APPLICATION NOTE

CAS DATALOGGERS

Stray Current Monitoring of NASA's Space Launch System

Grant YoYo Loggers Chosen for Pyrotechnic Firing Initiation Lines

NASA's Space Launch System, or SLS, is a powerful, super heavy-lift launch vehicle for a new era of human exploration beyond Earth's orbit. With its unprecedented power and capabilities, SLS will launch crews of up to four astronauts in the agency's Orion spacecraft on missions to explore multiple, deep-space destinations.

During the validation of the Space Launch System, the pyrotechnic cabling needs to be monitored for stray, induced current on the firing initiation lines. Because of limited access and the thermal environment inside the launch vehicle, it was vital to have a small, robust battery-powered device to record these measurements. The Grant Instruments YoYo devices were tested to verify they would operate under the stringent SLS thermal and EMI environment. The result was the selection of the 2YL-M90-4M loggers being selected for the stray current monitoring system.

This device provides 2 configurable analog inputs for external signals along with internal sensors for ambient temperature and humidity. The 2YL-M90-4M is being used in conjunction with the YY-CU cable to allow it to accept a 0-10 volt input. In addition to voltage, the two configurable inputs can be set up for the wide range of probes available from Grant Instruments or any type of sensor with a standard output signal, for example, 0.20mA, 0.10V, pulse/frequencies, PT100, PT1000, and most thermocouples. On-board memory allows the device to store up to 4 million data points which can be retrieved via its USB interface. An internal replaceable battery provides up to 4 years of operation depending on the sample rate.

For more information on Grant Data Loggers, or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.