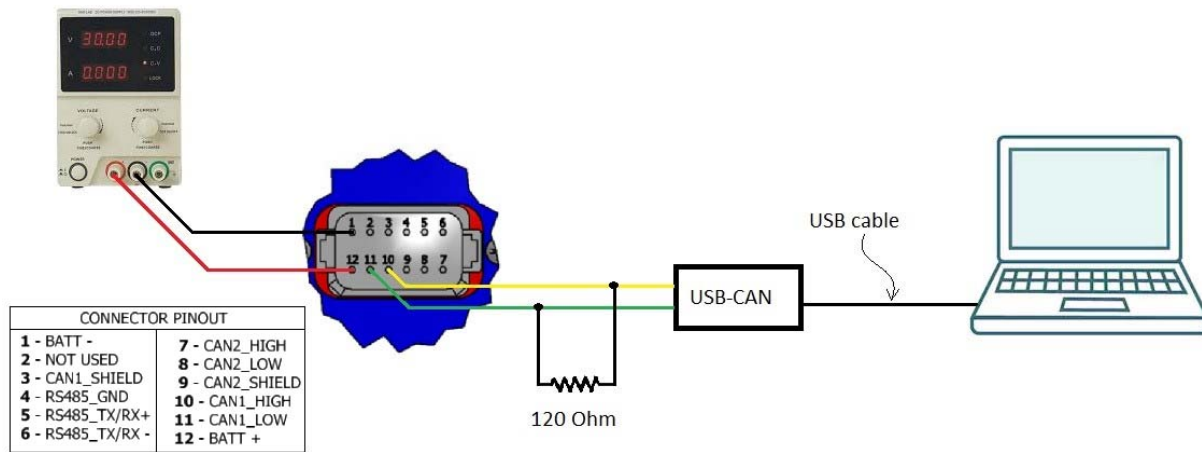


**TECHNICAL DATASHEET #TDAX070502**  
**ELECTRONIC ASSISTANT CONFIGURATION KIT**  
 for Axiomatic SAE J1939 Controllers  
**P/N: AX070502**

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, in their own applications. *The Axiomatic USB-CAN Converter*, is a communication module designed to provide an interface between a PC and a generic CAN bus. The converter is plugged one side to a full-speed USB PC port with a standard USB A to B cable and the other side to a CAN bus through a DB9 CAN connector.



**An EXAMPLE of an installation with the Axiomatic Protocol Converter is shown below.**  
 The Protocol Converter (blue device) is powered during configuration via the Electronic Assistant.  
 The 120 Ohm resistor is installed in the CAN line.  
 The latest EA software was downloaded onto the PC.  
 Any questions, please contact support@axiomatic.com.



**Ordering Part Number: AX070502**

The AX070502 Configuration KIT includes the following.

USB-CAN Converter

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

Installation Instructions to download the 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 from the Axiomatic website ([www.axiomatic.com](http://www.axiomatic.com)).

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 Fax. 1 905 602 9279  
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## Technical Specifications:



**AX070502, Configuration KIT**

**AX070502**, Configuration KIT includes the following.

USB-CAN Converter

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

Installation instructions to download software and user manuals from the Axiomatic website ([www.axiomatic.com](http://www.axiomatic.com)).

### 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 *Windows 64-bit* editions and *Windows 10*

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.

