# AXIOMATIC ELECTRONIC ASSISTANT CONFIGURATION KIT
## for Axiomatic SAE J1939 Controllers
### P/N: AX070502

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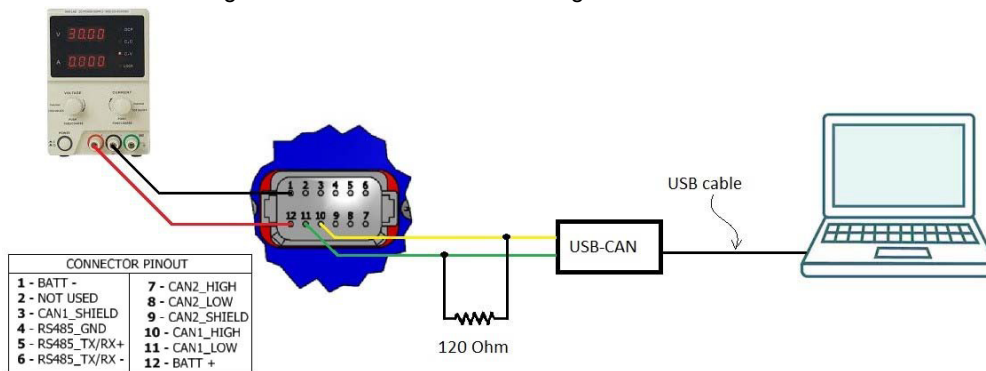
communication module designed to provide an interface between a PC and a generic CAN bus. The converter is plugged one side to a full-speed USB PC port with a standard USB A to B cable and the other side to a CAN bus through a DB9 CAN connector.

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

## Ordering Part Number: AX070502
The AX070502 Configuration KIT includes the following:



| CONNECTOR PINOUT | |
|---|---|
| **1** - BATT - | **7** - CAN2_HIGH |
| **2** - NOT USED | **8** - CAN2_LOW |
| **3** - CAN1_SHIELD | **9** - CAN2_SHIELD |
| **4** - RS485_GND | **10** - CAN1_HIGH |
| **5** - RS485_TX/RX+ | **11** - CAN1_LOW |
| **6** - RS485_TX/RX - | **12** - BATT + |

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 Axiomatic Electronic Assistant software; Axiomatic 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).

# Technical Specifications:

*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 https://www.axiomatic.com/service/.*

| | |
|---|---|
|   **AX070502, Configuration KIT** | **AX070502**, Configuration KIT includes the following.<br><br>USB-CAN Converter<br><br>1 ft. (0.3 m) USB Cable P/N: CBL-USB-AB-MM-1.5<br><br>12 in. (30 cm) CAN Cable with female DB-9 P/N: CAB-AX070501<br><br>Installation instructions to download software and user manuals from the Axiomatic website (www.axiomatic.com). |
| **Software and Documentation AX070501IN** | All software from the Axiomatic Electronic Assistant suite: Axiomatic Electronic Assistant (EA), Axiomatic Electronic Assistant – Scope, and Axiomatic Electronic Assistant – Visual supports this converter. Axiomatic provides the USB to CAN Converter SDK, p/n AX070501SDK, to support third-party software development.<br><br>**The following software and documentation can be downloaded from the Axiomatic website – www.axiomatic.com.  Contact sales@axiomatic.com for the password.**<br><br>**1. The Axiomatic Electronic Assistant (EA)**<br>The Axiomatic Electronic Assistant (EA) runs on any modern PC with the Microsoft Windows® 10 operating systems or higher. It comes with a royalty-free license for use. |

| System Requirement | Windows® XP or higher 32-bit or 64-bit operating system |
|---|---|
| Display | VGA (XGA or better with 1024 x 768 recommended) |
| Setup and Configuration | User Manual **UMAX07050X** |
| Supported Hardware Converters | Axiomatic AX070501 Axiomatic USB-CAN Converter or AX070505 Axiomatic USB-CAN Converter II Axiomatic AX140900 Axiomatic Ethernet-CAN Converter ESD C.2064.02 USB-CAN-Mini |

