All J+J electric actuators are tested prior to shipping. Most issues are site related, we hope that you will find a solution to your problem in this guide. If not, please contact us for support.

ISSUE: DPS POSITIONER WON'T SET UP

POSSIBLE REASON(S)	POSSIBLE SOLUTIONS/ ADVICE
Incorrect installation	**Notes:** • ALWAYS test the actuator as an on-off actuator into which the DPS is going to be installed BEFORE installing the DPS, this confirms that the actuator is working correctly before the function conversion. • Send the actuator to the **CLOSED** position **before** installing the DPS. Installing the DPS when the actuator is in the closed position eliminates most of the issues users have associated with retro-installation.
	• The earth pin on the control Din plug has been connected to ground. This pin is used for an external soft reset procedure and must NOT be connected to ground.
	• 4 core cable has been used to wire the control Din plug and whilst respecting the wiring diagram and not connecting the earth, the redundant 4th cable has been cropped but strands of it can touch terminals within the control Din plug causing short-circuit malfunction. • • Each time this cropped cable touches the earth pin, the actuator will perform a soft reset.
	• Whenever external power is lost, on re-start the positioner performs a soft reset to recalibrate, the positioner will not respond to control signal changes during this procedure.
	• The control Din plug wiring is incorrect and/ or • A signal with the wrong polarity is being applied. • Connecting the end of travel Din plug to the control Din plug - doing so would apply excessive voltage to the DPS PCB and cause irreparable damage to the DPS PCB. Such damage is not covered by the warranty. Note: The control signal Din plug base is fitted upside-down compared to the end of travel confirmation Din plug to prevent DIN plug connecting errors.
	• The white DPS PCB plug has not been pushed firmly home into the receiving socket on the main PCB.
	• The power polarity for DC power supplies has not been respected.
	• Cables trapped inside the actuator when the cover was replaced following DPS installation. Ensuring the internal cables (power, control signal, end of travel switches and earth) are not crossed or twisted when the cover is replaced prevents a major cause of malfunctioning DPS's. Amongst other reasons, the control signal push-in plug can be pulled out if the cables are twisted or crossed.

ISSUE: DPS POSITIONER NOT RESPONDING CORRECTLY TO CONTROL SIGNAL

POSSIBLE REASON(S)	POSSIBLE SOLUTIONS/ ADVICE
Control signal is most often the main culprit. There are many contributory factors.	**NOTE:** *Most operational issues with modulating actuators relate somehow to signal problems. If a soft reset doesn't correct the issue, start by removing the user's signal (remove the centre Din plug) and applying a signal from a hand held device, totally independent from the customer's system, to see if the issue disappears – often it doe, proving that it is a site control signal issue. Alternatively, if this is not possible or practical, if there are other similar actuators on the same system that are working, remove the 'faulty' actuator and connect it to the cables from another actuator that is known to work, to see if the 'fault' disappears, or transfers.*
	In no particular order: • Wrong dip switch setting
	• EMI (Electro-magnetic interference) causes interference/ 'noise' in the control signal being received by the DPS, resulting in poor performance. All control devices operate more accurately and reliably with a 'clean' signal. Common causes of electrical interference: • Voltage surge, voltage drops, voltage spikes, line faults (damaged cable, bad connections). • Close proximity to electronic equipment, and/or to power source. • Noisy motors, relay 'chatter'. • Poor dead-band control in process controller providing the signal to the DPS Suggested remedies: • Shielding the control cables from the power cables as close proximity of power and control cables is a known cause of signal issues. • Add a voltage stabilizer/ power conditioner • As with most things, the higher the quality the process control equipment, the better
	• Signalling devices and/ or controller issues cause problems for the DPS as the DPS receives the signal sent by the controller. If the device isn't correctly configured it can emit rapidly fluctuating signals which causes the controller to constantly adjust its output. The effect of this can be reduced by adjusting the controller's dead-band (sensitivity) and other settings. To identify where the cause of the problem lies: • Check the output from the physical device (temperature sensor, pressure sensor, any type of transducer). • Then check the output from the control panel • Then check the signal at the actuator's Din plug
	0-10V Control Signals: 0-10VDC Control signals are susceptible to issues caused by; • Cabling issues – voltage drop (cable size, length of run, power supply) • Electrical interference from motors, relays etc • 0V (zero volts) is normally the closed position but could be loss of signal (which is why some prefer 2-10V to differentiate between the two), making diagnosis tricky as it could be a controller fault and it is not sending a signal, or it's OK and sending a correct 0V. • Also, check that the 0V is not linked to the power side of the electrical system, it needs an independent supply.

	• For unstable signals, a 2200µF capacitor between the +ve and –ve of the 0-10V may help.
	Visual checks: • Often it is not easy to see a fluctuating signal by the naked eye, and the change in control signal can be small – sufficient to cause the motor to constantly change direction but insufficient to physically move the gears. It is more likely that the fluctuations can only be seen by checking the signal with a loop calibrator or similar.

ISSUE: DPS POSITIONER SOFTWARE HAS FROZEN

POSSIBLE REASON(S)	POSSIBLE SOLUTIONS/ ADVICE
Lost calibration, software locked up/ looping in micro-chip	• Perform 'soft reset' of software by following the procedure below:
	• Remove power
	• Remove control signal Din plug (centre plug)
	• On the control Din plug base, create a short circuit between pin 3 (at 6 ' clock position) and pin 1 (at 3 o' clock position).
	• Apply power. LED blinks then goes solid. After 5 seconds, remove short
	• Soft reset complete – reconnect all Din plugs and re-test.
	• If not successful, perform hard reset (remove DPS completely, operate actuator as on-off, then re-install DPS)