Feature rich J+J multi-voltage 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 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 ISO5211 multi-flange mounting and a double square drive, allowing fast mounting to ISO5211 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 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 actuator senses an impending valve jam, the electronic torque limiter is activated and on activation, repeatedly flashes the LED on and off.

The LED is off.

Informing site operators that the actuator has been left in ‘manual’ mode for a pre-set time.
Specifications: **J3 – H35**

Voltage range - automatically sensed by actuator
85-240 AC (1ph) or DC

Operating time (0-90° no load)
8 seconds

Maximum break torque
38 Nm / 359 lb.ins

Maximum operating torque (run/ reseat)
35 Nm / 309 lb.ins

Duty rating
75%

IP Rating (IEC 60529)
IP65

Working angle
90° (180° or 270° options)

Mounting
ISO:5211 x DIN 3337

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 +60° C

Electrical connecting plugs
DIN 43650/ ISO4400 & C192

Consumption:

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Maximum torque, heater on/ off</th>
<th>240V/1ph</th>
<th>240V DC</th>
<th>110V/1ph</th>
<th>110V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>240V/1ph</td>
<td>Maximum torque, heater on/ off</td>
<td>0.13 A</td>
<td>0.07A</td>
<td>0.24A</td>
<td>0.14A</td>
</tr>
<tr>
<td>240V DC</td>
<td>Maximum torque, heater on/ off</td>
<td>0.07A</td>
<td>0.04A</td>
<td>0.18A</td>
<td>0.07A</td>
</tr>
<tr>
<td>110V/1ph</td>
<td>Maximum torque, heater on/ off</td>
<td>0.13 A</td>
<td>0.10A</td>
<td>0.18A</td>
<td>0.07A</td>
</tr>
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<td>0.07A</td>
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<td>0.18A</td>
<td>0.07A</td>
</tr>
</tbody>
</table>

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

The modulating kit contains a self calibrating digital positioner.

### Dimensions: J3 - H35

<table>
<thead>
<tr>
<th>Mounting</th>
<th>F03</th>
<th>F04</th>
<th>F05</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO: 5211</td>
<td>36mm</td>
<td>42mm</td>
<td>50mm</td>
</tr>
<tr>
<td>Drive</td>
<td></td>
<td></td>
<td>14mm</td>
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<tr>
<td>Optional</td>
<td>9mm</td>
<td>11mm</td>
<td></td>
</tr>
</tbody>
</table>

### Change of function retro-fit kits:

**Failsafe option**

This kit converts the actuator to a failsafe unit 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 device using either a 4-20mA or 0-10VDC control signal.
Model J3
Wiring Diagram - AC or DC

AC (1ph) OR DC SUPPLY - WIRING FOR ON-OFF OR FAILSAFE ACTUATORS

POWER SUPPLY CAN BE EITHER 3 OR 2 WIRE

3 WIRE SYSTEM

POWER CONNECTION

OPEN
CLOSE

S = CHANGE-OVER SWITCH
To supply continuous signal until end of travel is reached

POWER CONNECTION

CLOSE
OPEN

S = REVERSING POLARITY SWITCH
To supply continuous signal until end of travel is reached

AC 1PH SUPPLY
DC SUPPLY

2 WIRE SYSTEM

POWER CONNECTION

OPEN
CLOSE

S = CHANGE-OVER SWITCH
To supply continuous signal until end of travel is reached

POWER CONNECTION

CLOSE
OPEN

S = REVERSING POLARITY SWITCH
To supply continuous signal until end of travel is reached

VOLT FREE CONTACT CONNECTION

FUNCTION: ON-OFF VERSION

Power open, power close
Stays put on mains power failure

FUNCTION: FAILSAFE VERSION

Power open, power close - trickle charges battery system in either open or closed position
Actuator sent by battery power to pre-set failsafe position on power failure
Actuator returns to pre-failure position on power resumption.
Failsafe can be either NC (normally closed) or NO (normally open)
**AC (1ph) OR DC SUPPLY - WIRING FOR MODULATING ACTUATORS**

**FUNCTION: MODULATING VERSION**

Power open, power close - actuator movement controlled by input signal (4-20mA or 0-10VDC)
Standard operation: 4mA or 0V = actuator closed, 20mA or 10V = actuator open (can be reversed)
Standard operation: Actuator closes on loss of control signal, stays put on loss of mains power
Output signal (in same format as supply signal) provided as standard.