


TECHNICAL DATASHEET #TDAX070502
ELECTRONIC ASSISTANT® CONFIGURATION KIT
 for Axiomatic SAE J1939 Controllers
P/N: AX070502

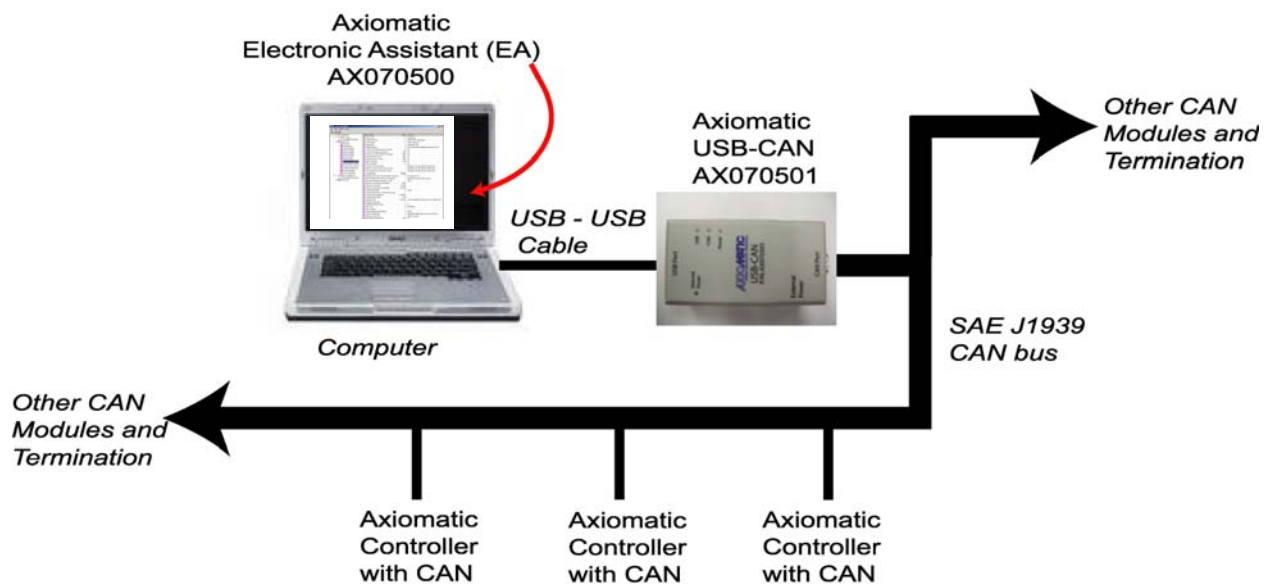
The **Electronic Assistant®**  is a software configuration tool that runs on the *Windows* operating system and is connected to a J1939 bus via an USB to CAN converter, AX070501. Upon being connected to the bus, the EA will find all Electronic Control Units (ECU) on the bus and recognize those manufactured by Axiomatic. Using this tool, a user can quickly configure an Axiomatic ECU for the desired performance over a wide variety of applications.

Axiomatic **CAN Assistant – Scope** software monitors CAN messages in a text format and is able to send single frames to the CAN bus. It is useful for PC-based debugging of J1939, CANopen® or proprietary networked devices.

The **CAN Assistant – Visual** software presents J1939 data in a graphic and user-friendly text format.

The Axiomatic **USB-CAN Converter** includes a Software Development Kit (SDK). The SDK is designed to allow independent software developers and system integrators to use Axiomatic USB-CAN Converter hardware, AX070501, in their own applications.

Set up of an Axiomatic SAE J1939 Controller on a CAN Network:



NOTES:

Network Termination: It is necessary to terminate the network with external termination resistors. The resistors are 120 Ohm, 0.25W minimum, metal film or similar type. They should be placed between CAN_H and CAN_L terminals at both ends of the network.

Ordering Part Number:

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® 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.

In Europe:
 Axiomatic Technologies Oy
 Höytämöntie 6
 33880 LEMPÄÄLÄ - Finland
 Tel. +358 3 3595 600
 Fax. +358 3 3595 660
 www.axiomatic.fi

In North America:
 Axiomatic Technologies Corporation
 5915 Wallace Street
 Mississauga, ON Canada L4Z 1Z8
 Tel. 1 905 602 9270
 Fax. 1 905 602 9279
 www.axiomatic.com

Technical Specifications:



AX070502, Configuration KIT

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

NOTE: To order this kit, you need only to specify P/N: AX070502.