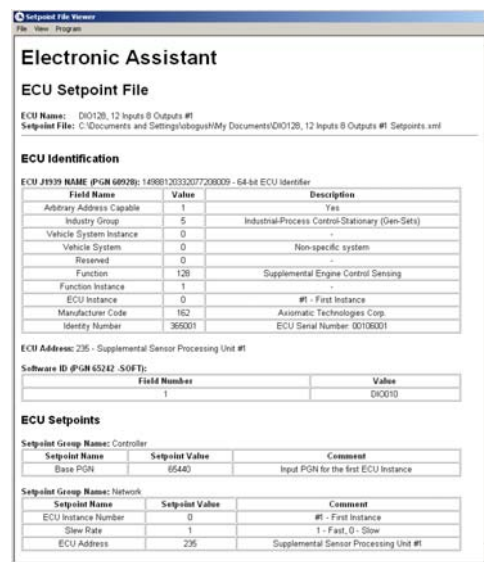


Figure 1.0 Setpoint file

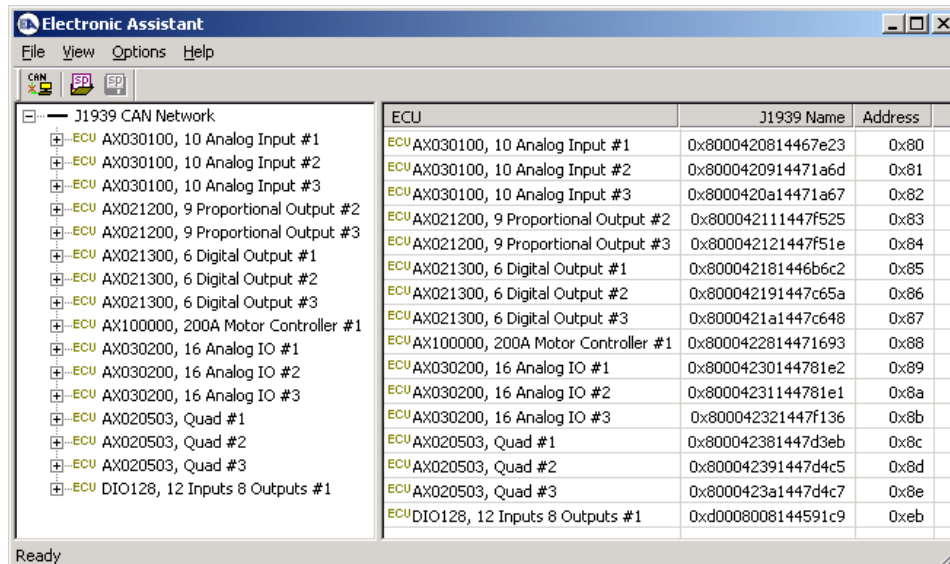
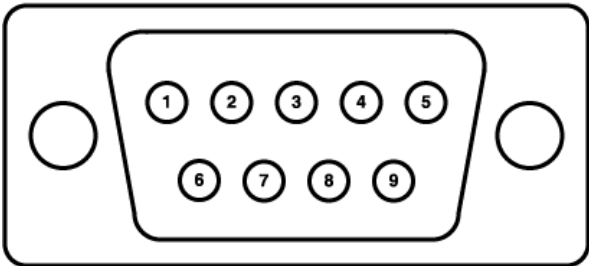
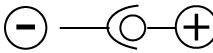


Figure 2.0 Axiomatic ECU's networked

<b>Specifications: USB-CAN Converter</b>											
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) <div style="text-align: center;">  </div> <table border="1" style="margin-left: auto; margin-right: auto;"> <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 <div style="text-align: center;">  </div>										
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 125 x 67 x 51 mm (L x W x H excluding DB-9 connector)										
Weight	0.4 lbs. (0.18 kg)										
Operating Temperature	-40 to 167 degrees C (-40 to 167 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. <u>Pin out:</u> Red (or Green): CAN Lo White (or Yellow): CAN Hi Black: CAN GND										
CBL-USB-AB-MM-1.5, Cable	Standard USB Male A to Male B Cable, 1 ft. (0.3m)										
Software and Documentation AX070501IN	<p><b>The following software and documentation can be downloaded from the Axiomatic website – <a href="http://www.axiomatic.com">www.axiomatic.com</a>. Contact <a href="mailto:sales@axiomatic.com">sales@axiomatic.com</a> for the appropriate password.</b></p> <p><b>Electronic Assistant® software &amp; documentation (UMAX07050X)</b>  <b>USB-CAN drivers &amp; documentation</b>            Operating System: <i>Windows</i> 2000, <i>Windows</i> XP, <i>Windows</i> Server 2003, 64-bit Editions of <i>Windows</i> XP and <i>Windows</i> Server 2003.</p> <p><b>CAN Assistant – Scope software (P/N: AX070501SCO) &amp; documentation (UMAX070501SCO)</b>            This software monitors CAN messages in a text format.</p> <p><b>CAN Assistant – Visual software (P/N: AX070501VIS) &amp; documentation (UMAX070501VIS)</b>            This software graphs CAN messages in real time.</p> <p><b>Software Development Kit (SDK) (P/N: AX070501SDK) &amp; documentation (UMAX070501SDK)</b>  <i>Windows</i> operating system starting from <i>Windows</i> 2000 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.)</p>										

