

UNDERSTAND. INNOVATE. SOLVE.

POWER & CONTROL

2





MISSION

Axiomatic provides electronic machine controls, components, and systems to the off-highway, military, power generation, material handling, industrial and alternate energy OEM markets.

We provide efficient, innovative solutions that focus on adding value for our customers. An emphasis on service and partnership with our customers, suppliers, and employees builds long term relationships and mutual trust.

POWERFUL CONTROLS

Rugged performance and reliable operation in harsh environments is the signature of Axiomatic's efficient and accurate controls. Flexible user configuration offers multiple functionality for diverse applications while using the same cost-effective hardware platforms.

Axiomatic offers a broad range of standard control products for rugged applications. Our standard products can be optimized for customer applications. Axiomatic also designs competitive OEM controls.

- Amplifiers
- Angle Sensors, Tilt Sensors
- Battery Chargers
- BLDC Motor Controllers
- CAN Controls (SAE J1939, CANopen)
- Current, Voltage, PWM Converters
- Custom Control Components and Systems
- DC/DC Converters
- DC Motor Controllers/Drives
- Displays
- Distributed I/O
- Engine Management Controls
- Inclinometers
- LVDT Simulators
- Machine Controls
- PID Controls
- Resolver Controls
- Signal Converters
- Surge Suppressors
- Valve Drivers

Application engineering services support customers' technical inquiries and the Axiomatic after sales team provides timely customer service.

VALUE FOR OUR CUSTOMERS

Axiomatic is proud to be a qualified supplier to a number of major equipment manufacturers worldwide.

Our customers are demanding more innovation, faster time to market, compliance to industry or government standards and more global partners and suppliers. Axiomatic focuses on its core competencies in controls engineering to reduce design costs, improve schedules, and develop an innovative product line.

Rapid feedback on new proposals and early prototyping brings our customers closer to a production-ready product.

Our ISO 9001:2000 modern manufacturing facility continuously reviews processes for efficiency, integration and to lower costs. Compliance to meet customer and industry requirements is built into the design life cycle. Supply partners and customers throughout the world result in Axiomatic proactively managing global requirements.

QUALITY DESIGN AND MANUFACTURING

OEM DESIGN SERVICES



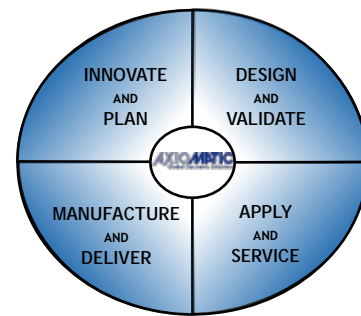
For OEM equipment manufacturers, Axiomatic engineers can provide **complete systems, individual components, or software** to interface with machine control functions.

Customer feedback is vital to the ongoing success of the product development.

Axiomatic design and application engineers support the customer at every stage of development. From detailed technical specifications, project plans, evaluation/test approach selection, product FMEA processes, ongoing optimization, troubleshooting, prototype installations to production-ready products, our OEM product development process is a true partnership.

MANAGING THE PRODUCT LIFE CYCLE

Axiomatic standard products follow a rigorous product development process from concept to field commissioning and service.



MANUFACTURING OVERVIEW

Axiomatic Technologies Corporation operates an ISO 9001:2000 registered manufacturing facility in Mississauga, Ontario, Canada. This modern operation is qualified and recognized by our many OEM clients as a volume producing and cost effective operation. Axiomatic products ship just in time and worldwide from the Toronto International Airport located nearby.

All electronic controls manufactured in Canada have been lead-free since August 2007.

Our Finnish subsidiary, Axiomatic Technologies Oy, operates in Tampere and specializes in complex assemblies of rugged components and systems.

SMT Line: Automated Screener, SMT Pick & Place Machines, Reflow Oven



Automated Optical Inspection



Hand Solder Line



Mechanical Assembly Line



Automated Test Regimes

Axiomatic has the experience, expertise and resources to produce cost effective control products in high volumes.

