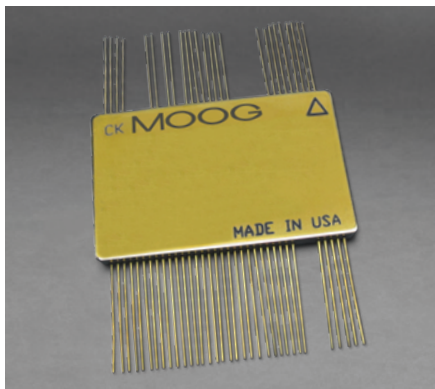


HYBRID 3-PHASE STEPPER MOTOR CONTROLLER

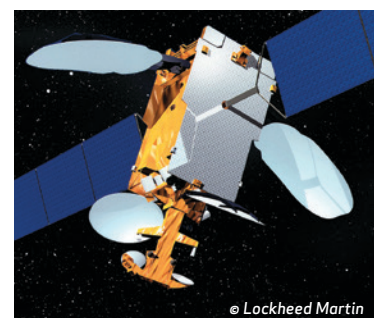
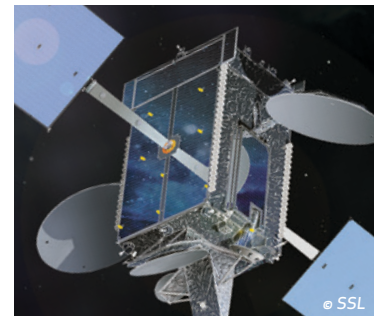


Three-phase permanent magnet stepper motors driven in bipolar mode have become very popular in space-flight motion control applications. These units offer the advantage of high output, small step angle, brushless reliability, and good conductive cooling. The Moog Stepper Motor Controller Hybrid Microcircuit Assembly was developed to offer the system designer a space-qualified, self-contained motor drive circuit module as an

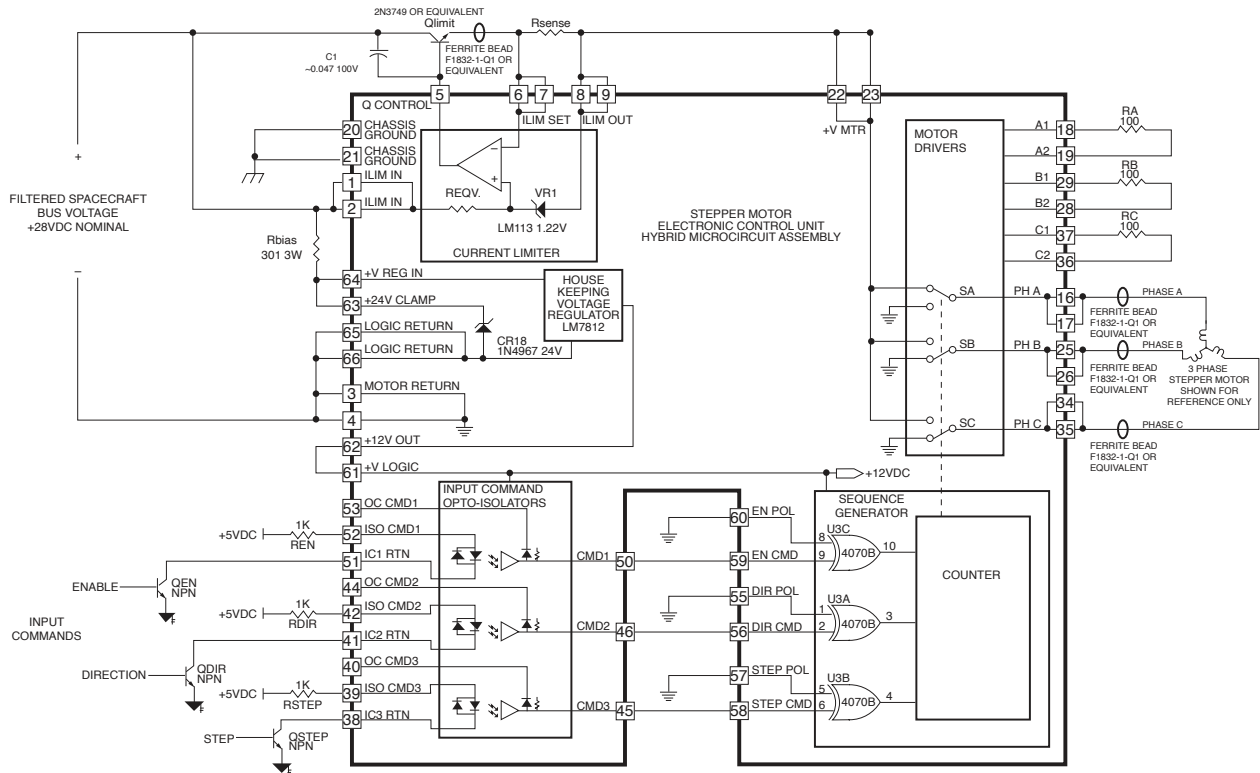
alternative to designs with discrete components. Pinouts are configured for application flexibility in areas where it is most commonly desired.

The devices are produced in a Class K facility per MIL-PRF-38534 using components that pass Class K element evaluation. Screening and Quality Conformance Inspection shall be per MIL-PRF-38534, Class K. The spacecraft controller generates motor direction, enable, and step commands to control the stepper motor. The device is capable of receiving commands from either an open-collector drive, such as TTL or the output of opto-isolators in the spacecraft controller; or a current drive capable of operating the opto-isolators contained within the device.

The device shall be required to pull up each of the open collector command lines to the device logic power (+12 Vdc nominal) via a 5.1 K \pm 5% resistor. The open-collector command inputs are designed to respond when driven low to 0.7 Vdc maximum at 2.2 mA. The optically isolated command inputs are designed to respond to a minimum current of 2.0 mA. When energized, the isolated command inputs shall perform the same function as when the open collector inputs are pulled low.

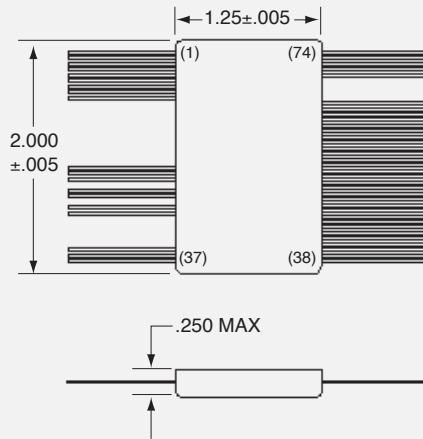


HYBRID 3-PHASE STEPPER MOTOR CONTROLLER



Stepper Motor Electronic Control Unit Simplified Block Diagram

DIMENSIONS



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