**2.  Axiomatic EA User Manuals: UMAX07050X**

**3. USB-CAN drivers & documentation UMAX070505**

**4. CAN Assistant – Scope software (P/N: AX070501SCO) & documentation (UMAX070501SCO)**
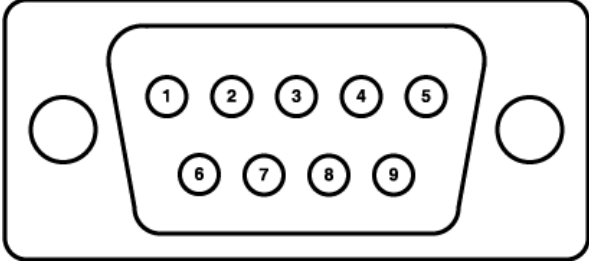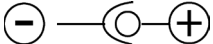This software monitors CAN messages in a text format.

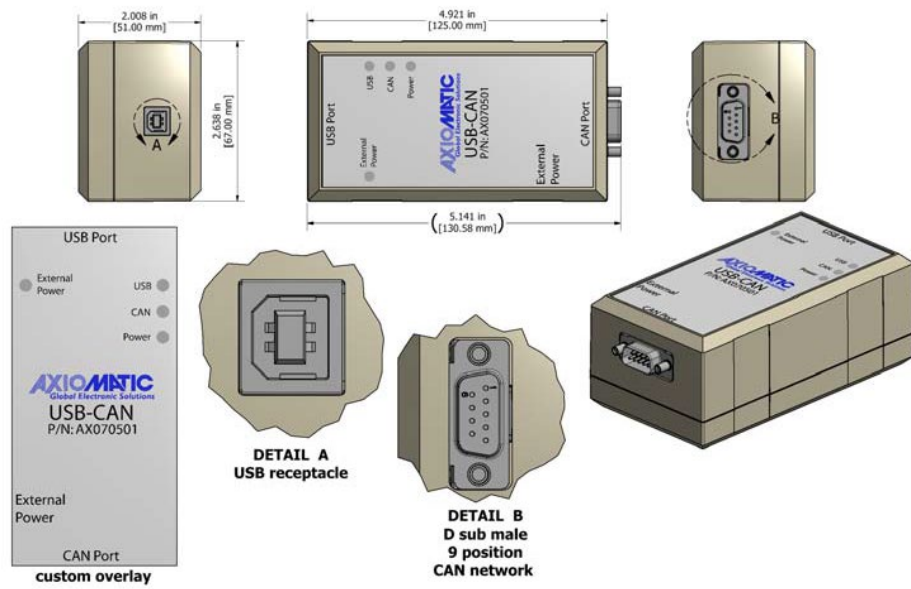**5. CAN Assistant – Visual software (P/N: AX070501VIS) & documentation (UMAX070501VIS)**
This software graphs J1939 application messages in real time.