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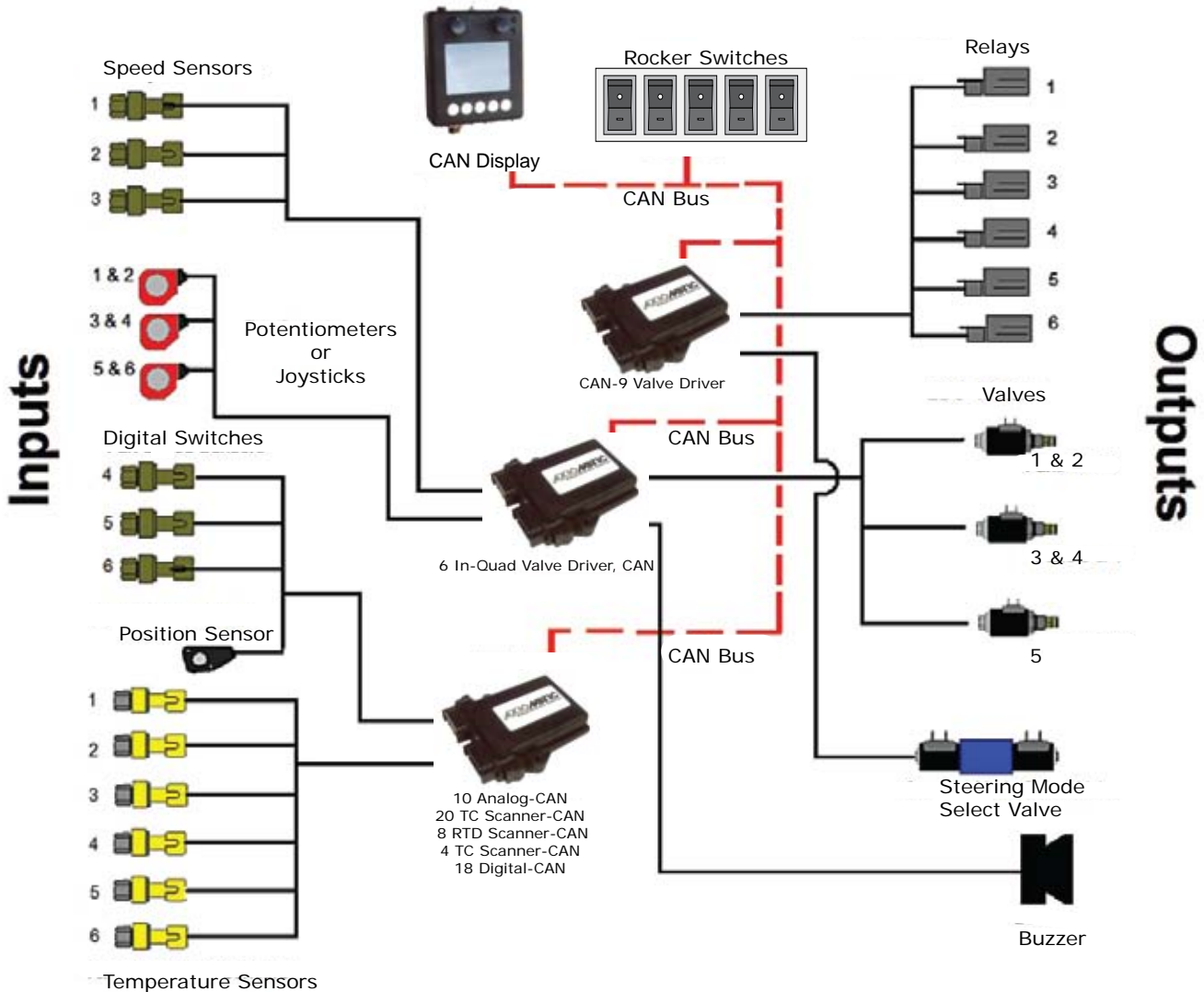
- Machine Controls and Displays
- Sensor Modules
- Service Tools
 - Electronic Assistant®
- Smart Valve Controllers
- Analog Valve Controllers
- Distributed Controls
- Motor Drives
- Battery Chargers
- DC/DC Converters
- Signal Conditioners
- Surge Protectors
- LVDT/RVDT Simulator



EFFICIENT CONTROLS



MACHINE CONTROLS



CAN Display Application Platform:

Human Machine Interface (HMI) Display for reliable data collection and remote monitoring with fast response time

- Total machine or vehicle control (master CAN module)
- Integral I/O for connection to joystick, switches, etc. extends the capability of the machine control application (24 PNP + 16 NPN digital inputs, 8 analog inputs, encoder input, 16 digital + 4 signal outputs)
- Flexible communications (3 RS-232 ports, 2 CANopen ports, Ethernet, 2 USB)
- Flexible PCB for custom-applications or ruggedly packaged for mobile, military and mining applications
- Easy to use selectable screen displays, a mode selector knob, function buttons and variable adjustment knob
- Electroluminescent display, VGA/XGA compatible, 320x240 or 160x120 pixel resolution, 4-bit digital
- -40...+85°C (-40...+185°F), RAM mount, 200 x 160 x 35 mm or 7.87 x 6.30 x 0.14 inches (excluding connectors), 9...35VDC Voltage Range



SENSOR MODULES

Inclinometers

AX06000X



Rugged and reliable position control
Precise angle, slope or tilt measurement
Single Axis, 180° or 360° or Dual Axes, 180°
1 or 2 CANopen or J1939 ports

Application:
Boom, bucket, blade or
attachment positioning control
for construction equipment

Tilt Sensor

AX060100



Out of level indicator
Drives 2-2A solenoids, relays, lamps or annunciators
Rugged, IP65 performance for harsh environments
1 CANopen port for networking

Application:
Safety interlock or warning
systems on lift equipment or
platforms

Resolver Sensor Modules

Robust alternative to a signal encoder
360 degree resolver with integrated control electronics
1 CANopen port for networking

AXRES-CO-1X-SL



Application:
Boom end positioning in
cranes or drilling machines

AXRES-CO-V2



Specifications subject to change without notice.

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SERVICE TOOLS (Configuration, Monitoring, Diagnostics)

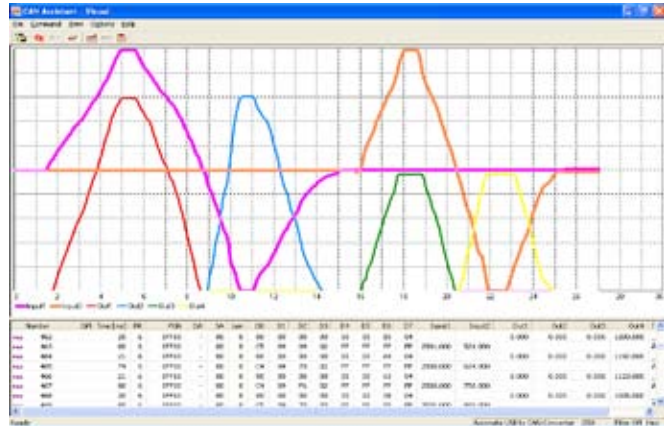
Electronic Assistant®

Flexible Device Configuration with Electronic Assistant® :

- Recognize all networked SAE J1939-based devices
- Edit and view individual parameters or setpoints for Axiomatic devices
- Configure existing control logic to suit application

Monitor CAN data with the EA Scope:

- Display and transmit all messages on the bus, or filter for specific messages
- Suitable for higher CAN protocols (CANopen)
- Receive time-stamped CAN messages

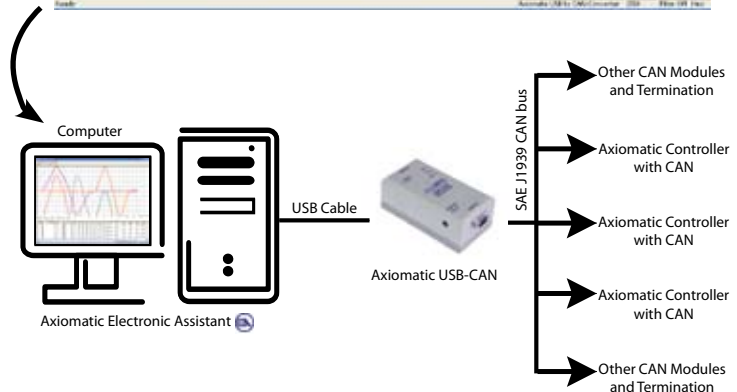


Diagnose with EA Visual:

- Real-time monitoring
- Convert raw J1939 data into real units (i.e. temperature in °C)
- Performance graphs

USB - CAN Converter:

- Connect a PC running EA software with a CAN 2.0B network
- The Software Development Kit (SDK) allows system integrators to use the Axiomatic USB-CAN converter in their own applications.



