

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

Note: J3 Actuator
(superseded by J3CS)



DN15-40 1/2" - 1 1/2"

Type: E3014HS

Electric actuator fitted via mounting kit



DN50-100 2" - 4"

Note: J3 Actuator
(superseded by J3CS)

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:

The 3010H is well suited in water, food and general service applications, and is used extensively around the world in water, irrigation, swimming pools, foodstuffs and general service applications. Can be used with potable water (but not WRAS approved in the UK), and many corrosive media, subject to compatibility with wetted parts in contact with media.

Actuators sized on a maximum differential pressure of 10 bar wet service, operated at least once per day. If the intended duty is above this differential, or dry (eg: some solvents) call to check actuator sizing as a larger output actuator may be required.

Maximum working temperature of this assembly is +60C. For temperatures in excess of this please contact us - we may still be able to offer a plastic valve, say PVDF or cPVC, depending upon the working temperature required, and the working pressure.

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	E3014HS +60°C
Valve body	uPVC
Valve ball	uPVC
Valve seats	PTFE with EPDM seals
Valve Pressure rating	UT1 2" 16 bar at +20C 2 1/2" - 3" 10 bar
Valve temp limits	0 to +60°C
Size range	1/2" to 3"

PVC information:

PVC is odourless and tasteless and is used in many applications such as water processing, conveying potable water and food processing.. It has good chemical resistance and resists most solutions of acids, alkalis and salts, and also solvents that can be diluted with water.

It is not resistant to aromatic and chlorinated carbons.

PVC is not suitable in applications where the installation can see negative ambient temperatures, and care must be taken when working above 20C as the allowable working pressure drops significantly as the working temperature increases.

Ball valve information:

The 3010H is an economy, mass produced PVC ball valve.

The double union design allows the centre section to quickly and easily be removed for replacing the seats and seals. These economy PVC ball valves have a blow-out proof ball & stem. Standard seals are EPDM but Viton (FKM) is available.

Automation is made quick and easy when using the manufacturers' purpose designed mounting kit that is usually available from stock.

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. 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 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:

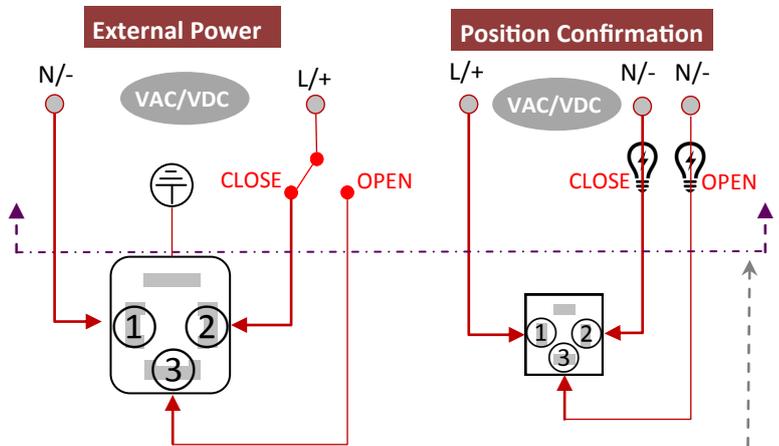
- 1) Closes on loss of control signal, or on loss of power
- 2) Opens on loss of control signal, or on loss of power
- 3) Stays put on loss of control signal



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)

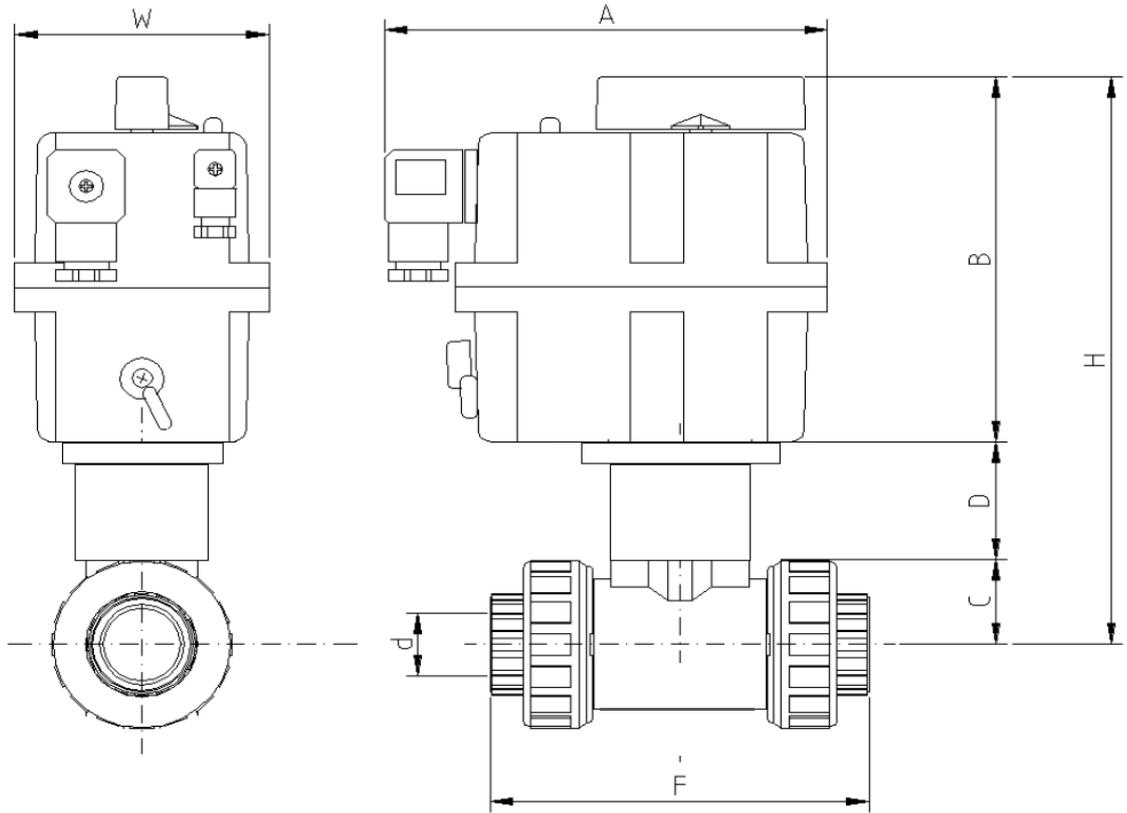
How the BSR (Battery 'Spring Return') system works:

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.

Typical Dimensions:

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



Type: **E3014HS** Actuator fitted to valve via the manufacturers' mounting

E3014HS Dimensions remain unchanged for all versions
- on-off, failsafe, modulating & failsafe modulating

	Model	A	d	F	H	W
≤1/2"	20	177	15	86	227	110
3/4"	20	177	20	94	232	110
1"	20	177	25	122	243	110
1 1/4"	20	177	32	131	265	110
1 1/2"	20	177	40	150	282	110
2"	20	177	50	177	390	110
2 1/2"	55	177	65	216	425	110
3"	55	177	80	257	450	110