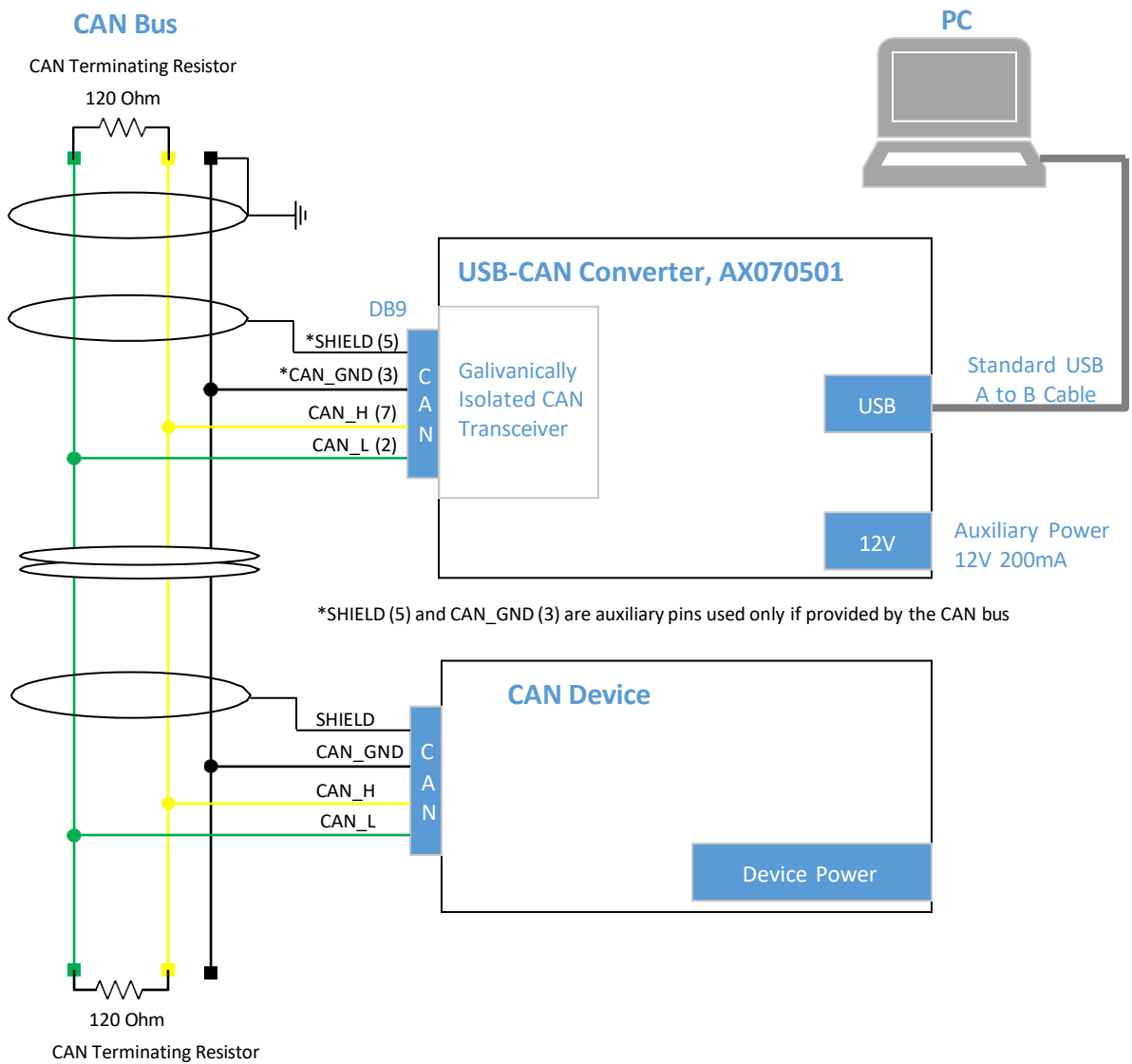**6. Software Development Kit (SDK) (P/N: AX070501SDK) & documentation (UMAX070501SDK)**
for *Windows*® operating system

