TECHNICAL DATASHEET #TDAX141100

CAN-Bluetooth Gateway with RTC

Transfers Wireless Data to a PC, Smart Phone, Display, or Tablet
Apple iOS and Android Interface
P/N: AX141100

Features

- CAN bus (SAE J1939)
- Configurable baud rate
- Bluetooth® (Classic & BLE)
- Connection range up to 50 m (164 ft.) (May vary. See details below.)
- RTC back up power (96 hours)
- 8-60Vdc (12V or 24Vdc nominal) with load dump
- -30°C to 85°C
- IP67
- Compact, ultrasonic welded enclosure
- 8-pin TE Deutsch type connector
- LED indicator
- CE, UKCA, RCM
- FCC, IC, BT SIG compliant
- Vibration and shock compliance for off-highway applications
- Configurable via Axiomatic Electronic Assistant
- Configurable via Axiomatic CAN2BLE Configuration application on compatible Apple iOS or Android devices using Bluetooth® Low Energy (BLE).
- Configurable via Axiomatic CAN2BT Configuration application on compatible Android devices using Bluetooth® Classic. (This application is no longer updated.)

Ordering Part Numbers

CAN-Bluetooth Gateway with RTC, Apple iOS & Android Interface, SAE J1939 with Auto-Baud-Rate Detection, P/N: **AX141100**

Accessories:

- **AX070112** Mating Plug Kit
- Axiomatic Electronic Assistant KIT, P/N: **AX070502** or **AX070506K**
- **CAN2BLE Configuration** application available for Android and iOS devices (see User Interface below).
- **CAN2BT Configuration** application (no longer updated) available from Google Play

Description

The CAN-Bluetooth Gateway transfers wireless data to a PC, smartphone, display or tablet. It features an RTC with 4 Gbit of flash memory. The setpoints are configurable using the **CAN2BLE Configuration** Android and iOS application or via **CAN2BT Configuration** Android application.

Additionally, the controller includes a configurable dual LED which is visible from outside the housing. It has rugged packaging and performance for IP67, high vibration and off-highway machine environments. SAE J1939 is the CAN bus protocol. The gateway has a configurable baud rate.

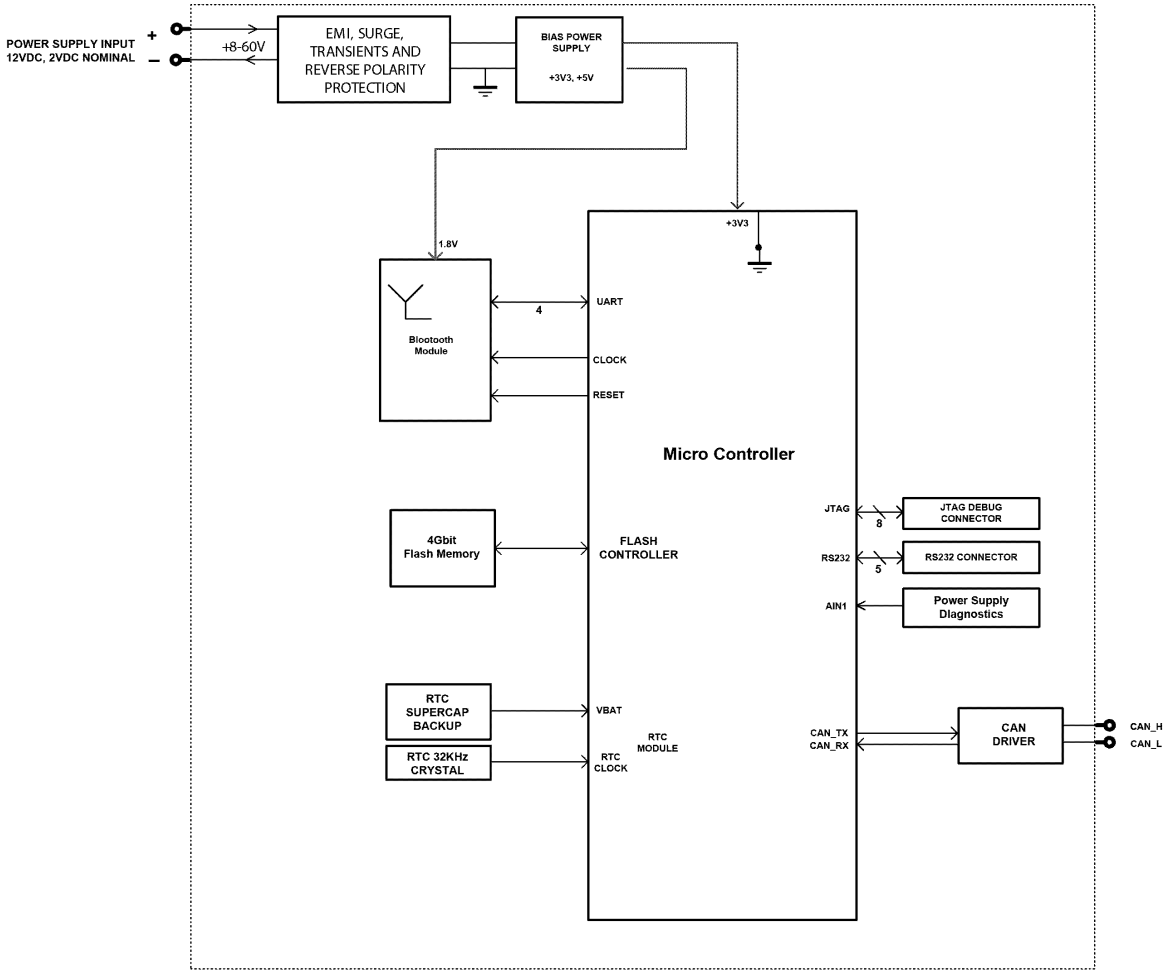
Axiomatic Technologies Oy
Höytämöntie 6
33880 LEMPÄÄLÄ, Finland
Tel. +358 103 375 750
salesfinland@axiomatic.com
www.axiomatic.fi

