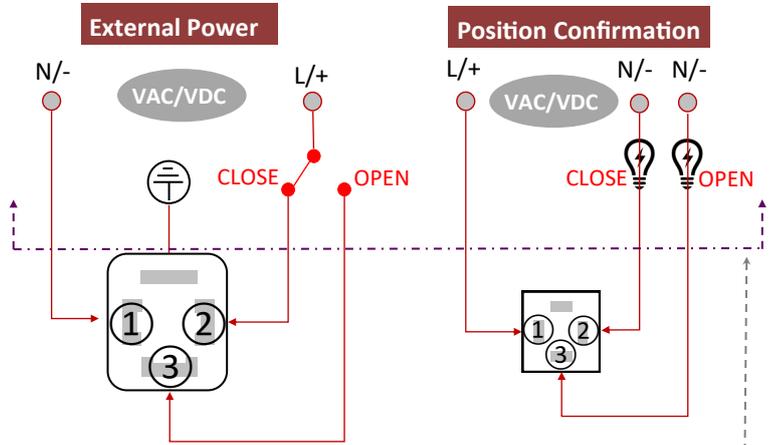
- 1) Closes on loss of control signal, or on loss of power
- 2) Opens on loss of control signal, or on loss of power
- 3) Stays put on loss of control signal



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

Electrical Connection - Wiring of DIN Plugs

J3C-S 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)

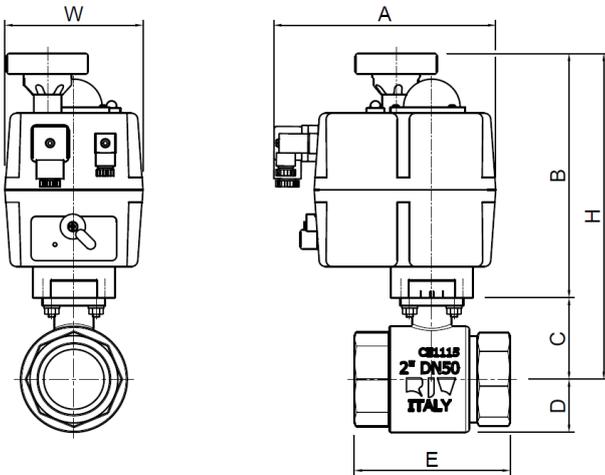
How the BSR (Battery 'Spring Return') system works:

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 J3C-S 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 J3C-S to the desired pre-set 'safe' position, if not already in that position.

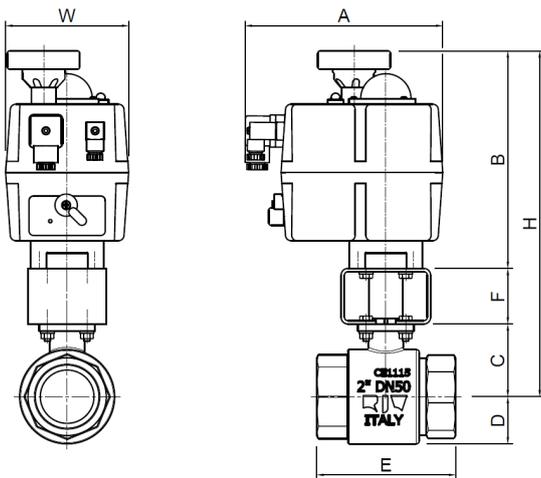
Type: EJ3-1104S Actuator direct mounted to valve

Typical Dimensions:



EJ3-1104S Dimensions remain unchanged for all versions - On-off, failsafe, modulating and failsafe modulating						
	Model	A	F	H	W	Kilos
1/2"	20	177	59	180	110	1.8
3/4"	20	177	69	186	110	1.9
1"	20	177	83	190	110	2.2
1 1/4"	20	177	94	196	110	2.5
1 1/2"	20	177	102	207	110	2.9
2"	20	177	124	215	110	3.7

Type: EJ3-1114S Actuator fitted to valve via a bracket and drive adapter



EJ3-1114S Dimensions remain unchanged for all versions - on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/2"	20	177	50	59	230	110	2.0
3/4"	20	177	50	69	236	110	2.1
1"	20	177	50	83	240	110	2.4
1 1/4"	20	177	50	94	246	110	2.7
1 1/2"	20	177	50	102	257	110	3.1
2"	20	177	50	124	265	110	3.9

Type: EJ3-1124S Actuator fitted to valve via a tubular stem extension

Awaiting details, call for information

EJ3-1124S Dimensions remain unchanged for all versions - on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
1/2"	20	177		59		110	
3/4"	20	177		69		110	
1"	20	177		83		110	
1 1/4"	20	177		94		110	
1 1/2"	20	177		102		110	
2"	20	177		124		110	