App Note: Hall-Effect Actuation Systems for Aerospace Applications

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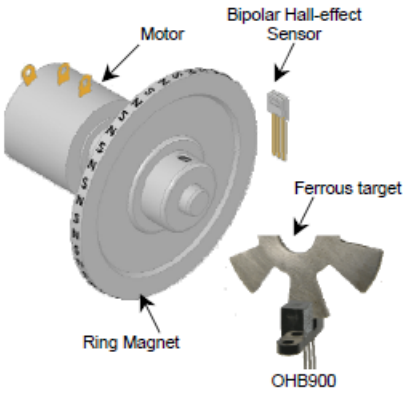
Application

Actuation Systems address the precise motion control requirements of spacecraft, aircraft, satellites and missiles. Functions requiring motion control include: optical filter selection, camera control, antenna positioning, fin positioning, solar panel orientation and door open/close mechanisms.

Requirement

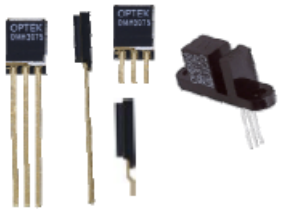
Actuation systems can use a combination of linear and rotary actuators to perform their motion-controlled functions. A ring magnet and a bipolar Hall-effect sensor can determine the precise position and speed of the linear actuator shaft. Similarly, a slotted Hall-effect assembly and a ferrous target can be use to indicate the position of a rotary shaft.



Solution

Hi-Reliability Unipolar, Bipolar or Slotted Assembly Hall-Effect Sensors

- Excellent temperature stability to operate in harsh environments
- Operates over a broad range of supply voltages
- Output amplitude is constant at switching frequencies from DC to over 200 kHz
- Suitable for military and space applications
- COTS Plus processing patterned after Class “B” or “S” of MIL-STD-883 available
- Designed for non-contact switching operation
- Low power consumption. The sensors typically draw only 4mA to 5mA of supply current
- Passed Radiation Harness Testing up to 350Krad (si) per MIL-STD-883



OMH
Hall-effect Sensor
Through-hole
and SMD pacakges

OHB900
Slotted
Hall-effect
Assembly

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