Axiomatic Technologies Corporation
1445 Courtneypark Dr. E.
Mississauga, ON Canada L5T 2E3
Tel. 1 905 602 9270
sales@axiomatic.com
www.axiomatic.com

The device uses both Bluetooth® standards, Classic and Low Energy (BLE). Axiomatic smart phone applications are available only for both standards on Android platform, but only for BLE standard on iOS.

These CAN-Bluetooth devices can be used as a pair for creating a bridge for CAN data.

Block Diagram



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/.

Power Supply Input - Nominal	12Vdc or 24Vdc nominal (8…60 VDC power supply range) Load dump protection is provided.
Protection	Reverse polarity protection is provided. Overvoltage protection up to 88V is provided.
CAN	SAE J1939 CAN bus configuration allows changing the CAN interface baud rate. The list of available baud rate options includes 50 kbps, 100 kbps, 125 kbps, 250 kbps (default), 500 kbps and 1 Mbps.

Bluetooth®	TI CC2564MODA Bluetooth® Host Controller Interface Module Bluetooth® LE V4.1 compliant Dual-Mode Bluetooth® V4.0 with classic Bluetooth® and BLE Connection Range*: Up to 50 m (164 ft.) Operating Range*: Up to 150 m (492 ft.) @ 13 dbm (Class 1) Serial Port Profile (SPP) Internal antenna **Range depends on the operating environment and actual results may vary.*
Microcontroller	STM32F407VGT7 32-bit, 1024 Kbit program flash
RTC	Real Time Clock back up power 96 hours 4 Gbit Flash Memory
Quiescent Current	15 mA @ 24Vdc Typical
LED Indicator	User configurable
Control Logic	User programmable functionality. Refer to User Manual.
User Interface	CAN2BLE Configuration Application is available for a fee from Google Play for Android devices. It uses Bluetooth® Low Energy (BLE) standard. (https://play.google.com/store/apps/details?id=com.axiomatic.can2bt) CAN2BLE Configuration Application can be downloaded for a fee from Apple's App Store for iOS devices. It uses Bluetooth® Low Energy (BLE) standard. (https://apps.apple.com/us/app/can2ble-configuration/id6478509202). CAN2BT Configuration application is available from Google Play. It uses Bluetooth® Classic. This application is no longer updated. (https://play.google.com/store/apps/details?id=com.axiomatic.can2btconfiguration)
CAN User Interface	Axiomatic Electronic Assistant KIT (P/Ns: **AX070502** or **AX070506K**)
Software Flashing	New software can be flashed over the CAN bus using the Axiomatic Electronic Assistant.
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.
Operating Conditions	-30 to 85 °C (-22 to 185 °F)
Protection	IP67
Weight	0.15 lb. (0.06 kg)
Approvals	CE, UKCA, RCM FCC: Based on TI CC2564MODACMOG compliance - Z64-2564N IC: Based on TI CC2564MODACMOG compliance - 451I-2564N BT SIG: Based on TI CC2564MODACMOG compliance - Bluetooth® 4.1 Controller Subsystem Qualified (CC2564MODA: QDID 64631). Compliant up to the HCI Layer
Vibration	MIL-STD-202G, Method 204D test condition C (Sine) and Method 214A, test condition B (Random) 10 g peak (Sine) 7.68 Grms peak (Random)
Shock	MIL- STD-202G, Method 213B, test condition A 50g (half sine pulse, 9ms long, 8 per axis)
Enclosure	Molded Enclosure, integral connector Nylon 6/6, 30% glass, Ultrasonically welded 3.47 x 2.75 x 1.31 inches (88.2 x 70.0 x 33.3 mm) L x W x H including integral connector Refer to the dimensional drawing.

