


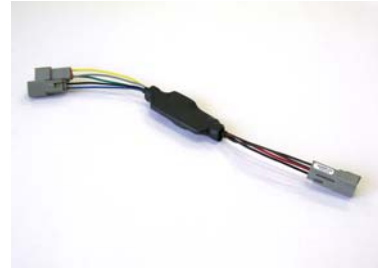
Preliminary
 TECHNICAL DATASHEET #TDAX021600
Single Channel
CAN Controller
 Universal Input, 2A Output
 CAN (SAE J1939)

with Electronic Assistant™ 

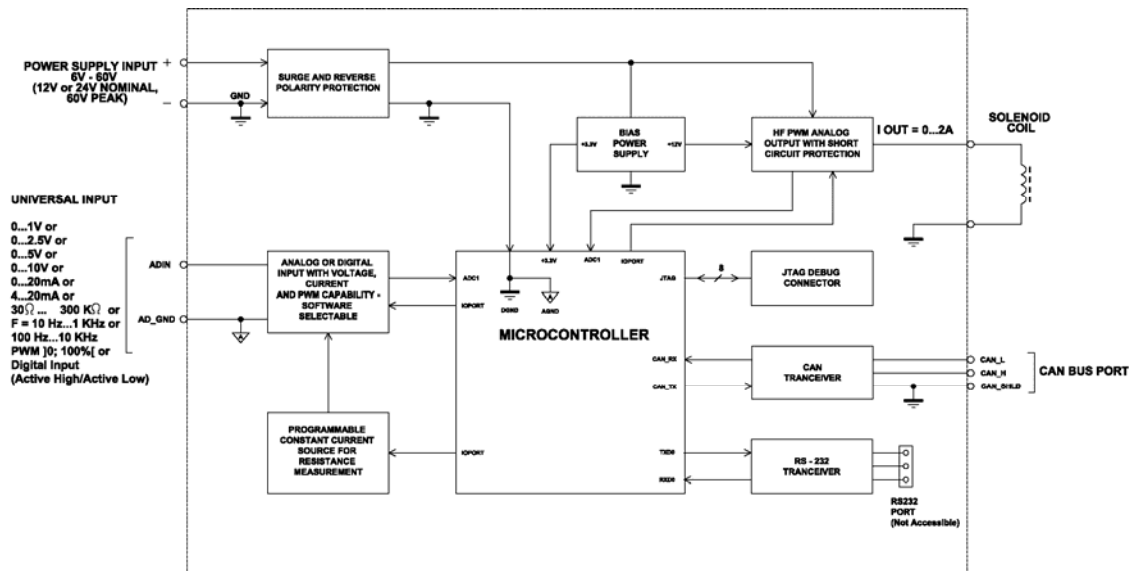
P/N: AX02160X

Features:

- 1 universal signal input
- 1 output up to 2 A
- User programmable functionality
- Wide power supply range (6...60VDC), 12V or 24V nominal
- 1 CAN (SAE J1939) port
- CANopen module available on request
- P/N: AX021600 (shown): PCB is enclosed in heat shrink wrap with 6 inch lead wires terminated in 3 Deutsch IPD DT06 plugs.
- P/N: AX021601: IP67 aluminum packaging with integral Deutsch IPD connector
- **Electronic Assistant™**  together with an Axiomatic USB-CAN converter links the PC to the CAN bus for user configuration.



