

Protocol Converter

Extended Inputs

1 Isolated RS-485 Port (Modbus RTU)

2 Isolated CAN Ports (SAE J1939 & CANopen®)

Configurable with Axiomatic Electronic Assistant

P/N: AX140200

Features

- Acts as a gateway or interface between two CAN buses with different baud rates and protocols (SAE J1939 - CANopen®)
- Fast data exchange between two CAN networks (SAE J1939 & CANopen®) and an RS-485 bus (Modbus RTU)
- Allows for 100+ input messages
- 2 isolated CAN ports (SAE J1939 & CANopen®)
- 1 isolated RS-485 serial port (Modbus RTU)
- Operational from 9 to 36 VDC (12 or 24 VDC nominal)
- Integrated 12-pin connector
- Fully sealed enclosure with a rugged IP67 protection rating
- Compact size
- CE / UKCA marking, BV and DNV-GL type approvals
- User configurable using Axiomatic Electronic Assistant
- EDS file provided for configuring CANopen®

Applications

- Mobile (off-highway) equipment
- Transport vehicles
- Power genset control systems
- Control panels for power generation, marine, and oil & gas applications



Ordering Part Numbers

Protocol Converter, SAE J1939, CANopen®, Modbus RTU - P/N: **AX140200**

Protocol Converter, 2 SAE J1939, Modbus RTU - P/N: **AX140100**

Protocol Converter, 2 SAE J1939, Modbus RTU, Extended Inputs - P/N: **AX140100-100**

Protocol Converter, SAE J1939, SAE J1939, J1587 - P/N: **AX140400**

Accessories:

Mating Plug KIT - P/N: **AX070105**

Axiomatic Electronic Assistant Configuration KIT - P/Ns: **AX070502** or **AX070506K**

EDS File

Dimensional Drawing

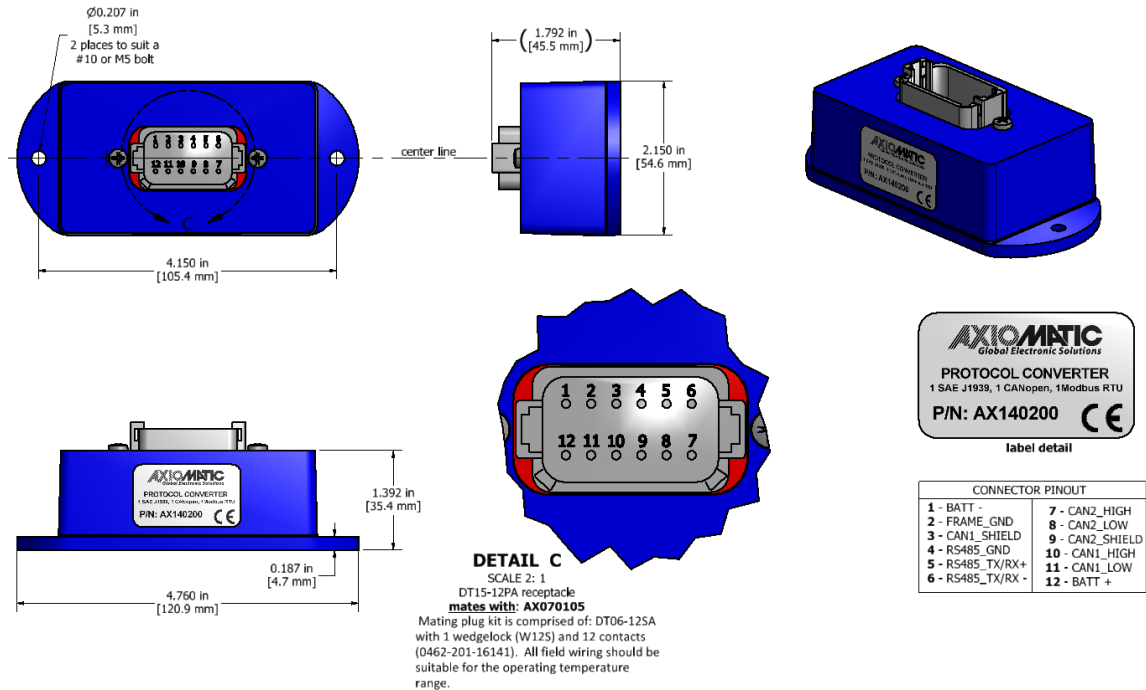


Figure 1.0 – Dimensional Drawing for AX140200

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 Limitations & Return Materials Process as described on <https://www.axiomatic.com/service/>.

Typical at nominal input voltage and 25 °C unless otherwise specified.

