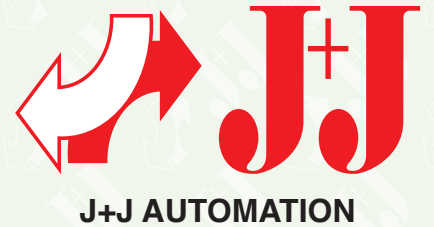




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# Productinformatie



## BSR Failsafe System for J3 & J3C

### Convert a J3 or J3C on-off electric actuator to failsafe

Uniquely, the J3 electric actuator can change its operating function by the simple addition of a plug and play function conversion kit. By installing the BSR from electric actuator manufacturer J+J, the factory supplied on-off function changes to failsafe.

Failsafe functionality means that in the event of external power being lost, the BSR will drive the actuator to a pre-determined failsafe position - if it is not already in that position, and will respect the external signal being applied at the time the external power is restored. The failsafe position can be configured to either be fail closed, or fail open on loss of external power.

### Advantage of a battery failsafe system over a true mechanical spring return system

In conventional mechanical spring return electric actuators, the actuator has to overcome the torque in the valve AND the torque in the spring, so the mechanical spring return actuator is therefore bigger, and more expensive, compared to a non-failsafe actuator providing the same torque output.

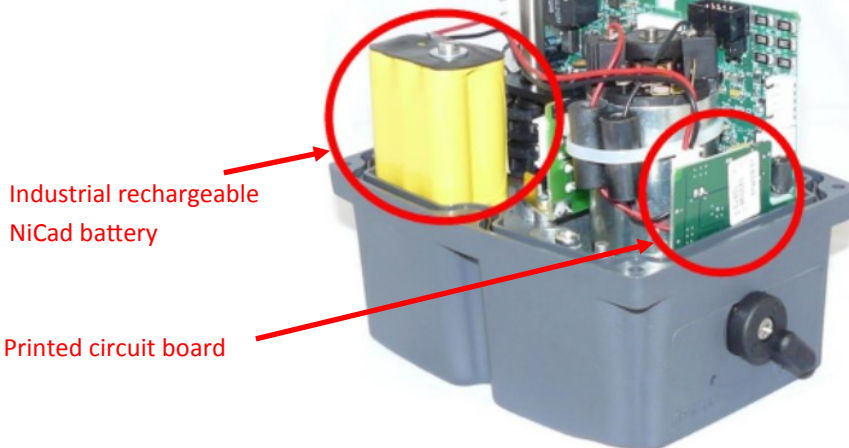
A battery failsafe system simply provides an alternate power source, so the actuator is the same size for providing either standard or failsafe functionality, and therefore battery failsafe electric actuators are less expensive than true mechanical spring return electric actuators.



BSR Plug & Play Kit



### Model J3-20 with BSR failsafe system installed



Industrial rechargeable NiCad battery

Printed circuit board

### Overview of the BSR principle of operation

Failsafe functionality in the J3/J3C electric actuator is achieved by providing an alternate power supply by way of an internal NiCad industrial rechargeable battery that is trickle charged via the circuit board whenever external power is supplied to the J3 actuator. The circuit board detects loss of external power and switches the power source to 'internal', drawing power from the battery to set the J3 actuator to its pre-determined failsafe position. The battery and circuit board are supplied in the BSR plug and play kit.

### Retro-fit to J3 or J3C on-off electric actuator

The BSR plug & play function conversion kit can quickly and easily be retro-fitted to a standard on-off J3 actuator, so if the requirement changes after supply, the actuator's function can be changed on site.

### Detail of the J3 or J3C's BSR's functionality

A few seconds after loss of external power, the J3's LED light will slowly flash and, if not already in its pre-determined failsafe position, will be driven to its failsafe position by the trickle-charged internal industrial battery. The LED will continue to flash for a couple of minutes and at the end of this period, if external power has not been restored, the J3 completely shuts down to preserve battery charge, and the LED light is extinguished. On resumption of mains power, the J3 failsafe electric actuator will respect the external command signal being applied.

### Re-charging the J3 or J3C's internal industrial battery

Every movement made under battery power draws energy from the internal battery, and this energy must be replaced before the next demand is made otherwise the battery will run flat, it is therefore important to respect the recharge times shown in the table on page 3.

## J3/ J3C Series Smart Electric Actuator

### Function options:

#### J3/ J3C ON-OFF ELECTRIC ACTUATOR

Standard function

Power open, power close. Stays put on loss of external power. Power remains on at all times.

#### J3/ J3C FAILSAFE ELECTRIC ACTUATOR

Fails to pre-set position on loss of external power

Power open, power close, fails to pre-set 'safe' position on loss of external power using internal industrial trickle charged rechargeable NiCad battery. Can be set to fail close (NC or normally closed) or fail open (NO or normally open) on loss of external power. The failsafe electric actuator moves to the position command applied at the time external power is restored.

