

ON-ENGINE ACTUATOR CONTROLLER

For rugged applications

Axiomatic's (Canada) on-engine actuator controller AX023230 features two control inputs and CAN communication. It allows for flexible use of sensor inputs wired directly or coming from the CAN network.

(Photo: Axiomatic)

THE CONTROLLER ALSO COMES WITH ONE current-controlled output to drive actuator coils up to 3 A. It is suitable for mounting in high temperature locations up to 125 °C, including installations under the hood of highway trucks or off-highway equipment. It can be utilized in rugged equipment such as a fuel line control systems, control of viscous clutches or other position control applications. This includes hydraulic valve controls. The control logic was developed using Simulink models, which enables collaboration with users for application of special algorithms.

The inputs include a universal input and a frequency input. The universal input can be configured to voltage, current, frequency, PWM, and digital types. Any of these two inputs can be used as feedback in a closed-loop configuration of the controller. In both open-loop and close-loop configurations, J1939 CAN messages drive the output. The proportional current output can be set up to drive current up to 3 A in an open-loop or closed-loop configuration. There are a number of built-in protection features that can shut off the outputs in adverse conditions. They include hardware shutoffs to protect the circuits from being damaged as well as software shutdown features that can be enabled in safety critical systems.

The embedded firmware was developed using Simulink. All setpoints are user configurable using the Axiomatic Electronic Assistant (EA). The controller and the Windows-based EA communicate with each other via J1939. The unit is rated as IP67 against dust and water ingress and is designed for withstanding shock and vibration. The controller is designed to meet the demands of on-highway or off-highway machine control applications with J1939 networks. These applications include off-highway and on-highway truck actuator drives, agricultural equipment viscous clutch control, and machine electrohydraulic position control.