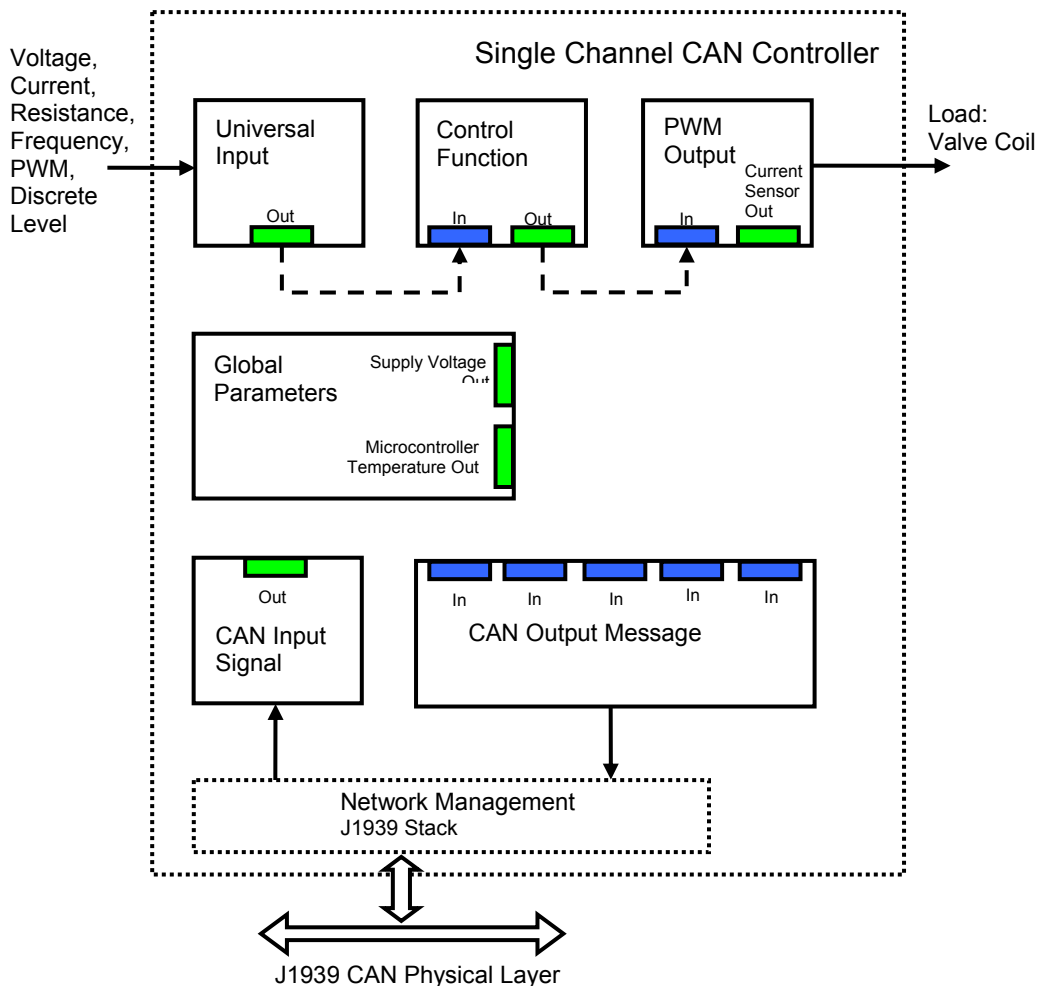
BLOCK DIAGRAM



Ordering Part Numbers:

SAE J1939 version
Controller (Shrink wrapped with lead wires/connectors): AX021600 Accessories: AX070106 4-socket Mating Plug Kit AX070107 2-socket Mating Plug Kit AX070104 3-socket Mating Plug Kit
Controller (Aluminum enclosure with integral connector - IP67): AX021601 Accessories: Contact Axiomatic.
AX070502 Configuration KIT includes the following. USB-CAN Converter P/N: AX070501 1 ft. (0.3 m) USB Cable P/N: CBL-USB-AB-MM-1.5 12 in. (30 cm)CAN Cable with female DB-9 P/N: CAB-AX070501 AX070502IN CD P/N: CD-AX070502, includes: Electronic Assistant™ AX070500 software; EA & USB-CAN User Manual UMAX07050X; USB-CAN drivers & documentation; CAN Assistant (Scope and Visual) software & documentation; and the SDK Software Development Kit. NOTE: To order this kit, you need only to specify P/N: AX070502.

CONTROL ARCHITECTURE



The AX02160X is user programmable for functionality using the Electronic Assistant™ .

Technical Specifications:

Inputs

Power Supply Input - Nominal	12, 24VDC nominal (6...60 VDC power supply range)
Protection	Reverse polarity protection is provided. Overvoltage protection up to 75V is provided. Overvoltage (undervoltage) shutdown of the output load is provided.
CAN	SAE J1939 Commands
Universal Signal Input	Refer to Table 1.0 All inputs are user selectable.

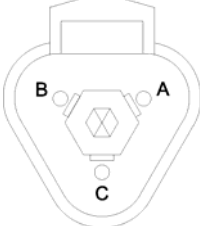
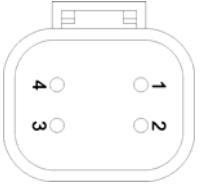

Table 1.0 – Input – User Selectable Options	
Analog Input Functions	Voltage Input, Current Input or Resistive Input
Voltage Input	0-1V (Resistance 1 MOhm) 0-2.5V (Resistance 1 MOhm) 0-5V (Resistance 150 KOhm) 0-10V (Resistance 133 KOhm)
Current Input	0-20 mA (Resistance 124 Ohm) 4-20 mA (Resistance 124 Ohm)
Resistive Input	30Ω to 300 kΩ
Digital Input Functions	Discrete Input, PWM Input, Frequency Input
Digital Input Level	5V CMOS
PWM Input]0; 100%[(Both ends of the range, 0 and 100% are excluded.) 10 Hz to 1kHz 100 Hz to 10 kHz
Frequency Input	10 Hz to 1kHz 100 Hz to 10 kHz
Digital Input	Active High, Active Low
Input Impedance	High impedance, 10KOhm pull down, 10KOhm pull up to +5V
Input Accuracy	≤ 1%
Input Resolution	12-bit

