



# Model **J3** – H35



Doc: J3-H35/07

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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** offers more user-friendly features than the J2, and introduces a highly visible LED status light.

This visual indicator shows whether the electric valve 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** 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 by an internal thermostatic anti-condensation heater that does not require a separate independent power supply.

Standard function for the **J3**-H35 is power open, power close, stays put on power failure.

New to the **J3** 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**'s standard features :

*Multi-voltage 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 electric valve actuator senses an impending valve jam, the electronic torque limiter is activated and on activation, repeatedly flashes the LED on and off.





The **J3** - 35 quarter turn electric valve actuator

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

## Specifications: **J3 – H35**

Voltage range - automatically sensed by actuator	85-240 AC (Iph) or DC
Operating time (0-90° no load)	11 seconds
Maximum break torque	38 Nm / 336 lb.ins
Maximum operating torque (run/ reseat)	35 Nm / 309 lb.ins
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 & C 192
Consumption:	
240V/ Iph At maximum torque	0.12 A
240V DC At maximum torque	0.13A
110V/ Iph At maximum torque	0.23A
110V DC At maximum torque	0.24A
Weight	1.9 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 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:

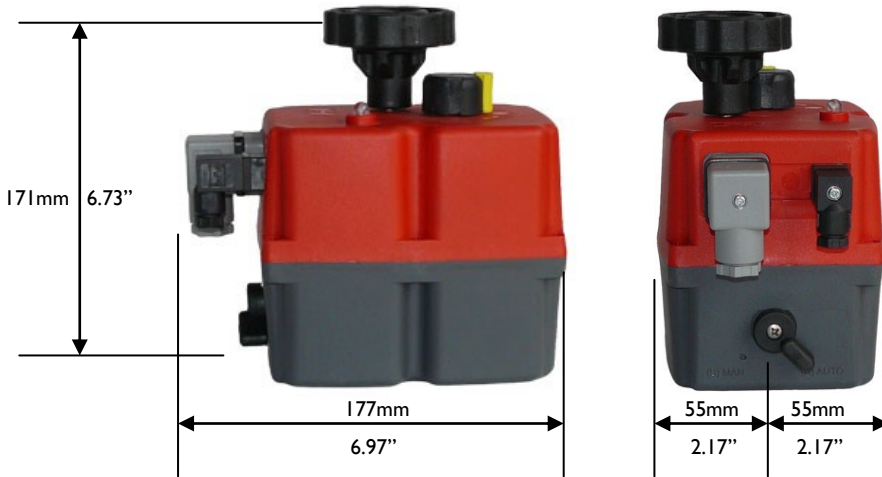
The power signal needs to remain on at all times to activate the thermostatic anti-condensation heater.

The volt free end of travel confirmation switches must NOT be used to cut the power.

**Dimensions: J3 - H35**



Mounting	F03	F04	F05
ISO: 521 I	36mm	42mm	50mm
Drive	14mm		
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 electric actuator to a failsafe unit using a BSR (Battery 'Spring Return') system that provides an alternative (battery) power supply to set the valve actuator in the failsafe position should the main power supply fail.

It can be configured normally open, or normally closed.



**LED status light**



**Modulating Option**

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



**Failsafe modulating option**

Install both kits !



# Modulating version 'DPS' Digital Positioning System



Doc: J3/DPS/02

Jan 2009

## 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 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.



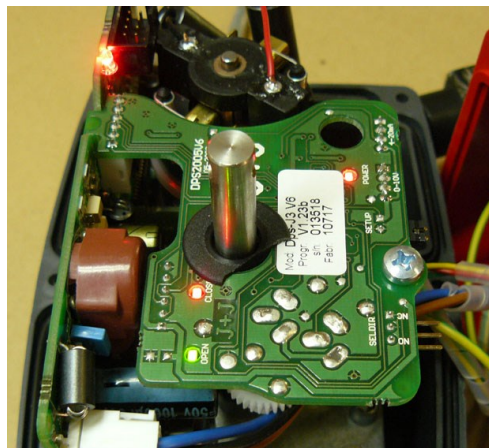
Digital control ensures high sensitivity and repetivity, with all the usual positioner characteristics coming in at under 1% (hysteresis, linearity & precision).



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 actuator to a modulating unit, and can be used in conjunction with the **J+J** BSR kit to produce fail-safe 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 capable 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*