## Specifications: USB-CAN Converter

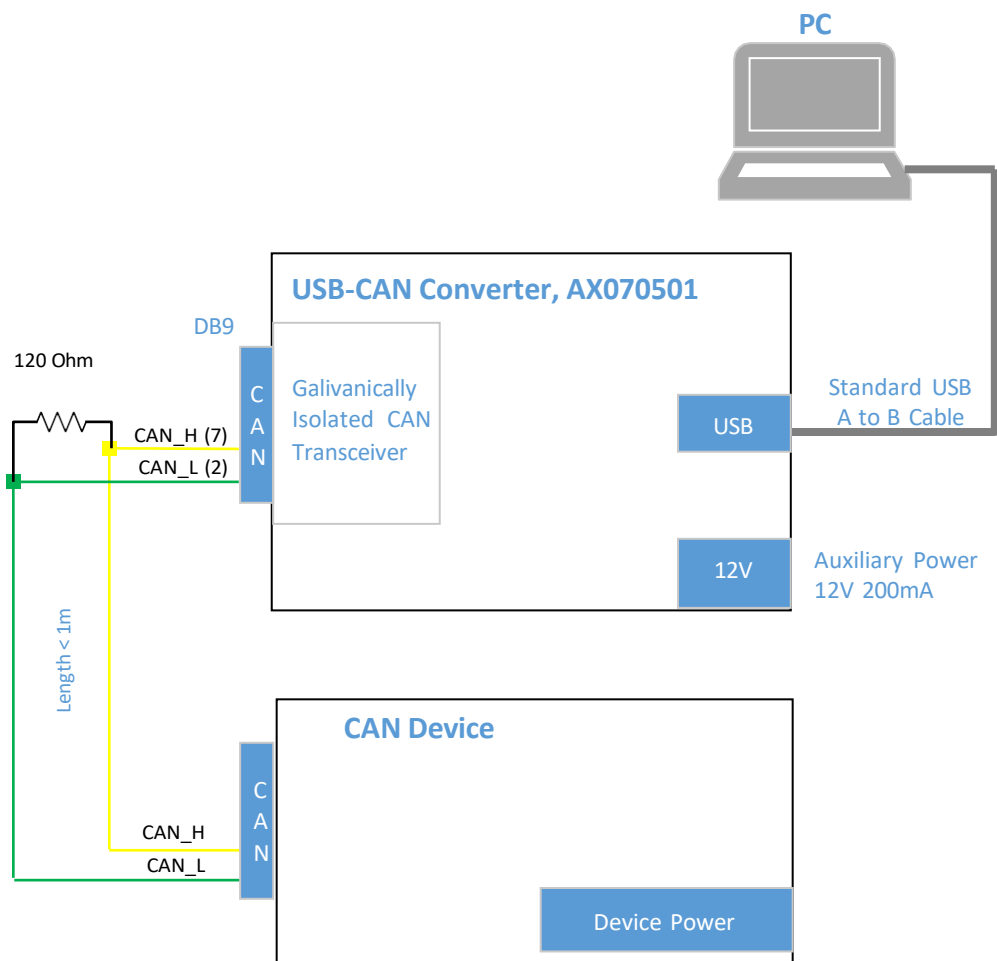| | |
|---|---|
| CAN Interface | Differential, Electrically isolated, 1 Mbit/s |
| Connections | USB socket: USB 1.1 or 2.0 full speed<br>CAN: 9 pole DSUB male (DB-9)<br><br>*Figure 3: DB-9 Pin out* |
| Supply Voltage | By default, the unit should be powered directly from the USB port (5V).<br>External 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).<br>*Optional External Power:*<br>12VDC, 200 mA or higher from a standard power plug, 2.5 mm diameter, positive polarity |
| LED Indicators | USB – red/green<br>CAN – red/green<br>Power – red/green<br>External Power – green<br>*Refer to User Manual UMAX07050X for details.* |
| Microcontroller | ST Micro ARM 7 family |
| Dimensions | ABS enclosure Rose & Bopla P/N EG1250F<br>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 | Unterminated cable with female DB-9, 12 inches (30 cm)<br>This is a temporary cable for initial configuration and is not suitable for use during machine operation.<br>Pin out:<br>Red (or Green): CAN Lo<br>White (or Yellow): CAN Hi<br>Black: CAN GND |
| CBL-USB-AB-MM-1.5, Cable | Standard USB Male A to Male B Cable, 1 ft. (0.3m) |

| Dimensions |  |

DETAIL A
USB receptacle

DETAIL B
D sub male
9 position
CAN network

custom overlay

USB Port

External
Power

USB
CAN
Power

AXIOMATIC
Global Electronic Solutions
USB-CAN
P/N: AX070501

External
Power

CAN Port

2.008 in
[51.00 mm]

2.638 in
[67.00 mm]

4.921 in
[125.00 mm]

5.141 in
[130.58 mm]

USB-CAN
P/N:AX070501

**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)**

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