



Axiomatic Unveils Isolated CAN Controller with 12 Signal Outputs

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Axiomatic Technologies Corporation has announced the release of the AX030590, a rugged 12-channel signal outputs controller designed for mobile equipment applications requiring SAE J1939 CAN network integration. The new controller features three-way isolation between power, CAN bus, and outputs, providing enhanced protection for demanding industrial and vehicular environments.

The AX030590 controller supports 12 analog or digital outputs that can be individually programmed to deliver voltage, current, frequency, PWM, or digital signals. This versatility allows system integrators to configure the unit for a wide range of control applications using a single hardware platform. The controller interfaces directly with SAE J1939 CAN networks and incorporates automatic baud rate detection to simplify installation and commissioning procedures.

A distinguishing feature of the new controller is its comprehensive electrical isolation architecture. The three-way isolation design separates the power supply section, CAN communication interface, and signal outputs into electrically independent domains. This isolation approach protects sensitive network components from ground faults, voltage transients, and electromagnetic interference that commonly occur in mobile

equipment electrical systems.

The AX030590 accommodates a wide range of power supply voltages with nominal ratings of 12, 24, or 48 VDC and an operational input range spanning 9 to 60 VDC. This broad voltage compatibility enables deployment across diverse vehicle platforms including light-duty equipment operating on 12-volt systems, standard commercial vehicles with 24-volt architectures, and specialized machinery utilizing 48-volt electrical systems.

M. Ejaz, Product Manager at Axiomatic, described the controller's programming capabilities. "All logical function blocks within the AX030590 are inherently independent from one another but can be configured to interact with each other," Ejaz said. "This architecture gives engineers flexibility to create sophisticated control schemes while maintaining clear separation between functional elements."

Configuration of the AX030590 is performed using the Axiomatic Electronic Assistant software tool, which connects to the controller through a USB-to-CAN interface. The Electronic Assistant provides access to all user-configurable parameters, enabling engineers to customize input-output relationships, signal scaling, CAN message mapping, and diagnostic functions. Axiomatic offers the configuration tool in two kit options, the AX070502 and AX070506K, each containing the necessary hardware and documentation for setup.

The controller housing utilizes a TE Deutsch enclosure engineered to withstand harsh operating conditions. The sealed design achieves an IP67 ingress protection rating, providing complete protection against dust penetration and temporary water immersion. This environmental sealing makes the AX030590 suitable for outdoor installation on construction equipment, agricultural machinery, material handling vehicles, and power generation systems where exposure to moisture, dust, and debris is unavoidable.

Operating temperature specifications further demonstrate the controller's rugged design philosophy. The unit functions reliably across the extended temperature range required by mobile equipment applications, ensuring consistent performance in both extreme cold and high-heat environments encountered in construction sites, mining operations, and agricultural settings.

The release of the AX030590 expands the company's existing portfolio of signal output controllers with CAN connectivity. The current product line includes single-output controllers, four-channel analog and universal output controllers, CAN-to-PWM converters, and specialized sine wave output controllers. These products support both SAE J1939 and CANopen protocol standards to address different industry requirements. Axiomatic has indicated plans to release a CANopen version of the 12-output controller, designated AX030591, in the near future.

SAE J1939 has become the dominant communication protocol for heavy-duty vehicle and equipment

networks, providing standardized messaging for engine control, transmission systems, diagnostic functions, and auxiliary equipment. Controllers like the AX030590 serve as interface devices that translate network commands into physical control signals for actuators, indicators, and other output devices distributed throughout a machine.

Axiomatic Technologies Corporation specializes in the design, development, and production of electronic control solutions for applications demanding high performance and reliability. The company maintains design engineering teams in Canada and Finland, with manufacturing operations based in Canada. A United States facility is currently under development. Additional product information and technical specifications are available at www.axiomatic.com.

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