<table>
<tr><td>Electrical Connections</td><td>Integral 8-pin receptacle (equivalent TE Deutsch P/N: DT04-08PA)
18 AWG wire is recommended for use with contacts 0462-201-16141.

A mating plug kit is available. Ordering P/N: AX070112 is comprised of 1 DT06-08SA, 1 W8S, 8 0462-201-16141, and 3 114017.
<table>
<tr><th>PIN #</th><th>FUNCTION</th></tr>
<tr><td>1</td><td>CAN_L</td></tr>
<tr><td>2</td><td>CAN_H</td></tr>
<tr><td>3</td><td>CAN _SHIELD</td></tr>
<tr><td>4</td><td>NOT USED</td></tr>
<tr><td>5</td><td>NOT USED</td></tr>
<tr><td>6</td><td>NOT USED</td></tr>
<tr><td>7</td><td>BATT +</td></tr>
<tr><td>8</td><td>BATT -</td></tr>
</table></td></tr>
<tr><td>Mounting</td><td>Mounting holes are sized for #8 or M4 bolts. The bolt length will be determined by the end-user's mounting plate thickness. The mounting flange of the controller is 0.425 inches (10.8 mm) thick. It should be mounted with connectors facing left or right to reduce the likelihood of moisture entry. All field wiring should be suitable for the operating temperature range. Install the unit with appropriate space available for servicing and for adequate wire harness access (6 inches or 15 cm) and strain relief (12 inches or 30 cm).</td></tr>
</table>

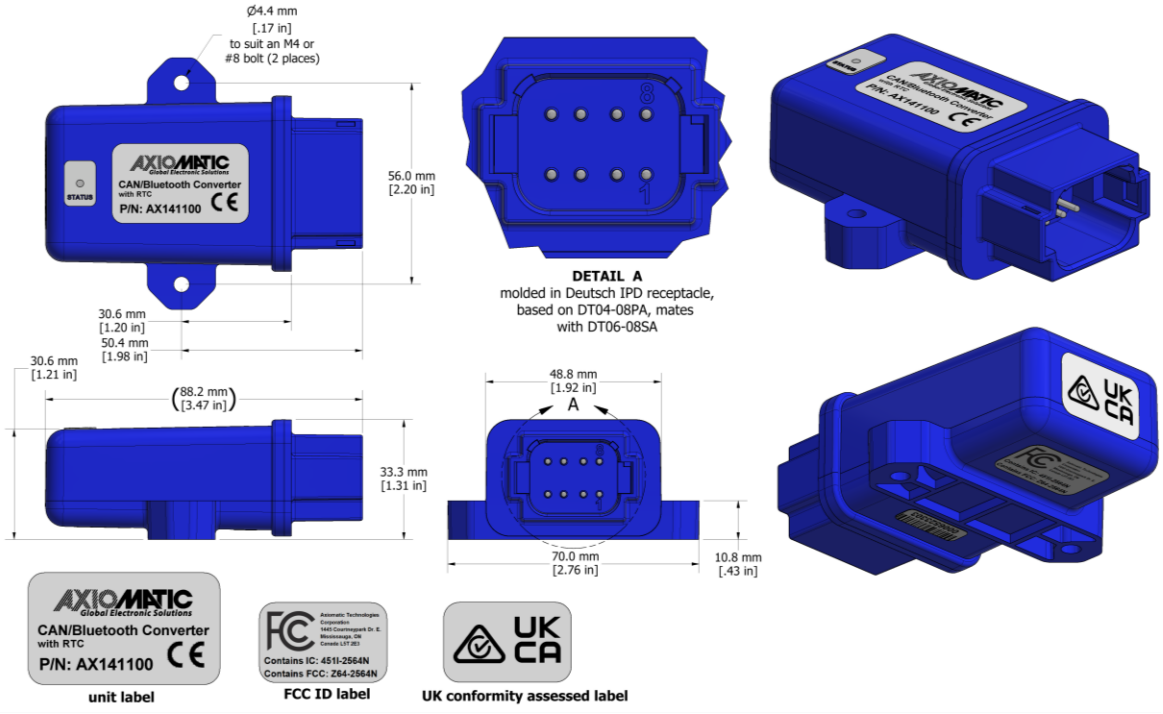


Figure 1.0. – Dimensional Drawing

Note: Bluetooth® is a registered trademark of Bluetooth SIG.

Form: TDAX141100-09/12/2024