Configuration KIT includes the following:

- USB-CAN Converter
- 1 ft. (0.3 m) USB Cable
- 12 in. (30 cm) CAN Cable with female DB-9
- CD, includes:

- Electronic Assistant® software;
- EA & USB-CAN User Manual UMAX07050X;
- USB-CAN drivers & documentation;
- CAN Assistant (Scope and Visual) software & documentation;
- and the Software Development Kit (SDK).

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RUGGED PERFORMANCE



Genie GS-2668 RT

4WD

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SMART VALVE CONTROLLERS

- Expanded, accurate and smooth electronic control for hydraulic valves
- Flexible configuration to suit the application
- Manifold or remote mountable
- CAN system integration
- Rugged IP67 performance



| MODEL NO. | AX020500 | AX02050X | AX02120X | AX021300 |
|------------------------|--|--|--|------------------------------------|
| CAN/RS-232 | 1 RS-232 | 1 SAE J1939 (AX020503) 1 CANopen (AX020502) | 1 SAE J1939 (AX021200) 1 CANopen (AX021201) 1 RS-232 | 1 SAE J1939 1 RS-232 |
| POWER INPUT | 8...36VDC | 8...36VDC | 8...80VDC | 9...36VDC |
| INPUTS | | | | |
| 0-5V | 4 | 4 | | 2 |
| 0-10V | Selectable: 4 | Selectable: 4 | | |
| 0-20mA | Selectable: 4 | Selectable: 4 | | Selectable: 2 |
| 4-20mA | Selectable: 4 | Selectable: 4 | | Selectable: 2 |
| Digital | Selectable: 6 | Selectable: 6 | | Selectable: 5 |
| PWM D.C. Signal | 2 | 2 | | 3 |
| Frequency/RPM | Selectable: 2 | Selectable: 2 | | Selectable: 3 |
| 16-bit Counter | Selectable: 2 | Selectable: 2 | | Selectable: 3 |
| +5V Reference | 1 | 2 | | |
| OUTPUTS | | | | |
| Proportional Valve | 4 (2A) | 4 (2A) | 9 (2A) | |
| Digital (On/Off Valve) | 1 (2A) Selectable: 4 (2A) | 1 (2A) Selectable: 4 (2A) | Selectable: 9 (2A) | 6 (5A) |
| PWM D.C. Signal | | | Selectable: 9 (0-100%, 150Hz-5KHz) | Selectable: 6 (0-100%, 1-200Hz) |
| PACKAGING | IP67 Remote mount plastic enclosure 24-pin Deutsch IPD connector | | | |
| DIMENSIONS | 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating connectors) | | | |
| CONFIGURATION | GUI Serial Tool AX020501 | AX070502 Electronic Assistant® (EA) Kit | | |

Selectable: These are user selectable parameters in the PC-based configuration tool Electronic Assistant® (EA).

Contact Axiomatic with application-specific requirements.

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SMART VALVE CONTROLLERS

continued



Applications:

- Efficient hydraulic control sub-systems or complete vehicle control
- Reduce noise and emissions with optimized fan drive controls for construction equipment

| MODEL NO. | AX020100 | AX02160X | AX021800 | AX021900 | AX022000 |
|------------------------|---|---|---|---|--|
| CAN/RS-232 | 1 RS-232 | 1 SAE J1939 (AX021600) 1 CANopen (AX021602) | 1 SAE J1939 | 1 SAE J1939 | 1 SAE J1939 |
| POWER INPUT | 9...32VDC | 6...60VDC | 8...60VDC | 8...60VDC | 6...60VDC |
| INPUTS | | | | | |
| Universal | | 1 | 4 | 6 | 1 |
| 0-5V | | Selectable: 1 | Selectable: 4 | Selectable: 6 | Selectable: 1 |
| 0-2.5V | | Selectable: 1 | Selectable: 4 | Selectable: 6 | Selectable: 1 |
| 0-10V | | Selectable: 1 | Selectable: 4 | Selectable: 6 | Selectable: 1 |
| 0-20mA | | Selectable: 1 | Selectable: 4 | Selectable: 6 | Selectable: 1 |
| 4-20mA | | Selectable: 1 | Selectable: 4 | Selectable: 6 | Selectable: 1 |
| Resistive | | Selectable: 1 | Selectable: 4 | Selectable: 6 | Selectable: 1 |
| Digital | | Selectable: 1 | Selectable: 4 | 1 Enable Selectable: 6 | Selectable: 1 |
| PWM D.C. Signal | 1 | Selectable: 1 | Selectable: 2 | Selectable: 6 | Selectable: 1 |
| Frequency/RPM | | Selectable: 1 | Selectable: 2 | 1 Magnetic Pick Up Sensor Selectable: 6 | Selectable: 1 |
| +5V Reference | 1 | | 4 (100mA ea) | | 1 |
| OUTPUTS | | | | | |
| Proportional Valve | 1 (1.1A) | 1 (2A) | 2 (3A) | 4 (2.5A) | 2 (3A) |
| Digital (On/Off Valve) | | Selectable: 1 (2A) | Selectable: 2 (3A) | 1 (2.5) Selectable: 4 | Selectable: 2 (3A) |
| PWM D.C. Signal | | Selectable: 1 (0-100%, High Frequency) | Selectable: 2 (0-100%, High Frequency) | Selectable: 4 (0-100%, 150Hz - 5KHz) | Selectable: 2 (0-100%, High Frequency) |
| Voltage | | Selectable: 1 | Selectable: 2 | | Selectable: 2 |
| PACKAGING | IP67 Remote mount plastic enclosure 12-pin Deutsch IPD connector | AX021600: IP50 PCB conformal coated and housed in heat shrink wrap 1 2-pin, 1 3-pin, 1 4-pin Deutsch IPD connectors AX021601: IP67 Aluminum enclosure 8-pin Deutsch IPD connector | IP67 Remote mount plastic enclosure 24-pin Deutsch IPD connector | | IP67 Remote mount stainless steel enclosure 12-pin Deutsch IPD connector |
| DIMENSIONS | 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating connector) | AX021600: 1.52 x 17.76 x 0.66 inches 38.6 x 451.1 x 16.7 mm (W x L x H excluding mating connectors) AX021601: Contact Axiomatic. | 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating connector) | | Contact Axiomatic. |
| CONFIGURATION | Tera Term | AX070502 Electronic Assistant® (EA) Kit | | | |