#### J3/ J3C MODULATING ELECTRIC ACTUATOR

Movement proportional to input signal

Power is applied continuously. Movement of valve actuator is then controlled by an internally fitted digital positioner and is proportional to changes supplied in an input control signal. This input signal is typically 0-10VDC, or 4-20mA. An output signal is supplied as standard providing closed loop control. Fails closed on loss of control signal (or see configuration options below), stays 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

#### J3/ J3C FAILSAFE MODULATING ELECTRIC ACTUATOR

Combination of failsafe & modulating above:

Uses battery failsafe system and digital positioner to provide fail to safe position function on loss of external power in a modulating application.

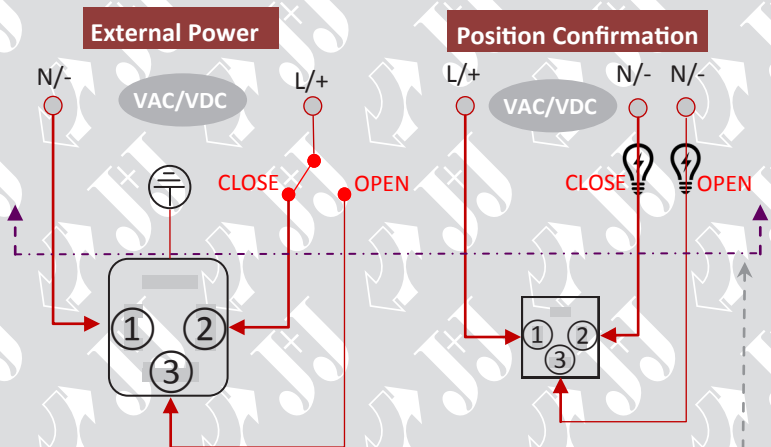
#### J3 Series Plug & Play function conversion kits

Failsafe and/or modulating function is quick and easy to achieve in the J3 smart electric actuator by the fitting of the user friendly failsafe and/or modulating plug & play function conversion kits to the standard on-off J3 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 easily be retro-fitted to J3 smart electric actuators should the on-off function requirement, supplied as standard, change.

## J3 or J3C Electrical Connection - wiring

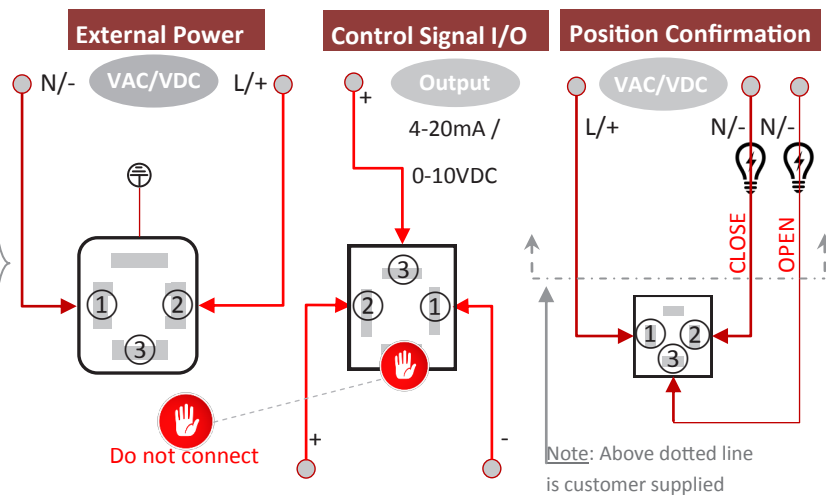
In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.