Outputs

CAN	SAE J1939 Messages
Output	Up to 2A High Side Switch, Current Sensing, Grounded Load The user can select the following options for output using the EA. <ul style="list-style-type: none"> • Output Disable • Discrete Output • Output Current (PID loop*, with current sensing) • Output Voltage • Output PWM Duty Cycle *Parameters are password protected. Refer to the user manual for details.
Output Accuracy	≤ 3%

General Specifications

Microprocessor	32-bit, 65KByte or 128 KByte program memory Contact Axiomatic for details.
Control Logic	User programmable functionality using Electronic Assistant™ Refer to the user manual for details.
Communications	1 CAN port (SAE J1939) CANopen is available on request.
User Interface	Electronic Assistant (P/N: AX070500) for <i>Windows</i> operating systems It comes with a royalty-free license for use. The Electronic Assistant AX070500 requires an USB-CAN converter to link the device's CAN port to a <i>Windows</i> -based PC. An Axiomatic USB-CAN Converter AX070501 is available as part of the Axiomatic Configuration KIT. P/N: AX070502 , the Axiomatic Configuration KIT includes the following. USB-CAN Converter P/N: AX070501 1 ft. (0.3 m) USB Cable P/N: CBL-USB-AB-MM-1.5 12 in. (30 cm)CAN Cable with female DB-9 P/N: CAB-AX070501 AX070502IN CD P/N: CD-AX070502, includes: Electronic Assistant™ AX070500 software; EA & USB-CAN User Manual UMAX07050X; USB-CAN drivers & documentation; CAN Assistant (Scope and Visual) software & documentation; and the SDK Software Development Kit.

Operating Conditions	-40 to 85 °C (-40 to 185 °F)
EMC/EMI Compliance	Contact Axiomatic.
Vibration	Contact Axiomatic.
Electrical Connections	<p>P/N: AX021600</p> <p><u>CAN Connector:</u> 3 pin Deutsch IPD P/N: DT04-3P</p>  <p>A: CAN_H (Yellow) B: CAN_L (Green) C: CAN Shield (Grey)</p> <p>Mates with P/N: DT06-3S including W3S wedgelock and sockets. A mating plug kit is available from Axiomatic. Use ordering P/N: AX070104. <i>(The mating plug kit is comprised of Deutsch IPD P/N: DT06-3S, W3S and 3 contact sockets 0462-201-16141.)</i></p> <p><u>Power and Output Connector:</u> 4 pin Deutsch IPD P/N: DT04-4P</p>  <p>1: Power Input (Red) 2: Power GND (Black) 3: Solenoid + (White/Red) 4: Solenoid – (Internally connected to Power GND) (Brown)</p> <p>Mates with P/N: DT06-4S including W4S wedgelock and sockets. A mating plug kit is available from Axiomatic. Use ordering P/N: AX070106. <i>(The mating plug kit is comprised of Deutsch IPD P/N: DT06-4S, W4S and 4 contact sockets 0462-201-16141.)</i></p> <p><u>Signal Input Connector:</u> 2 pin Deutsch IPD P/N: DT04-2P</p>  <p>1: Signal Input (Blue) 2: Signal GND (Black)</p> <p>Mates with P/N: DT06-2S including W2S wedgelock and sockets. A mating plug kit is available from Axiomatic. Use ordering P/N: AX070107. <i>(The mating plug kit is comprised of Deutsch IPD P/N: DT06-2S, W2S and 2 contact sockets 0462-201-16141.)</i></p> <p>P/N: AX021601 Contact Axiomatic for details.</p>

Packaging	<p>P/N: AX021600 PCB assembly (conformal coated PCB in heat shrink wrap) with 6 inch (153 mm) 18 WG lead wires terminated with 3 Deutsch IPD DT06 plugs made of thermoplastic with silicone seals and using #16 sized nickel contacts. PCB dimensions: 2.5 x 1.45 in. or 63.5 x 36.8 mm (excluding heat shrink)</p> <p>P/N: AX021601 Aluminum Enclosure with integral Deutsch IPD connector For application-specific packaging contact Axiomatic.</p>
Protection	<p>P/N : AX021600 IP50 (PCB conformal coated and housed in heat shrink wrap)</p> <p>P/N : AX021601 IP67 rating for the product assembly (Aluminum enclosure with integral connector)</p> <p>NOTE : Deutsch IPD connectors are rated at IP67 for submersion (3 ft., 0.9 m) and IP69K for high pressure, high temperature wash down applications.</p>
Weight	<p>P/N: AX021600 0.20 lbs. (0.09 kg)</p> <p>P/N: AX021601 Contact Axiomatic.</p>

Specifications are subject to update without notice.
Form: TDAX021600-04/10/08