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ANALOG VALVE CONTROLLERS

Accurate electronic control for solenoid valves
 Diverse product line to suit various applications
 Rugged performance



| MODEL NO. | POWER | INPUT | OUTPUT | CONNECTION | CABLE LENGTH | PACKAGING | DIMENSIONS | |
|--------------------------------|--------|---|---------------------------|--|--------------|--|---|--|
| CONNECTOR AMPLIFIERS | | | | | | | | |
| CAPV-H-5V-X-6C-2M | 9...32 | 0-5V, 0-20mA, 2.5K Pot | X= 1.2A, 2A, 800mA, 600mA | Unterminated cable | 2 meters | IP65 (IP67 option available) DIN Coil 43650 | 1.34 x 3.36 x 1.49 inches 34 x 85.35 x 38 mm (W x L x H excluding cable) | |
| CAPV-H-10V-X-6C-2M | 9...32 | 0-10V, 0-20mA | | Unterminated cable | 2 meters | | | |
| CAPV-H-4-20-X-4C-2M | 9...32 | 4-20mA | | 4 conductor unterminated cable | 2 meters | | | |
| ECONOMY VERSION | | | | | | | | |
| CAPVE-H-5V-xA-5C-2M | 9...32 | 0-5V, 10K Pot | X= 1A, 2A | 5 conductor unterminated cable | 2 meters | IP65 | | |
| CAPVE-H-4-20MA-2A-4C-2M | 9...32 | 4-20mA | 2A | 4 conductor unterminated cable | 2 meters | DIN Coil 43650 | | |
| DIGITAL VERSION | | | | | | | | |
| DCAPV-H-1-2A with Programmer | 9...32 | 0-5 V, 0-10 V, +/- 10V, 10K Pot, 4-20mA | 2A | 7 conductor unterminated, shielded cable | 2 meters | IP65 DIN Coil 43650 | | |
| DCAPV-H-2-2A-2 with Programmer | 9...32 | 0.5-4.5V, 0-10 V, +/- 10V, 10K Pot, 4-20 mA | 2A | 7 conductor unterminated, shielded cable | 2 meters | | | |
| SOFT SHIFT | | | | | | | | |
| SSD-H-1-02-X-2M | 9...32 | None | X= 2A, 650mA | 2 conductor unterminated cable | 2 meters | IP65 | | |
| SSD-H-2-02-X-2M | 9...32 | None | | | 2 meters | DIN Coil 43650 | | |

