

Feature rich multi-voltage smart electric actuator with LED status light and function conversion kits.



Overview

The J3C-H140DPS is a smart modulating electric actuator, designed and manufactured by J+J in the EU, is of industrial quality, fully weatherproof and carries the European CE marking.

With simple external electrical connections to supplied DIN plugs which eliminate the need to remove the actuator's cover to connect, and with multiple ISO5211 valve mounting options, the J3C-H140-DPS is very user friendly to install.

A highly visible multi-color LED gives users continuous actuator feedback status advising the actuators operational status, a top rated feature by users. In-built protective features include a thermostatic space heater and an electronic over-torque limiter.

The modulating version has an internal digital positioner pre-installed and calibrated, and with a permanent power supply, movement is controlled proportionally to the input control signal. A control feedback signal is provided as standard.

J3C-H140 Electric Actuator Specifications

Voltage range - automatic sensing	85-240V AC (1ph) or DC
Control signal	4-20mA or 0-10V I/O
Operating time (0-90° no load)	34 seconds
Maximum break torque	1504lb.ins (170Nm)
Maximum operating torque (run/ reseal)	1239lb.ins (140Nm)
Duty rating	75%
IP Rating (IEC 60529)	IP67
Working angle Standard (on request)	90° (180° or 270° options)
Mounting ISO:5211 x DIN 3337	F07 & F10 x 22 star (std)
Motor switches	2 x SPDT micro switches
End of travel confirmation (volt free)	2 x SPDT micro switches
Heater	3.5W
Ambient temperature range	-4 to +158°F (-20° to +70°C)
Electrical connecting plugs	EN175301-803
Weight	11.5lbs (5.2kg)

J3C-L140 Consumption

110V AC	At maximum torque	0.52A (for power supply sizing x 2.5)
240V AC	At maximum torque	0.31A (for power supply sizing x 2.5)

J3C Main features

IP67 Weatherproof, UV protected, corrosion resistant plastic housing.

LED light gives user continuous visual actuator status feedback - if the LED is flashing, there's a problem!

Many protective features as standard - such as over-torque and anti-condensation.

Multi-voltage capable, automatically sensed

Very user friendly and easy to install - all the electrical connections are external.

Unique plug & play function conversion kits create FAILSAFE & MODULATING function from a standard on-off electric actuator.

Available with actuator function: POWER OPEN - POWER CLOSE FAILSAFE **MODULATING** FAILSAFE MODULATING

Wiring Diagram

In these 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.

