



Model **J3** - H20 Electric Actuator



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Feature rich **J+J** multi-voltage electric actuator with LED status light and plug & play accessories.

New in 2008, the **J3** range of electric actuators takes its highly successful predecessor, the J2 range, to the next level.

With an all new, rugged weatherproof and anti-corrosive Polyamide housing, the **J3** valve actuator offers more user-friendly features than the J2, and introduces a highly visible LED status light.

This visual indicator shows whether the actuator is operating correctly, or has tripped out either by its electronic torque limiter, or has been left in 'manual' mode.

Site operators are no longer left with the 'valve or actuator?' question when an actuator doesn't respond to a signal.

The **J3** electric rotary actuator is quick and easy to install, with ISO:5211 multi-flange mounting and a double square drive, allowing fast mounting to ISO:5211 valves.

There is no need to remove the cover to connect the **J3** electrically, saving installation time.

Using the external DIN plugs and external wiring diagrams supplied with the actuator, installations can be pre-wired.



Protection against valve jams is provided by an electronic torque limiter, which auto-relaxes the gearbox when activated, allowing the manual override to be selected to assist in clearing the jam.

The effect of condensation is eliminated in the **J3** electric actuator by an internal thermostatic anti-condensation heater that does not require a separate independent power supply.

Standard function for the **J3**-H20 electric valve actuator is power open, power close, stays put on power failure.

New to the **J3** electrical actuators are plug and play accessories –the function can be changed to either failsafe or modulating by fitting the new plug and play conversion kits.

The modulating kit has the new digital positioner that offers auto-calibrating and self resetting functionality.

These conversion kits are available as optional extras.

The **J3** is a very smart red box!

Quick guide to the **J3** electric actuator Standard Features :

Multi-voltage electric actuator with auto-voltage sensing. 110 ~ 240V AC or DC .

LED Status light to indicate operational status of actuator

Electronic over-torque protection against valve jams

Thermostatic anti-condensation heater

Manual override for emergency hand operation

2 Volt free end of travel confirmation switches

IP65 weatherproof anti-corrosive and UV protected Polyamide housing

Local visual position indicator

ISO5211 multi-flange mounting with double square drive

All external electrical connections via supplied DIN plugs

CE marked

ISO 9000 manufacturer

Failsafe and digital positioner plug & play kits available.

J3 Status light functions:

Constantly lit LED

If the electric actuator is operating correctly with no faults, the LED shows a constantly lit light.



The LED flashes with 2 blinks

If the actuator has been left in 'manual' mode, the actuator's motor runs but doesn't drive the output shaft. After a pre-set time, the actuator knows that as the torque limiter has not activated and that the motor is running, it must be in manual.



The LED flashes on/ off

When the valve actuator senses an impending valve jam, the electronic torque limiter is activated and on activation, repeatedly flashes the LED on and off.



Specifications: J3 -H20The **J3** - H20 electric rotary actuator

Visual indication of the actuator's operating status is constantly shown by a highly visible LED light.

Voltage range - automatically sensed by actuator	85-250V AC (1ph) or DC
Operating time (0-90° no load) J3-H20	11 seconds
Maximum break torque	25 Nm 221 in.lbs
Maximum operating torque (run/ reseat)	20 Nm 177 in.lbs
Duty rating	75%
IP Rating (IEC 60529)	IP65
Working angle Standard (on request)	90° (180° or 270° options)
Mounting ISO:5211 x DIN 3337	F03, F04 & F05 x 14
Motor switches	2 x SPDT micro switches
End of travel confirmation (volt free)	2 x SPDT micro switches
Heater	4 W
Ambient temperature range	-20° to +70°C / -4 to +158°F
Electrical connecting plugs	DIN 43650/ ISO4400 & C192
Consumption	
220V/1ph At maximum torque	0.09 A
220V DC At maximum torque	0.11 A
110V/ 1ph At maximum torque	0.17A
110V DC At maximum torque	0.21A
Weight	1.8 kg

Materials of construction:

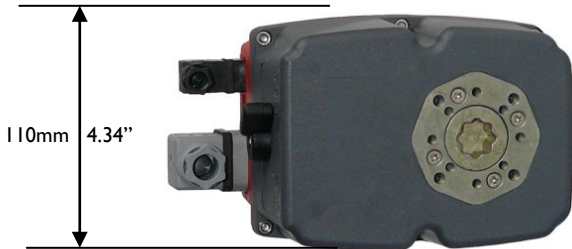
Housing	Anti-corrosive Polyamide
Fasteners	Stainless steel
Gears	Polyamide (speed reducing) & steel
Shaft	Stainless steel
Output drive	Zammac
Position indicator	Glass filled Polyamide

Method of operation:

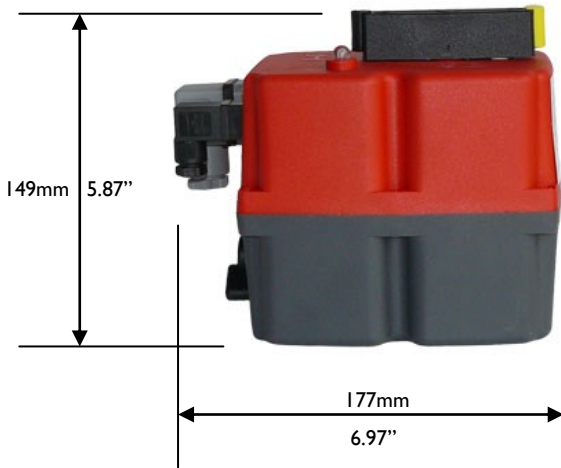
On receipt of a continuous power signal within the voltage range shown above, the motor in the J3 electric actuator runs and, via a flat gear system, rotates the output shaft. The motor is stopped by internal cams striking micro switches. On receipt of a reversing continuous signal, the motor turns in the opposite direction reversing the output drive.

Note: The power signal needs to remain on at all times to activate the thermostatic anti-condensation heater. The volt free end of travel confirmation switches must NOT be used to cut the power. As they are set ahead of the final motor stop position, cutting the power on receipt of the end of travel signal will result in the J3 electric actuator stopping short of the full open or full closed position determined by the motor switch settings.

Dimensions: J3 - H20



Mounting	F03	F04	F05
ISO: 521 I	36mm	42mm	50mm
Drive	14mm (standard)		
Optional	9mm	11mm	



The standard on-off version can have plug and play failsafe or modulating kits retro-fitted to convert the function.

The modulating kit contains a self calibrating digital positioner.

Change of function retro-fit kits:

Failsafe option

This kit converts the actuator to a failsafe electric actuator using a BSR (Battery 'Spring Return') system that provides an alternative (battery) power supply to set the actuator in the failsafe position should the main power supply fail.

It can be configured normally open, or normally closed.



Modulating Option

Using the new self calibrating and self adjusting digital positioning system, this kit converts the actuator to a modulating electric actuator using either a 4-20mA or 0-10VDC control signal.



LED status light



Modulating failsafe option

Install both kits !

J3 Electric rotary actuator



Modulating version 'DPS' Digital Positioning System



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What it does and how it works

J+J's DPS system provides accurate modulating function whereby the movement of the actuator is controlled by either a 4-20mA or a 0-10VDC control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator.



This is achieved with the use of an internal digital positioning system designed and developed by **J+J**.

The main advantages of **J+J's** DPS system are that the system is retro-fittable to the standard **J3** on-off electric actuator, it is self-calibrating, provides an output signal as standard, and virtually eliminates 'hunting'.

An internal microprocessor on the DPS circuit board continuously monitors digitally the analogue input and output signals and compares them to the physical position via an output shaft feedback system, moving the actuator as required to balance the signals.



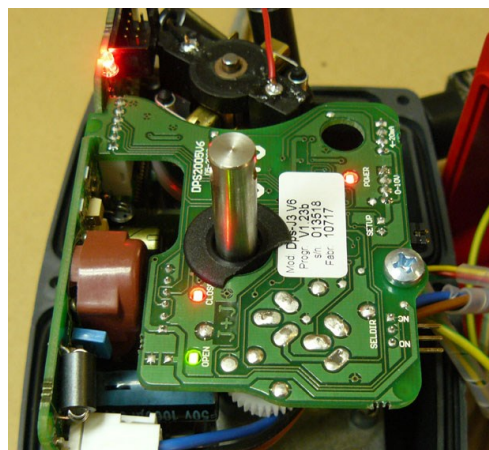
Digital control ensures high sensitivity and repetivity, with all the usual positioner characteristics coming in at under 1% (hysteresis, linearity & precision).



The DPS is self calibrating, and on initial start-up or on restoration following a power cut, will go through a short automatic set-up sequence.

In situations where the actuator is used in manual mode (eg: commissioning) and put back into automatic mode with the actuator out of it's normal operating quadrant, the DPS will auto-adjust itself back into the correct quadrant, re-set itself, and be ready for use.

The DPS can be supplied as a retro-fit kit containing all the parts required to convert a standard on-off electric actuator to a modulating unit, and can be used in conjunction with the **J+J** BSR kit to produce failsafe modulating functionality.



Quick guide to the **J3** electric actuator standard features :

Highly visible LED light gives continuous actuator status indication.

J3 L - 12-24V AC/DC

J3 H - 80-240V AC/DC

Multi-voltage electric actuator with auto-voltage sensing:

*Torque output: range:
25~95Nm Break
20~80Nm Reseat*

*Electronic torque limiter
Protects against valve jams*

Anti-condensation heater

Manual override

All connections via external DIN plugs ~ no need to remove cover to connect

Volt free end of travel confirmation switches

IP65 weatherproof housing

CE marked

Traceable sequential serial numbering system

Optional failsafe kit (Battery Back-up) - actuator fails to safe position on power failure

Optional modulating kit with digital positioning system, either 0-10V or 4-20mA