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ANALOG VALVE CONTROLLERS

continued



| MODEL NO. | POWER | INPUT | OUTPUT | CONNECTION | CABLE LENGTH | PACKAGING | DIMENSIONS | |
|--------------------------------|--------|---|----------------------------------|----------------------------------|--|--|---|---|
| SINGLE SOLENOID DRIVERS | | | | | | | | |
| RSD-PCB-5V-X | 9...28 | 0-5V, 0-20mA, 10K Pot | X= 1,2A, 2A, 800mA, 600mA, 400mA | 10 screw terminals | N/A | IP00 PCB Board | 2.50 x 0.80 x 2.50 inches 63.50 x 20.30 x 63.50 mm (W x D x H) | |
| RSD-PCB-10V-X | 9...28 | 0-10V, 0-20mA, 10K Pot | | | | | | |
| RSD-PCB-4-20mA-X | 9...28 | 4-20mA | | | | | | |
| RSD-SMB-5V-X-00 | 9...28 | 0-5V, 0-20mA, 10K Pot | | X= 1,2A, 2A, 800mA, 600mA, 400mA | Strain relief, 10 screw terminals | N/A | IP67 Metal Box | 4.50 x 1.01 x 3.13 inches 114.3 x 27.9 x 79.3 mm (W x D x H) |
| RSD-SMB-10V-X-00 | 9...28 | 0-10V, 0-20mA, 10K Pot | | | | | | |
| RSD-SMB-4-20MA-X-00 | 9...28 | 4-20mA | | | | | | |
| RSD-SMB-5V-X-01 | 9...28 | 0-5V, 0-20mA, 10K Pot | | | | | | |
| RSD-SMB-10V-X-01 | 9...28 | 0-10V, 0-20mA, 10K Pot | | | | | | |
| RSD-SMB-4-20MA-X-01 | 9...28 | 4-20mA | | | | | | |
| RSD-SMB-5V-X-IP7-YM | 9...28 | 0-5V, 0-20mA, 10K Pot | | | | | | |
| RSD-SMB-10V-X-IP7-YM | 9...28 | 0-10V, 0-20mA, 10K Pot | | Y= 1.5m, 3m or custom lengths | Unterminated cable - 1.5m or 3m | N/A | 4.50 x 1.01 x 3.13 inches 114.3 x 27.9 x 79.4 mm (W x D x H excluding cable) | |
| RSD-SMB-4-20MA-X-IP7-YM | 9...28 | 4-20mA | | | | | | |
| RSD-DR-5V-X | 9...28 | 0-5V, 0-20mA, 10K Pot | | X= 1,2A, 2A, 800mA, 600mA, 400mA | 10 screw terminals | N/A | IP00 DIN rail (35mm) | 3.54 x 2.67 x 2.75 inches 90.00 x 68.00 x 70.00 mm (W x L x H excluding DIN rail) |
| RSD-DR-10V-X | 9...28 | 0-10V, 0-20mA, 10K Pot | | | | | | |
| RSD-DR-4-20mA-X | 9...28 | 4-20mA | | | | | | |
| 3A SOLENOID DRIVERS | | | | | | | | |
| RSD-PCB-3A | 8...28 | 0-2.5VDC, 0 to +/-2.5VDC, 0-5VDC, 0 to +/-5VDC, 0-10 VDC, 0 to +/-10VDC, 4-20 mA, 0-20 mA | 0-3A, 0 to +/-3A | 8 screw terminals | N/A | IP00 PCB Board | 2.50 x 0.80 x 2.50 inches 63.50 x 20.30 x 63.50 mm (W x D x H) | |
| RSD-SMB-3A | 8...28 | | | Unterminated shielded cable | 1.5M | IP67 Metal Box | 4.50 x 1.01 x 3.13 inches 114.3 x 27.9 x 79.3 mm (W x D x H excluding grommet and cable) | |
| RSD-SMB-3A-00 | 8...28 | | | Strain relief, 8 screw terminals | N/A | | | |
| RSD-SMB-3A-01 | 8...28 | | | 3 connectors | N/A | 4.50 x 1.53 x 4.35 inches 114.3 x 39.0 x 110.64 mm (W x D x H including mounting plate and connectors) | | |
| DUAL SOLENOID DRIVERS | | | | | | | | |
| DSDA-SMB-TB-01 | 9...32 | 0-5V, 0-10V, +/-5V, +/-10V, 0-20mA, +/-20mA, Joystick Pot, Potentiometer | 2 (2A) | 22 flat tabs | N/A | IP65 | 3.87 x 5.37 x 1.17 inches 98.4 x 136.5 x 29.74 mm (W x L x H excluding mating connectors) | |
| DSDA-SMB-1K-TB | 9...32 | | | | | | | 2 (2A) |
| DSDA-SMB-TB-01-300MA | 9...32 | | | | | | | 2 (300 mA) |
| DSDA-SMB-TB-01-100MA | 9...32 | | | 2 (100 mA) | 22 pluggable polyamide screw terminals | | | |
| DSDA-SMB-SC-01 | 9...32 | | | 2 (2A) | | | | |
| DSDA-SMB-1K-SC | 9...32 | | | 2 (2A) | | | | |
| DSDA-SMB-SC-MT-1A | 9...32 | | | 2 (1A) | | | | |

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DISTRIBUTED CONTROLS

Control Components: Stand alone or CAN networked I/O

- Accurate control
- Expand machine control inputs and outputs
- Reliable engine temperature monitoring over CAN
- Flexible configuration and functionality
- Mounts on engine, in control cabinet or remotely
- Rugged IP65 or IP67 performance



| MODEL NO. | AX03010X | AX030200 | AX03030X | AX03050X | AXTC4 | AXTC20 | AXRTD8 | DIO128 |
|----------------------|---|---|---|--|--|---|--------------------------------|-------------------------|
| CAN/RS-232 | 1 SAE J1939 (AX030100) 1 CANopen (AX030101) | 1 SAE J1939 1 RS-232 | 1 SAE J1939 (AX030300) 1 CANopen (AX030301) | 1 SAE J1939 (AX030500) 1 CANopen (AX030501) | 1 SAE J1939 1 RS-232 | 1 SAE J1939 1 RS-232 | 1 SAE J1939 1 RS-232 | 1 SAE J1939 1 RS-232 |
| POWER INPUT | 8...96VDC | 9...32VDC | 8...32 VDC | 9...32VDC | 8...80VDC | 8...60VDC | 8...60VDC | 5...32VDC |
| INPUTS | | | | | | | | |
| 0-5V | 10 | 8 | | | | | | |
| 0-10V | | Selectable: 8 | | | | | | |
| 0-20mA | Selectable: 10 | Selectable: 8 | | | | | | |
| 4-20mA | Selectable: 10 | Selectable: 8 | | | | | | |
| Digital | Selectable: 10 | | 18 | | | | | 12 |
| PWM D.C. Signal | Selectable: 10 | Selectable: 8 | Selectable: 8 | | | | | |
| Frequency/RPM | Selectable: 10 | | Selectable: 8 | | | | | |
| 16-bit Counter | Selectable: 10 | | Selectable: 8 | | | | | |
| Thermocouples | | | | | 4 Type J, K or T | 20 Type J, K, B, E, N, R, S or T | | |
| RTDs | | | | | | | 8 RTD (2-wire, 3-wire, 4-wire) | |
| +5V Reference | | 8 +5V or +20V (20mA ea) | | | | | | |
| OUTPUTS | | | | | | | | |
| 0-5V | | 8 | | 4 | | | | |
| 0-10V | | Selectable: 8 | | Selectable: 4 | | | | |
| +/-5V | | Selectable: 8 | | Selectable: 4 | | | | |
| +/-10V | | Selectable: 8 | | Selectable: 4 | | | | |
| 0-20mA | | Selectable: 8 | | Selectable: 4 | | | | |
| 4-20mA | | Selectable: 8 | | Selectable: 4 | | | | |
| Relay (NO and NC) | | | | | | | | 8 Form C |
| LED | | | | | | | | Power |
| PACKAGING | IP67 Remote mount plastic enclosure 24-pin Deutsch IPD connector | IP65 Remote mount metal enclosure 1 40-pin, 1 8-pin Deutsch IPD connectors | IP67 Remote mount plastic enclosure 24-pin Deutsch IPD connector | IP67 Remote mount plastic enclosure 12-pin Deutsch IPD connector | IP67 Remote mount plastic enclosure 24-pin Deutsch IPD connector | IP65 Remote mount metal enclosure 1 40-pin, 1 8-pin Deutsch IPD connectors | | |
| DIMENSIONS | 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating connectors) | 5.86 x 5.60 x 2.87 inches 149.00 x 142.24 x 73.00 mm (W x L x H excluding mating connectors) | 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating connectors) | | | 5.86 x 5.60 x 2.87 inches 149.00 x 142.24 x 73.00 mm (W x L x H excluding mating connectors) | | |
| CONFIGURATION | AX070502 Electronic Assistant® (EA) Kit | | | | | | | |

