



VERITEQ

Superior Temperature & Humidity Monitoring

Client: Success Story: NASA

Category: Temperature Monitoring

Veriteq Data Loggers' Ten-Year Battery Life Protects Critical NASA Data

In August 2001, NASA launched the Materials on the International Space Station Experiment (MISSE), a cooperative effort with the Air Force Research Laboratory, Boeing, the Langley Research Center and several other aerospace industry leaders.

MISSE is a series of experiments designed to test the effect of the space environment on different materials over extended periods of time, in hopes of developing new, more affordable materials for launch systems and spacecraft. Approximately 1,500 specimens are being tested for durability and survivability in the hostile and unforgiving space environment. Samples range from components such as switches, sensors and mirrors to materials such as polymers, coatings and composites. Biological materials such as seeds, spores and various types of bacteria are also being evaluated.

In November 2000, NASA was looking for a way to measure and record temperature for the MISSE. The chosen system needed to be exceptionally accurate, have long battery and memory life, resist vibration and G-forces and survive vacuum conditions. It also needed to withstand dramatic temperature swings as the space station shifted from direct sun exposure to the shadow of the Earth.

After considering several options, the NASA team opted to use Veriteq precision temperature data loggers. A data logger is a compact, self-contained, wireless temperature and humidity recorder that incorporate sensor, memory, power supply, clock and microprocessor enclosed in a pager-sized device. Veriteq data loggers are easy to install, accurate to 0.25°C, and have a ten-year battery life.

Data loggers were integrated into other NASA measurement instrumentation and used to measure temperature in externally mounted Passive Experiment Containers (PECs). PECs, each containing a different experiment, were attached to select locations on the space station and exposed to designated orientations.

Although the scheduled timeframe for the first MISSE tests was one year, the grounding of the shuttle program following the Shuttle Columbia disaster delayed plans for retrieval of the experiments. The PECs remained in place on the International Space Station for a full three years before they could be recovered.

"Even with the significant delays in recovering data, the data loggers performed exceptionally well in the MISSE experiment," says Veriteq president, Kevin Bull. "Their ten-year battery life meant that critical data was still available. NASA could be confident that the loggers would function properly for the duration of the return trip and the information could be downloaded once they returned to earth. There aren't many precision data loggers that could survive and perform as well under such extreme conditions."

For more information about the Materials on the International Space Station Experiment, visit the following link:

http://www.nasa.gov/centers/langley/news/factsheets/misse_2005.html.

For more information about Veriteq precision data loggers, visit www.veriteq.com.

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