



***NOTICE: Always refer to the appropriate Vehicle Service Manual when troubleshooting electrical problems. See all GENERAL INSTRUCTIONS WARNINGS AND PRECAUTIONS***



**SEVCON MOS 90**

1. The MOS 90 has a green diagnostics LED in the front panel.
2. The green LED will turn "on" and shine continuously when the MOS 90 is powered up and working correctly.
3. The green LED will be "off" if no power is being supplied by the MOS 90, no ground to B- post, LED Failure or internal controller fault.
4. The green LED will flash a sequence of flashes if the MOS 90 is damaged or is receiving an improper signal from the machine circuit. An explanation of the flash sequences or 'flash faults' is shown in the tables below.
5. The MOS 90 is high temperature protected, called 'thermal cutback'. The high temperature cutback starts at 80 degrees Celsius and the MOS 90 will shut down at 90 degrees Celsius. This is a gradual feature and the symptom is: powered functions will gradually operate slower and slower. Continuing operation at high temperature will damage the MOS 90.

**Traction controllers.**

Number of Flashes	Fault Description
2	Incorrect start procedure fault. Both forward and reverse selected.
3	Bypass contactor welded - recycle through neutral to clear. Contactor coil short circuit - recycle the key switch to clear.
4	Directional contactor welded.
5	Direction contactor did not close, or open-circuit motor.
6	Faulty accelerator input.
7	Low battery voltage.
8	Thermal cutback.
10	Faulty tachometer speed input.
11	Faulty tachometer calibration input.
12	Sequence fault

**Pump Controllers**

Number of Flashes	Fault Description
LED off	Mosfets did not turn on.
2	Pump inhibit input operating.
3	Short circuit across Mosfets, or motor open circuit.
4	Contactor welded.
7	Low battery voltage.
8	Thermal cutback operating.

NOTE: A handheld calibrator may be plugged into the MOS 90 control for digitally incrementing or decrementing the parameters. The preset value of the parameter will be shown on an LCD display. Additionally, the calibrator can perform certain measurements on the controller for diagnostics.