Selectable: These are user selectable parameters in the PC-based configuration tool Electronic Assistant® (EA).

Contact Axiomatic with application-specific requirements.

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MOTOR DRIVES



Flexible, accurate motor drive
Discrete I/O functionality
CAN system integration
Rugged IP67 performance

| MODEL NO. | AX100000 | AX100050 | AX100100 | AX100200 | AX100300 |
|------------------------|---|--|--|--|--|
| CONTROL MODE | Speed | Speed | Speed | Speed | Speed |
| MOTOR TYPE | DC | DC | DC | BLDC | DC |
| CAN/RS-232 | 1 SAE J1939 1 RS-232 | 1 SAE J1939 1 RS-232 | 1 SAE J1939 1 RS-232 | 1 SAE J1939 1 RS-232 | 1 CAN 2.0b 1 RS-232 |
| POWER INPUT | 9...36VDC | 9...36VDC | 9...36VDC | 8...60VDC | 9...32VDC |
| INPUTS | | | | | |
| 0-5V | 4 | | 2 | 1 | 1 |
| 0-10V | Selectable: 4 | | Selectable: 2 | Selectable: 1 | Selectable: 1 |
| 0-20mA | Selectable: 4 | | Selectable: 2 | Selectable: 1 | Selectable: 1 |
| 4-20mA | Selectable: 4 | | Selectable: 2 | Selectable: 1 | Selectable: 1 |
| Digital | 2 | 1 Selectable (Enable, Direction, DOUT Control) | Selectable: 2 | Selectable: 1 | Selectable: 1 |
| PWM D.C. Signal | 2 | | Selectable: 2 | | Selectable: 1 |
| Frequency/RPM | Selectable: 2 | | Selectable: 2 | | |
| +5V Reference | 1 | 1 | 1 | 1 | 1 |
| Hall Effect Sensors | | | | A, B, C | |
| OUTPUTS | | | | | |
| Motor Outputs | 12/24VDC 150A | 12/24VDC 150A | 12/24VDC 25A | 12/24VDC 25A | 12/24VDC 12A |
| Direction | Bi-directional | Bi-directional | Bi-directional | Unidirectional or bi-directional | Unidirectional |
| 0-5V | | | 1 | | |
| Digital Signal | 2 (3A) | | | 1 (Battery Voltage Level) | |
| Proportional Valve | 2 (2A) | | 2 (2A) | | |
| Digital (On/Off Valve) | Selectable: 2 (2A) | 1 (2A) | Selectable: 2 (2A) | | |
| Battery Power | 1 | | | | |
| Frequency | 1 | | | | |
| Indicators | Over CAN | | | | LED's |
| PACKAGING | IP65 Encapsulated in an aluminum extrusion, 1 3-pin, 2 12-pin, 1 8-pin Deutsch IPD, 1 3-pin B.H., 4 copper rods | IP65 Encapsulated in an aluminum extrusion, 12-pin Deutsch IPD connector, 4 copper rods | IP67 Encapsulated in an aluminum extrusion, 12-pin Deutsch IPD connector | IP67 Encapsulated in an aluminum extrusion, 1 2-pin, 1 3-pin, 1 5-pin, 1 13-pin connectors | IP67 Encapsulated in a stainless steel casing with powder coated steel base, 1 6-pin, 2 4-pin, Deutsch IPD connectors |
| DIMENSIONS | Contact Axiomatic. | 7.20 x 11.43 x 3.00 inches 182.9 x 290.3 x 76.2 mm (W x L x H including connectors, excluding mating connectors) | 4.63 x 6.93 x 2.38 inches 117.5 x 176.02 x 60.60 mm (W x L x H excluding mating connectors) | 5.50 x 6.77 x 2.39 inches 139.7 x 172.0 x 60.6 mm (W x L x H excluding connectors) | 3.55 x 5.00 x 1.30 inches 90.2 x 127.0 x 33.0 mm (W x L x H excludes connectors and mating plugs) |
| CONFIGURATION | AX070502 Electronic Assistant® (EA) Kit | | | EA / Tera Term | Tera Term |

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AXIOMATIC
Global Electronic Solutions

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BATTERY CHARGERS

- Multi-stage and efficient charging
- Distributed I/O functionality
- CAN system integration
- Rugged performance
- Inherent power factor correction



| | | | | |
|----------------|--|-------------------------|--|---|
| MODEL NO. | AX090003 | AX090004 | AX090100 | AX090300 |
| FUNCTION | 24V/10A | 12V/10A | 24V/20A | 12V/5A |
| POWER | 95...260VAC 45/65 Hz | 95...260VAC 45/65 Hz | 95...260VAC 45/65 Hz | 4-28VDC |
| CAN/RS-232 | 1 SAE J1939 1 RS-232 | | | |
| OUTPUT | 24VDC | 24VDC | 24VDC | 12VDC |
| OUTPUT CURRENT | 10A | 10A | 20A | 5A |
| I/O | 2 digital inputs/outputs | | 4 SPDT relay outputs 10A@120VAC, 7A@240VAC | 1 15A Digital or Motor Output |
| INDICATORS | Power LED Transmits battery Volts and charge Amps over CAN bus Temperature Sensor Interface | | Multiple LEDs Transmits charge status over CANbus Displays Volts and Amps | LEDs Temperature Sensor Interface |
| PACKAGING | IP67 Aluminum enclosure 3 4-pin, 1 3-pin Deutsch IPD connectors 14-pin M8 Unterminated power cable | | IP67 Aluminum enclosure Unterminated power cable | IP20 Remote Mount, Encapsulated, Screw terminals |
| DIMENSIONS | 7.24 x 12.07 x 3.00 inches 184.0 x 306.5 x 76.2 mm (W x L x H excluding mating connectors) | | Contact Axiomatic. | 3.73 x 5.43 x 1.09 inches 94.7 x 138.0 x 27.6 mm (W x L x H excluding mating connectors) |
| CONFIGURATION | AX070502 Electronic Assistant® (EA) Kit | | | |