Electronic Assistant®

The Electronic Assistant® (EA) runs on any modern PC with the Microsoft Windows® 2000 operating system or higher. It comes with a royalty-free license for use.

System Requirements:

Operating System: *Windows* 2000 or higher including 64-bit editions

Port: USB 1.1 or 2.0 full speed

Display: VGA (XGA or better with 1024 x 768 recommended)

Setup and Configuration:

Refer to the User Manual UMAX07050X.

To order the EA software at the time of initial purchase, order the KIT AX070502 (see above) which includes the USB-CAN converter. For additional EA and USB-CAN software ONLY CD's, use ordering P/N: CD-AX070502.

Electronic Assistant
ECU Setpoint File
 ECU Name: DIO128, 12 Inputs 8 Outputs #1
 Setpoint File: C:\Documents and Settings\jogush\My Documents\DIO128, 12 Inputs 8 Outputs #1 Setpoints.xml

ECU Identification
 ECU J1939 NAME (PGN 66928): 1498812033207208009 - 64-bit ECU Identifier

Field Name	Value	Description
Arbitrary Address Capable	1	Yes
Industry Group	5	Industrial-Process Control-Stationary (Gen-Sets)
Vehicle System Instance	0	-
Vehicle System	0	Non-specific system
Reserved	0	-
Function	128	Supplemental Engine Control Sensing
Function Instance	1	-
ECU Instance	0	#1 - First Instance
Manufacturer Code	162	Axiomatic Technologies Corp.
Identity Number	366001	ECU Serial Number: 00100001

ECU Address: 235 - Supplemental Sensor Processing Unit #1

Software ID (PGN 65242 -SOFT):

Field Number	Value
1	DIO128

ECU Setpoints

Setpoint Group Name: Controller

Setpoint Name	Setpoint Value	Comment
Base PGN	65440	Input PGN for the first ECU Instance

Setpoint Group Name: Network

Setpoint Name	Setpoint Value	Comment
ECU Instance Number	0	#1 - First Instance
Slow Rate	1	1 - Fast, 0 - Slow
ECU Address	235	Supplemental Sensor Processing Unit #1

Figure 1.0 Setpoint file

Electronic Assistant
 File View Options Help

CAN SP EP

J1939 CAN Network

- ECU AX030100, 10 Analog Input #1
- ECU AX030100, 10 Analog Input #2
- ECU AX030100, 10 Analog Input #3
- ECU AX021200, 9 Proportional Output #2
- ECU AX021200, 9 Proportional Output #3
- ECU AX021300, 6 Digital Output #1
- ECU AX021300, 6 Digital Output #2
- ECU AX021300, 6 Digital Output #3
- ECU AX100000, 200A Motor Controller #1
- ECU AX030200, 16 Analog IO #1
- ECU AX030200, 16 Analog IO #2
- ECU AX030200, 16 Analog IO #3
- ECU AX020503, Quad #1
- ECU AX020503, Quad #2
- ECU AX020503, Quad #3
- ECU DIO128, 12 Inputs 8 Outputs #1

ECU	J1939 Name	Address
ECU AX030100, 10 Analog Input #1	0x8000420814467e23	0x80
ECU AX030100, 10 Analog Input #2	0x8000420914471a6d	0x81
ECU AX030100, 10 Analog Input #3	0x8000420a14471a67	0x82
ECU AX021200, 9 Proportional Output #2	0x800042111447f525	0x83
ECU AX021200, 9 Proportional Output #3	0x800042121447f51e	0x84
ECU AX021300, 6 Digital Output #1	0x800042181446b6c2	0x85
ECU AX021300, 6 Digital Output #2	0x800042191447c65a	0x86
ECU AX021300, 6 Digital Output #3	0x8000421a1447c648	0x87
ECU AX100000, 200A Motor Controller #1	0x8000422814471693	0x88
ECU AX030200, 16 Analog IO #1	0x80004230144781e2	0x89
ECU AX030200, 16 Analog IO #2	0x80004231144781e1	0x8a
ECU AX030200, 16 Analog IO #3	0x800042321447f136	0x8b
ECU AX020503, Quad #1	0x800042381447d3eb	0x8c
ECU AX020503, Quad #2	0x800042391447d4c5	0x8d
ECU AX020503, Quad #3	0x8000423a1447d4c7	0x8e
ECU DIO128, 12 Inputs 8 Outputs #1	0xd0008008144591c9	0xeb