Power

Power Supply Input	12 or 24 VDC nominal (9 to 36 VDC) The minimum allowable supply voltage for the power pin is 8 VDC.
Quiescent Current	36 mA @12 V; 19 mA @ 24 V
Surge Protection	95 VDC
Reverse Polarity Protection	Provided

Control Software

Software Platform	The Protocol Converter comes pre-programmed with standard protocol conversion logic for data exchange between two CAN networks and RS-485. The following protocols are available in the standard control logic. <ul style="list-style-type: none"> SAE J1939 (CAN 1 port) CANopen® (CAN 2 port) Modbus RTU (RS-485 port) Custom programming for other applications is available on request.
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General Specifications

Memory	STM32F205 32-bit, 512 Kbytes Flash Program Memory																										
RS-485 Port	1 isolated RS-485																										
CAN Ports	2 isolated CAN ports SAE J1939 on CAN port 1 CANopen® on CAN port 2																										
Isolation	300 Vrms																										
User Interface – SAE J1939	Parameters are configurable using the Axiomatic Electronic Assistant - P/Ns: AX070502 or AX070506K . The functionality of the Axiomatic Electronic Assistant includes but is not limited to the following. <ul style="list-style-type: none"> Specify CAN message filters Allow SAE J1939 PGNs to be transmitted over CANopen® Link Modbus to CAN bus Link CANopen® to SAE J1939 Define CANnode ID, and baud rate Facilitate dynamic decoupling of 2 CAN networks Monitor CAN data 																										
User Interface – CANopen®	EDS file provided to interface with the device using standard CANopen® tools																										
Compliance	CE / UKCA marking (EMC Directive) RoHS Directive																										
Vibration	4 g IEC publication 60068-2-6, Test Fc																										
Marine Type Approvals	DNG-GL and Bureau Veritas (BV)																										
Protection Rating	IP67 Unit is encapsulated within the housing.																										
Operating Conditions	-40 to 75 °C (-40 to 167 °F)																										
Storage Temperature	-55 to 85 °C (-67 to 185 °F)																										
Enclosure	Aluminum enclosure, integral connector, encapsulation Refer to dimensional drawing.																										
Weight	0.70 lbs. (0.32 kg)																										
Electrical Connections	12-pin connector (TE Deutsch P/N: DT15-12PA) <table border="1"> <thead> <tr> <th>Pin</th><th>Description</th></tr> </thead> <tbody> <tr><td>1</td><td>Battery -</td></tr> <tr><td>2</td><td>Not Used</td></tr> <tr><td>3</td><td>CAN 1 Shield</td></tr> <tr><td>4</td><td>RS-485 Ground</td></tr> <tr><td>5</td><td>RS-485 TX/RX+</td></tr> <tr><td>6</td><td>RS-485 TX/RX-</td></tr> <tr><td>7</td><td>CAN 2 High</td></tr> <tr><td>8</td><td>CAN 2 Low</td></tr> <tr><td>9</td><td>CAN 2 Shield</td></tr> <tr><td>10</td><td>CAN 1 High</td></tr> <tr><td>11</td><td>CAN 1 Low</td></tr> <tr><td>12</td><td>Battery +</td></tr> </tbody> </table>	Pin	Description	1	Battery -	2	Not Used	3	CAN 1 Shield	4	RS-485 Ground	5	RS-485 TX/RX+	6	RS-485 TX/RX-	7	CAN 2 High	8	CAN 2 Low	9	CAN 2 Shield	10	CAN 1 High	11	CAN 1 Low	12	Battery +
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Mating Plug Kit	A mating plug kit is available under P/N: AX070105 (includes 1x plug DT06-12SA, 1x wedgelock W12S, 12x contacts 0462-201-16141, and 6x sealing plugs 114017)																										
Installation	Mounting holes sized for #10 or M4.5 bolts. The bolt length will be determined by the end-user's mounting plate thickness. The mounting flange of the controller is 0.19 in. (4.75 mm) thick. If the module is mounted without an enclosure, it should be mounted to reduce the likelihood of moisture entry. Install the unit with appropriate space available for servicing and for adequate wire harness access (6 in. or 15 cm) and strain relief (12 in. or 30 cm). The CAN wiring is considered intrinsically safe. The power wires are not considered intrinsically safe and so in hazardous locations, they need to be located in conduit or conduit trays at all times. The module must be mounted in an enclosure in hazardous locations for this purpose. All field wiring should be suitable for the operating temperature range of the module. All chassis grounding should go to a single ground point designated for the machine and all related equipment.																										

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Form: TDAX140200-08/13/2025