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DC/DC CONVERTERS

Power regulation for sensitive electronics
 Isolation when required for critical loads
 Power conditioning of on-site batteries
 IP67 for harsh environments
 No cooling fan required



| FUNCTION | MODEL NO. | ISOLATION | INPUT | OUTPUT | OUTPUT CURRENT | PACKAGING | DIMENSIONS |
|-------------|-------------------------------------|-----------|---------------------|--------|----------------|---|---|
| 24V/24V | AX080200 (AX080200K*) | Y | 24VDC (13-32VDC) | 24VDC | 10A | IP67 Fully sealed, Encapsulated in a remote mount aluminum enclosure 4-pin Deutsch IPD connector | 7.20 x 6.25 x 3.00 inches 182.90 x 158.75 x 76.20 mm (W x L x H excluding mating connector) |
| (12)24V/24V | SMP-BAC-V06-24VDC-01 (PSU1K*) | Y | 24VDC (11-32VDC) | 24VDC | 5.2A | | 5.50 x 7.68 x 2.37 inches 139.7 x 195.0 x 60.3 mm (W x L x H excluding mating connector) |
| 24V/48V | SMP-BAC-24VDC-48VDC (PSU4K*) | Y | 24VDC (16-32VDC) | 48VDC | 3A | | |
| 24V/12V | SMP-BAC-V06-24VDC-12VDC (PSU9K*) | Y | 24VDC (9-30VDC) | 12VDC | 5A | | 7.20 x 5.90 x 3.02 inches 182.88 x 149.86 x 76.84mm (W x L x H excluding mating connector) |
| 24/26V | AX080400 (AX080400K*) | Y | 24VDC (11-32VDC) | 26VDC | 5A | | |
| 48V/24V | AX080000 (AX080000K*) | Y | 48VDC (35-95VDC) | 24VDC | 10A | | 5.50 x 8.14 x 2.37 inches 139.7 x 207.0 x 60.3 mm (W x L x H excluding mating connector) |
| 48V/24V | SMP-BAC-48VD-24VD-01 (PSU5K*) | N | 48DC (35-65VDC) | 24VDC | 13A | | |
| 48V/12V | SMP-BAC-48VD-12VD-01 (PSU2K*) | N | 48VDC (35-65DC) | 12VDC | 15A | | |
| 72V/24V | SMP-BAC-72VD-24VD-01 (PSU17K*) | N | 72VDC (35-90VDC) | 24VDC | 13A | | |
| 72V/12V | SMP-BAC-72VD-12VD-01 (PSU18K*) | N | 72VDC (35-90VDC) | 12VDC | 15A | | |
| 42V/24V | SMP-BAC-42VD-24VD-01 (PSU19K*) | N | 42VDC (35-90VDC) | 24VDC | 13A | | |
| 42V/12V | SMP-BAC-42VD-12VD-01 (PSU20K*) | N | 42VDC (35-90VDC) | 12VDC | 15A | | |
| 24V/120V | AX080100 (AX080100K*) | N | 24VDC (16-32VDC) | 120VDC | 2A | | |

* Includes mating 2M wire harness

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SIGNAL CONDITIONERS

Convert any analog or PWM signal to suit your application

12VDC or 24VDC nominal

Single channel

Fine calibration

DIN rail (35 mm)



Current Converters

| MODEL NO. | POWER | INPUT | OUTPUT | ISOLATION | INDICATORS | PACKAGING | DIMENSIONS |
|-----------|------------|----------------|--|-----------|------------|--|--|
| IC-DR-11 | 9...45VDC | 4-20mA | 0-200mA | N | LED | IP40 Polycarbonate housing DIN rail IP20 screw terminals | 2.95 x 3.87 x 0.88 inches 75 x 98.5 x 22.5 mm (W x H x D) |
| IC-DR-12 | 9...45VDC | 4-20mA | 20-160mA | N | LED | | |
| IC-DR-14 | 9...45VDC | 4-20mA | 0-50mA | N | LED | | |
| IC-DR-20 | 9...45VDC | 4-20mA | 0-100mA | N | LED | | |
| IIC-DR-22 | 9...45VDC | 0-200mA | 4-20mA | Y | LED | | |
| IC-DR-23 | 16...32VDC | 0-10VDC | +/-200mA | N | LED | | |
| IIC-DR-32 | 9...45VDC | +/- 0-200mA | 4-20mA | Y | LED | | |
| IC-DR-13 | 16...32VDC | 4-20mA | +/-10mA to +/-310mA (Selectable in 10 mA steps) | N | LED | | |
| IC-DR-16 | 16...32VDC | -10 to +10 VDC | | N | LED | | |
| IC-DR-19 | 16...32VDC | -5 to +5VDC | | N | LED | | |
| IC-DR-18 | 16...32VDC | 4-20mA | +40mA to 160mA | N | LED | | |