Ready

Figure 2.0 Axiomatic ECU's networked

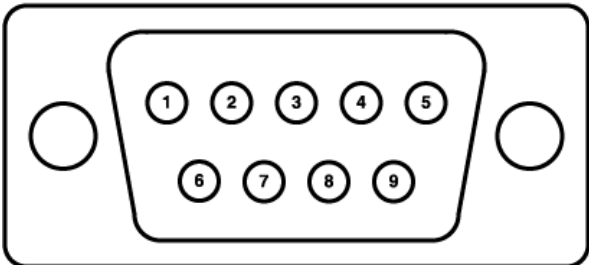
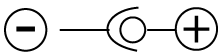
Specifications: AX070501, USB-CAN Converter											
CAN Interface	Differential, Electrically isolated, 1 Mbit/s										
Connections	USB socket: USB 1.1 or 2.0 full speed CAN: 9 pole DSUB male (DB-9)  <table border="1" data-bbox="649 546 1234 682"> <thead> <tr> <th>Pin #</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>CAN_H</td> </tr> <tr> <td>2</td> <td>CAN_L</td> </tr> <tr> <td>3</td> <td>CAN_GND</td> </tr> <tr> <td>5</td> <td>SHIELD</td> </tr> </tbody> </table>	Pin #	Signal	7	CAN_H	2	CAN_L	3	CAN_GND	5	SHIELD
Pin #	Signal										
7	CAN_H										
2	CAN_L										
3	CAN_GND										
5	SHIELD										
Supply Voltage	By default, the unit should be powered directly from the USB port (5V). External power is only needed if the USB hub on the PC side is not able to provide up to 200 mA current to support functionality of the converter OR if the user does NOT want to draw power from the USB port in a battery powered computer configuration (i.e. a laptop). <i>Optional External Power:</i> 12VDC, 200 mA or higher from a standard power plug, 2.5 mm diameter, positive polarity 										
LED Indicators	USB – red/green CAN – red/green Power – red/green External Power – green <i>Refer to User Manual UMAX07050X for details.</i>										
Microcontroller	ST Micro ARM 7 family										
Dimensions	ABS enclosure Rose & Bopla P/N EG1250F 4.92 x 2.64 x 2.01 inches (L x W x H excluding DB-9 connector) 125 x 67 x 51 mm										
Weight	0.4 lbs. (0.18 kg)										
Operating Temperature	-40 to 85 degrees C (-40 to 185 degrees F)										
Rating	IP40										
CAB-AX070501, Cable	Underterminated cable with female DB-9, 12 inches (30 cm) This is a temporary cable for initial configuration and is not suitable for use during machine operation. <i>Pin out:</i> Red: CAN Hi White: CAN Lo Black: CAN GND										
CBL-USB-AB-MM-1.5, Cable	Standard USB Male A to Male B Cable, 1 ft. (0.3m)										
CD-AX070502, Software and Documentation AX070501IN	This CD, CD-AX070502 comes as part of the KIT AX070502. It includes the following software and documentation. It can be ordered separately to obtain new EA software releases. Electronic Assistant® software & documentation (UMAX07050X) USB-CAN drivers & documentation Operating System: <i>Windows 2000, Windows XP, Windows Server 2003, 64-bit Editions of Windows XP and Windows Server 2003.</i> CAN Assistant – Scope software (P/N: AX070501SCO) & documentation (UMAX070501SCO) This software monitors CAN messages in a text format. CAN Assistant – Visual software (P/N: AX070501VIS) & documentation (UMAX070501VIS) This software graphs CAN messages in real time. Software Development Kit (SDK) (P/N: AX070501SDK) & documentation (UMAX070501SDK) Windows operating system starting from <i>Windows 2000</i> and Microsoft Visual C++.NET for s/w development (Contact Axiomatic if you wish to use the converter with other programming languages and software design tools.)										

Figure 3: AX070501 DB-9 Pin out

Note: CANopen® is a registered community trade mark of CAN in Automation e.V.
 Specifications are indicative and subject to change. Actual performance will vary depending on the application and operating conditions. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Approvals/Limitations and Return Materials Process as described on www.axiomatic.com/service.html. Form: TDAX070502-07/20/09