Axiomatic Reinforces Engine Monitoring With Rugged RTD Modules

June 03, 2026

MISSISSAUGA, ON - June 03, 2026 -
Axiomatic Technologies Corporation, a manufacturer of rugged electronic controllers and signal conditioning modules, provides a comprehensive lineup of resistance temperature detector modules engineered for reliable engine temperature monitoring across demanding industrial and mobile applications. Headlined by the AX180300 8 Channel RTD Scanner, the rugged modules are designed to deliver precise thermal data in environments where conventional sensors often fall short, supporting safety operations in propulsion or auxiliary power for marine vessels and power generation systems.

Resistance temperature detectors remain among the most accurate and stable instruments for measuring temperature in engine-driven machinery. Axiomatic has developed a lineup of rugged RTD modules specifically for engine temperature monitoring that converts raw Pt100, Pt200 or Pt1000 sensor inputs into standardized data for engine control systems. This enables operators to track exhaust temperature, winding temperature, and fluid temperatures with a high degree of confidence.

The modules are built to withstand the shock, vibration (tested to 7.32 Grms), and temperature extremes typical of engine environments. Enclosures meet IP67 ingress protection ratings using TE Deutsch

connectors, and the electronics are rated for an operating temperature range of -40 degrees C to 85 degrees C. This level of environmental hardening makes the products well suited for applications in power generation, stationary and mobile as well as and marine propulsion ?where sensor failure can lead to costly downtime. The AX180300 product is supported by marine type approvals including ABS, BV, DNV, and LR marine societies.

"Temperature monitoring is one of the most fundamental aspects of protecting an engine investment," said Amanda Wilkins, CMO of Axiomatic Technologies Corporation. "Our RTD modules give equipment operators the reliable, accurate data they need to make informed decisions about engine health, whether they are managing a single generator or an installation with many."

The AX180300 supports 8 independent RTD input channels, each configurable for two-wire, three-wire, or four-wire connections. This flexibility allows integration with a wide range of sensor types already installed in existing equipment. The module features auto-baud-rate detection (250 kbit/s to 1 Mbit/s) and transmits data over an isolated SAE J1939 CAN bus, ensuring compatibility with modern electronic control architectures.

Signal conditioning is handled internally, with linearization algorithms that compensate for the characteristics of platinum RTD elements across their full measurement range of 20 to 400 ohms. The result is a clean, accurate output signal with a resolution of 0.001 C. Built-in diagnostic features alert operators to open-circuit and short-circuit fault conditions at the sensor, providing three-way isolation between the CAN line, inputs, and power supply for added protection. Other models offer Pt1000 to Pt1000 connections as well as Pt1000 or Pt200 to CAN bus.

Axiomatic designs, validates and manufactures the modules at its facility, maintaining control over the full production process from circuit board assembly through final end of line testing. This vertically integrated approach allows the company to maintain consistent product quality while offering the flexibility to accommodate custom configurations for OEM customers using the Axiomatic Electronic Assistant configuration tool.

"We work closely with engine manufacturers and system integrators to make sure our modules meet the specific performance parameters their applications demand," Wilkins said. "That collaborative approach has been central to how we operate, and it ensures that our products perform reliably in the field, not just on the test bench."

The RTD module lineup complements a broader portfolio of electronic controllers and CAN bus interface modules that Axiomatic offers for mobile and industrial machinery. Together, these products form an ecosystem of ruggedized electronic components that equipment manufacturers can use to build comprehensive monitoring systems without sourcing from multiple vendors.

Temperature data captured by the RTD modules can be transmitted over CAN bus networks to ECM?s, central displays and telematics gateways, supporting predictive maintenance strategies. As equipment operators increasingly adopt condition-based maintenance programs, access to accurate and continuous thermal data from engines becomes an essential input for maintenance scheduling.

For more information about the AX180300 8 Channel RTD Scanner and the full range of rugged electronic solutions, visit the Axiomatic Global Electronic Solutions website.

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