### J3 ON-OFF & FAILSAFE WIRING (Same connection for either)



Note: Above line above is customer supplied

### J3C MODULATING WIRING



### DPS Modulating plug & play kit for J3

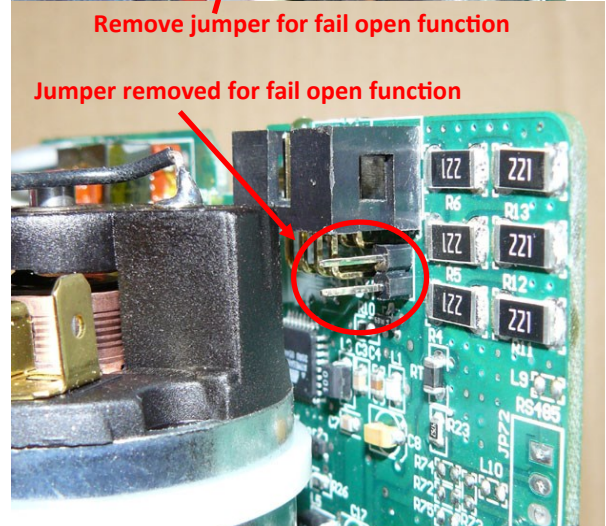
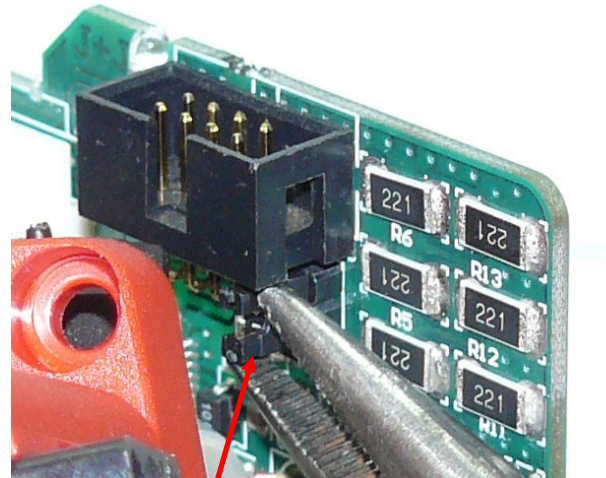
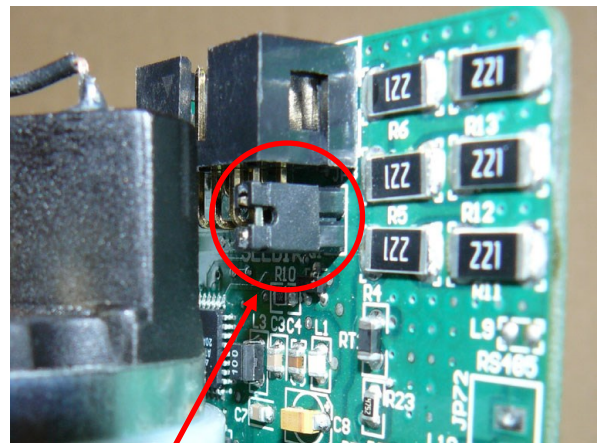
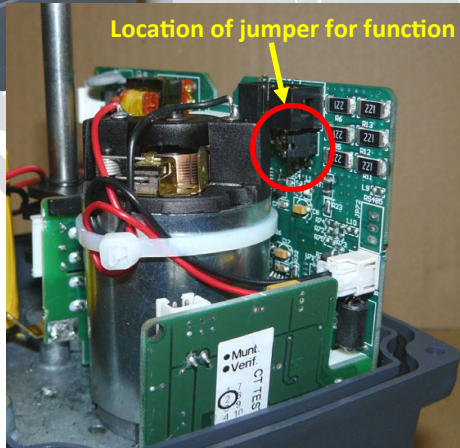
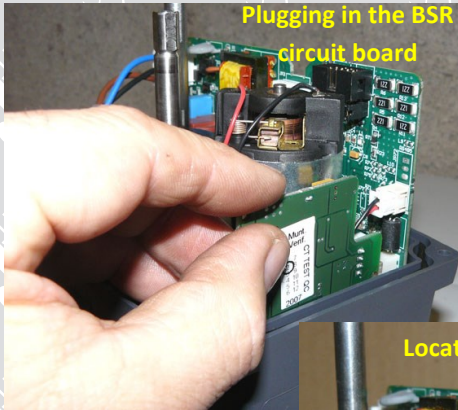


BSR Failsafe plug & play kit for J3



**Configuring the J3 or J3C for FAIL OPEN functionality**

The factory supplied BSR kit is configured to fail closed on loss of external power. It is quick and easy to change the fail position to open, by removing a jumper from the J3 actuator's main circuit board. See photographs below.



**Technical and charging information**

J3 Model	20	35	55	85
Location of BSR	Internal	Internal	Internal	Internal
Cycles on 1 charge	6	6	3	2
Initial charge time	36 hours	36 hours	36 hours	36 hours
<b>Minimum recharge time* after each movement</b>	<b>26 mins</b>	<b>26 mins</b>	<b>50 mins</b>	<b>65 mins</b>
Battery consumption per operation	0.1W	0.1W	0.18W	0.2W
Battery nominal capacity ±5%	800mA	800mA	800mA	800mA

\* Minimum time external power must be applied after each movement under battery power to maintain battery at full capacity.

**Note on 'solenoid' function for J3/ J3C with BSR installed**

The J3-BSR failsafe actuator can be connected with 2 wires to give enesigse open, battery close (in solenoid terminology, normally closed/ NC, or vice versa for normally open/ NO function) which replicates the function of a solenoid valve - whilst not designed for this, the J3-BSR will work CONDITIONAL that the minimum enesigse (external power applied) times are completely respected. Battery life may shorten depending upon the frequency of operation under battery power.



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