PWM Converters

| MODEL NO. | POWER | INPUT | OUTPUT | ISOLATION | INDICATORS | PACKAGING | DIMENSIONS |
|---|-----------|--|--|-----------|------------|---|--|
| IPWM-DR-200MA | 14-45VDC | 0-200mA | 485 Hz PWM 5-90% D.C. | Y | LED | IP40 Polycarbonate housing DIN rail IP20 screw terminals | 2.95 x 3.87 x 0.88 inches 75 x 98.5 x 22.5 mm (W x H x D) |
| IPWM-DR-4-20MA | 14-45VDC | 4-20mA | 550 Hz PWM 10-90% D.C. | Y | LED | | |
| VPWM-DR-5V | 14-45VDC | 0-5V | 485 Hz PWM 5-90% D.C. | Y | LED | | |
| VPWM-DR-10V | 14-45VDC | 0-10V | 475 Hz PWM 0-100% D.C. | Y | LED | | |
| PWMI-DR-200MA | 14-45VDC | 485 Hz PWM 0-100% D.C. | 0-200mA | Y | LED | | |
| PWMI-DR-20MA | 14-45VDC | 485 Hz PWM 0-100% D.C. | 0-20mA | Y | LED | | |
| PWMI-WG8-XX 3 sec. Response Time | 24VDC | 5-1000 Hz PWM 0-100% D.C. | Model: 01: 0-5VDC Model: 02: 0-10VDC Model: 03: 0-20mA Model: 04: 4-20mA | Y | LED | IP20 Wieland WEG8 Polyamide housing DIN rail #12-22 AWG screw terminals | 2.39 x 3.56 x 1.12 inches 60.6 x 90.5 x 28.5 mm (W x H x D excluding DIN rail) |
| PWMI-WG8-XX 100 mSec. Response Time | 24VDC | 50-5000 Hz PWM 0-100% D.C. | Model: 05: 0-5VDC Model: 06: 0-10VDC Model: 07: 0-20mA Model: 08: 4-20mA Model: 10: 4-20mA | Y | LED | | |
| AX130100 | 8...60VDC | 3 Analog (0-5V) 3 PWM (350- 4000 Hz, 0-100% D.C.) | 3 0-5V | Y | N/A | IP67 Remote mount plastic enclosure 24-pin Deutsch IPD connector | 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating connectors) |

Contact Axiomatic with application-specific requirements.

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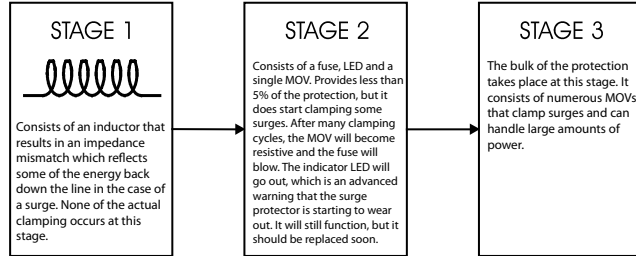
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SURGE PROTECTORS

Handles large current surges and voltage spikes
 Reflection of surge energy as well as MOV suppression
 LED indicator ensures continued protection
 100% redundancy

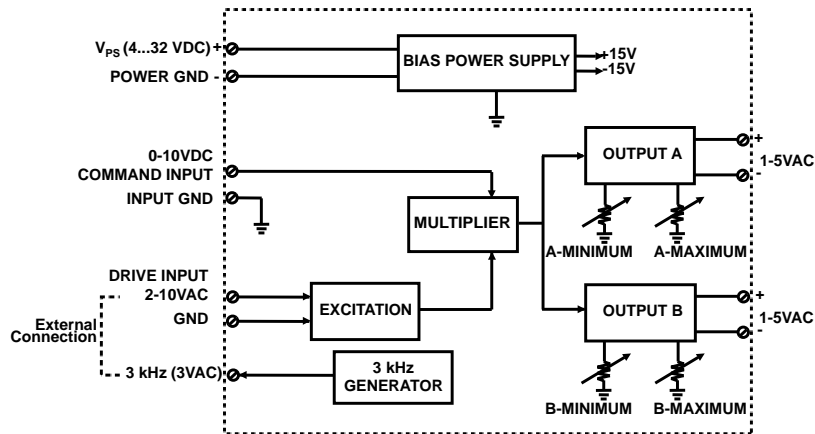


Protect against the effects of electrical disturbances on AC or DC power cabling.

| MODEL NO. | DESCRIPTION | MCOV | MAX SURGE CURRENT | RATING | PACKAGING | DIMENSIONS |
|------------------------|-------------|--------|-------------------|--------------|--|--|
| VAC PROTECTORS | | | | | | |
| TSP-WG6-18VAC-10A-01 | VAC | 77V | 9000A | 20VAC (10A) | Wieland WEG6 Polyamide housing DIN rail (35 mm) #12-22 AWG screw terminals | 2.39 x 3.56 x 0.89 inches 60.6 x 90.5 x 22.5 mm (W x H x D excluding DIN rail) |
| TSP-WG6-24VAC-10A-01 | | 110V | 9000A | 30VAC (10A) | | |
| TSP-WG6-48VAC-10A-01 | | 200V | 30500A | 60VAC (10A) | | |
| TSP-WG6-120VAC-10A-01 | | 360V | 36500A | 130VAC (10A) | | |
| TSP-WG6-240VAC-10A-01 | | 775V | 28500A | 270VAC (10A) | | |
| VDC PROTECTORS | | | | | | |
| TSP-WG6-13.8VDC-10A-01 | VDC | 53V | 9000A | 18VDC (10A) | | |
| TSP-WG6-24VDC-10A-01 | | 77.0V | 9000A | 26VDC (10A) | | |
| TSP-WG6-32VDC-10A-01 | | 110.0V | 9000A | 38VDC (10A) | | |
| TSP-WG6-48VDC-10A-01 | | 135V | 27000A | 56VDC (10A) | | |
| TSP-WG6-110VDC-10A-01 | | 300V | 27000A | 125VDC (10A) | | |
| TSP-WG6-125VDC-10A-01 | | 340V | 36500A | 150VDC (10A) | | |

LVDT SIMULATOR

Test LVDT or RVDT sensors
 DIN rail (35 mm)



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