

PRESS RELEASE

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Axiomatic releases two rugged and multi-functional 12 Universal Input, 12 Universal Output Valve Controllers (CAN SAE J1939 and CANopen®) with a Powerful Microcontroller.

The AX020420 and AX020421 Valve Controllers can read up to 12 input command signals. These inputs may be voltage (0-5V or 0-10V), current (0-20mA or 4-20mA), PWM/frequency (1Hz-10kHz), or digital types. Six (6) inputs are also configurable as resistive (30Ω-250kΩ).

The valve drivers provide 12 outputs of up to 2.5 A each, but the module's total output must not exceed 20 A). The outputs are user selectable as proportional voltage, proportional current, hotshot digital, on/off digital, or PWM.

The controllers have 1 CAN port. The AX020420 is SAE J1939 compliant with auto-baud-rate detection while the AX020421 supports CANopen®.



The devices feature a new microcontroller with more memory which allows the users to program it for a wide range of applications. The AX020420 can be configured using the Axiomatic Electronic Assistant without the need for custom firmware. Setpoint configuration can be saved in a file which can then be utilized to program the same configuration to another AX020420 device. The AX020421 comes with an EDS file for configuration.

An overview of software features of both models is provided below.

AX020420 – SAE J1939	
Function Block or Feature	Comment
CAN Receive Message	12 blocks
CAN Transmit	10 frames (10 signals each)
Conditional Logic	10 blocks
Constant Data	15 data points
DTC React	16 DTCs
J1939 Diagnostic	15 parameters monitored
Lookup Table	10 blocks
Math	5 blocks
PID Control	12 blocks
Programmable Logic	4 blocks
Set Reset Latch	5 blocks
Modbus Receive	10 blocks
AX020421 – CANopen®	
Function Block or Feature	Comment
CANopen RPDOs	7 PDOs, 4 Mappable subindexes per PDO
CANopen TPDOs	7 PDOs, 4 Mappable subindexes per PDO
Conditional Logic	10 blocks
Constant Data	15 data points
Lookup Table	9 blocks
Math	6 blocks
PID Control	12 blocks
Programmable Logic	3 blocks
Set Reset Latch	5 blocks
Input Diagnostics	Over & Under Thresholds for each Input
Output Diagnostics	Open & Short Circuit Detection for each Output
Controller Diagnostics	Over & under-voltage detection for Power supply Over-temperature detection CANopen BusOff event detection

This new valve controller can operate with battery power supply of 8 V to 36 V and is protected against reverse polarity, surge and transient, and undervoltage faults. Its outputs have overcurrent and short circuit protection. It can work in temperatures from -40 to 85°C (-40 to 185°F). Its enclosure is rated IP67 against dust and water exposure.

These rugged qualities and functional flexibility of AX020420 opens the possibility of using it in a variety of applications like:

- High vibration and harsh environments of mobile equipment
- Off-highway and agricultural equipment
- Driving proportional poppet, spool, or On/Off hydraulic valves

For more details, please visit:

AX020420: <https://products.axiomatic.com/item/valve-controls/12-inputs-12-outputs-valve-controllers/ax020420>

AX020421: <https://products.axiomatic.com/item/valve-controls/12-inputs-12-outputs-valve-controllers/ax020421>

The AX020420 and AX020421 are the newest additions with multiple I/O in Axiomatic's wide range of versatile valve controllers, some of which can operate in high temperatures up to 125°C (257°F). A few of these valve controllers are listed below.

- AX023300, 2 Universal Inputs, Dual Universal Valve Controller, SAE J1939
- AX020530, 7 Inputs, 5 Outputs Valve Controller, +5V, SAE J1939
- AX021910, 8 Inputs, 5 Outputs, Valve Controller, SAE J1939
- AX023240, Quadrature Encoder Input, Dual Valve Controller, SAE J1939
- AX022310, Dual Valve Controller, Plug-In, SAE J1939
- AX020600, 4 Outputs Valve Controller, CAN (SAE J1939)

We also offer the same products with CANopen®.

Efficient valve drivers are responsible for the regulation of solenoids and hydraulic valves, including proportional valves. These drivers are operated via joysticks, switches, or sensors and are run with battery power. Our valve drivers can connect using protocols such as CANopen®, SAE J1939, and RS-232, among others. We offer a range of electronic controllers for mobile equipment with electro-hydraulics that feature both single and multiple inputs and outputs, designed to withstand demanding conditions.

You can browse through our complete catalog of valve controllers at:

<https://products.axiomatic.com/category/valve-controls>

Axiomatic specializes in the design, development, and production of control solutions tailored for diverse applications where performance and reliability are of utmost importance. Our team of design engineers creates products and components in both Canada and Finland, while our manufacturing operations are located in Canada.

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