J3C MODULATING ELECTRIC ACTUATOR

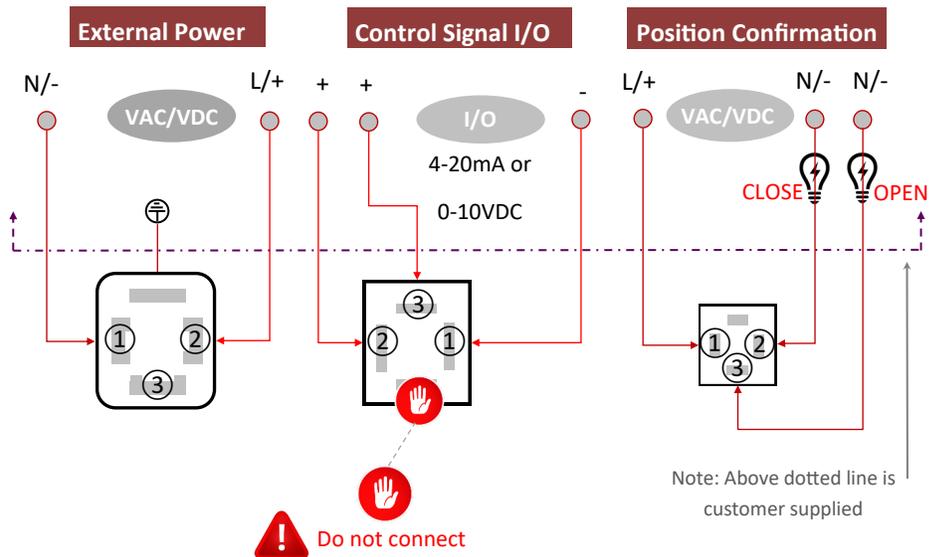
Movement proportional to input signal

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

J3C MODULATING WIRING



NOTE ON POWER SUPPLIES

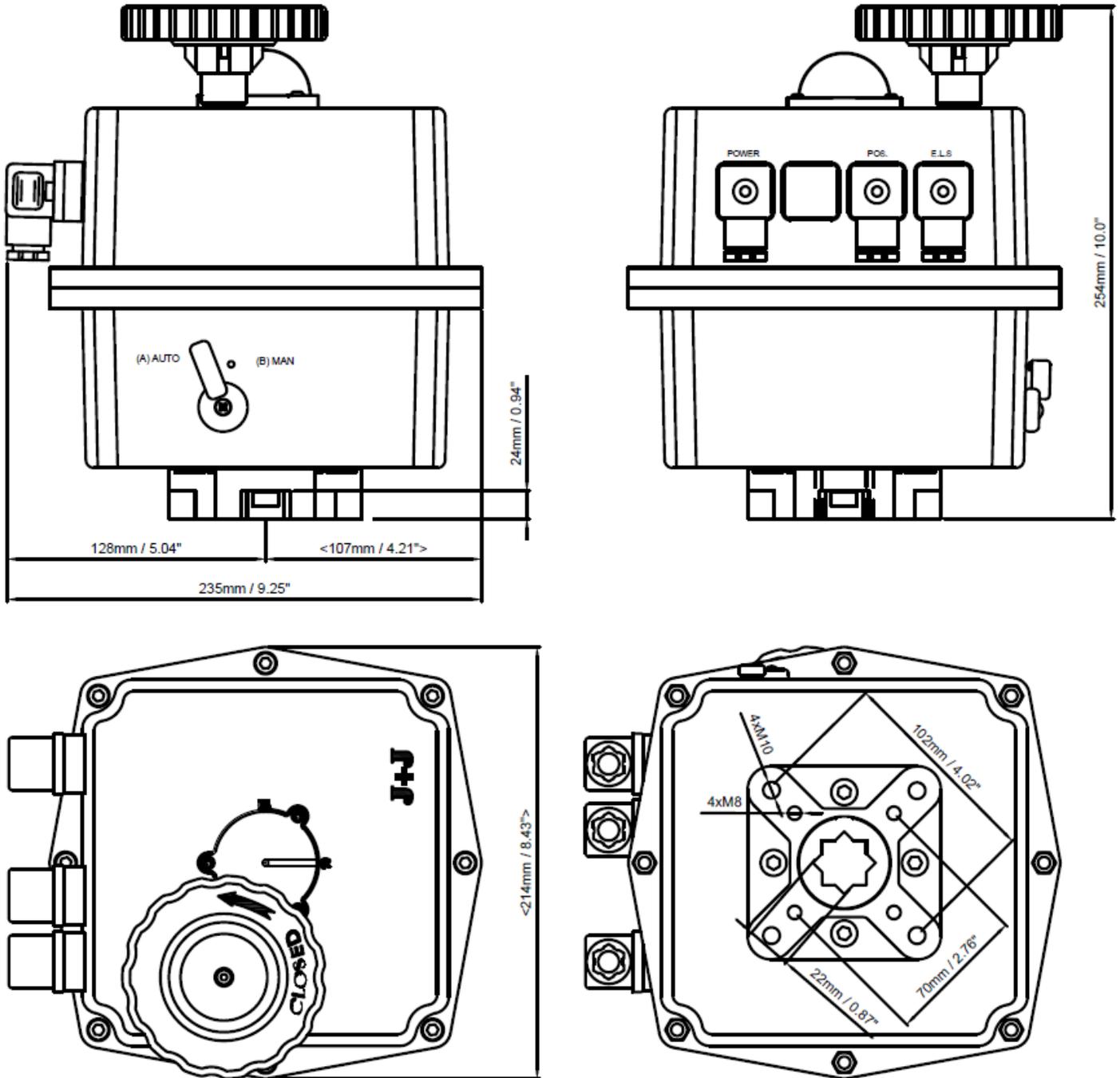


It is imperative that the power supply has sufficient capacity to drive the J3C electric actuator. Ensure that safety factor of 3 is used to cover inrush on start-up, and for increased draw over time as the brushed DC motor wears.

LED Colors

In modulating versions, the LED advises whether the output shaft position matches the control input signal (proportionately, so for example if the control signal is 12mA and the actuator is at rest, at 50% open) and if it does, the LED is solid blue. If a difference exists, the positioner will drive the actuator in the appropriate direction to eliminate the difference, and the LED will advise the direction it is moving in. So, if the control signal is 12mA (required position =50% open) and the actuator is closed, the positioner will drive the actuator open until it reaches 50%, and simultaneously flash the LED green and blue—green to indicate opening, and blue to confirm a positioner is installed. If the actuator had been open when the 12mA signal was applied, the LED will flash red and blue.

Dimensions





J3C MODULATING ACTUATOR WITH DPS PLUG & PLAY KIT PRE-INSTALLED

HOW THE DPS MODULATING SYSTEM WORKS

The rotational movement of the J3C modulating actuator is controlled by the DPS (Digital Positioning System), and creates movement proportional to the input control signal.

The DPS PCB compares the physical position of the J3C actuator’s output shaft, fed back via a potentiometer driven by the output shaft, to the input signal. If a difference exists between input (desired) and output (actual) positions, the DPS considers that an error and instructs the actuator’s motor to turn in the direction and angular travel required to eliminate the difference.

The DPS is programmed to virtually eliminate hunting and once the desired input position is reached, it stops.

Note: It is important that the control signals applied to the J3C modulating electric actuator are ‘clean’ and that a sensible deadband is set to prevent the DPS trying to constantly respond to changes in input signal. If this is likely to be problematic or difficult to control, we recommend installing a 2200µF capacitor across the 4-20mA input control signal terminals to act as a ‘buffer’.

J3C Models 140 & 300 : POSITIONER SPECIFICATIONS

Model	J3C 140 & 300
Accuracy	3% F.S.
Linearity	2% F.S.
Hysteresis	3% F.S.
Points of resolution/ steps	70 in 90 degrees
4-20mA Impedance	100 Ω
0-10V Impedance	13 KΩ
Weight of installed DPS components	0.1kg

J3C Models 140 & 300: MATERIALS OF CONSTRUCTION

Housing	Anti-corrosive Polyamide
Fasteners	Stainless steel
Gears	Polyamide (speed reducing) & steel
Shaft	Stainless steel
Output drive	Zamac
Position indicator	Clear Polyamide