For more details on installation and use, refer to the user manual, UMAX07050X. Figures 2.1 and 2.2. They are shown below for information only. All details are in the user manual.

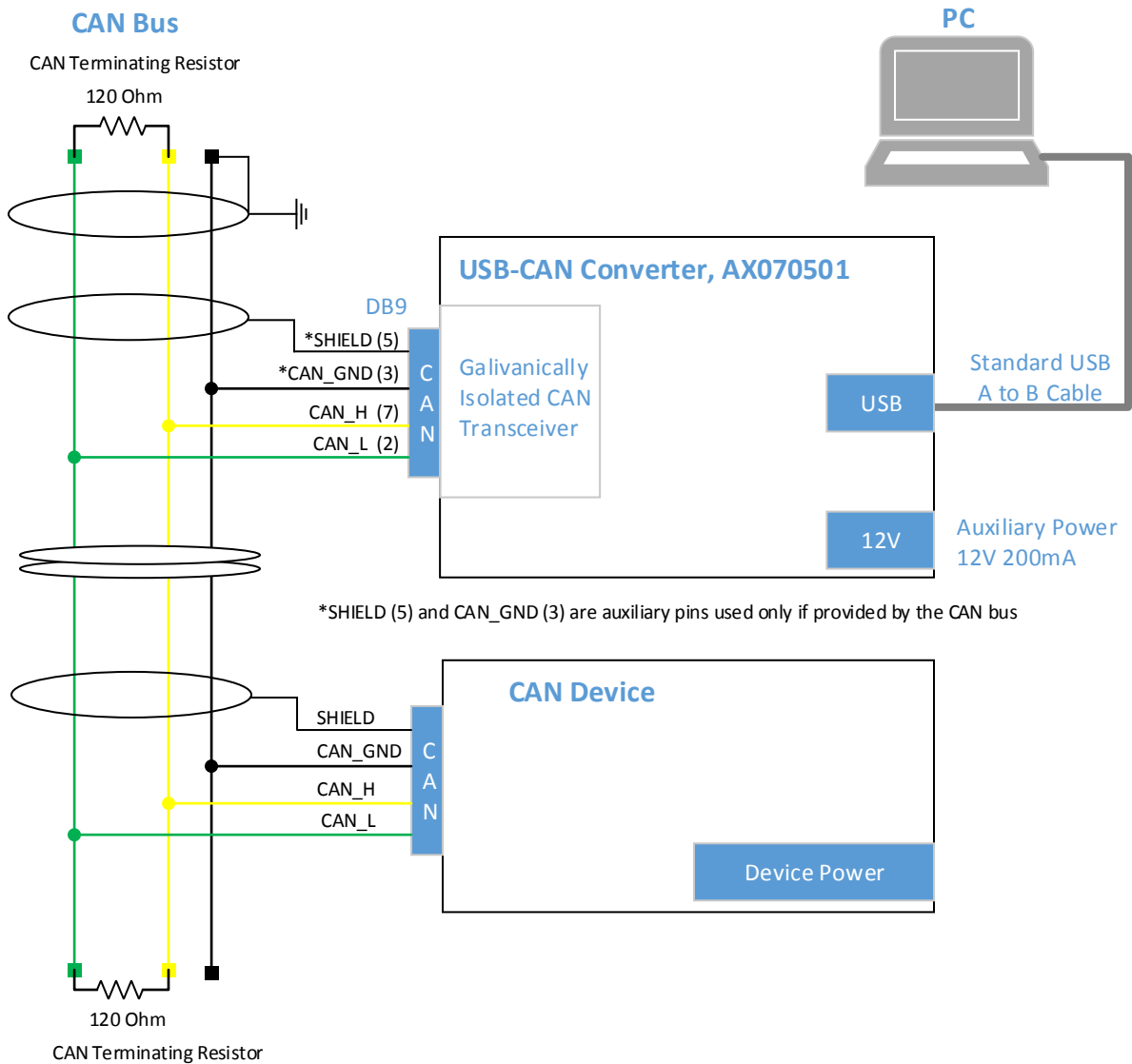
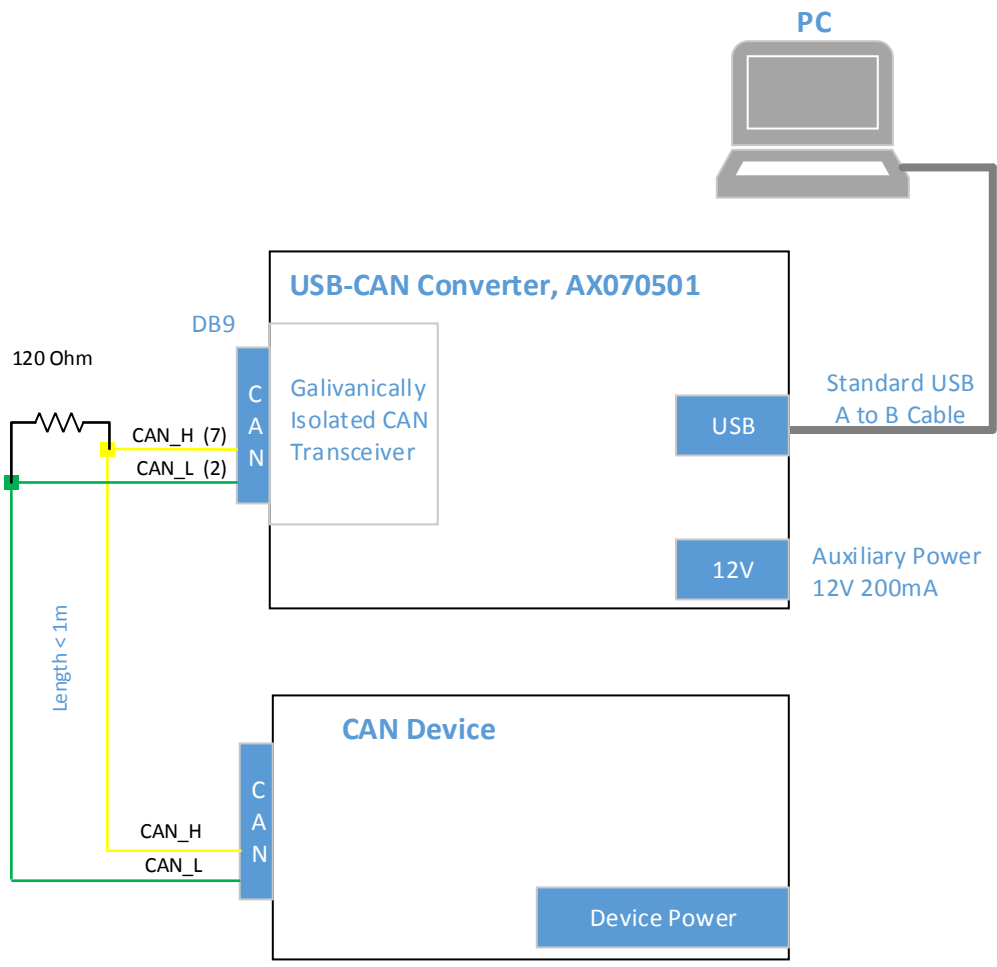


Figure 0-1. Connecting Axiomatic USB-CAN Converter to CAN Bus (from UMAX07050X)



**Figure 0-2. Connecting Axiomatic USB-CAN Converter to CAN Device on the Bench (from UMAX07050X)**

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](http://www.axiomatic.com/service.html). Form: TDAX070502-02/01/19