

**CAN to 2 Analog/Digital Isolated Signals and 1 Relay Output Converter**  
**Isolated SAE J1939**  
**P/N: AX130770**

**Features:**

- 2 Analog/Digital isolated signal outputs configurable as: 0-5V; 0-10V; 4-20 mA; Frequency or PWM Signal.
- 1 Relay output
- 1 isolated CAN port (SAE J1939)
- Operational 9...36 Vdc (12 Vdc or 24 Vdc)
- Integrated TE Deutsch IPD 12-pin connector
- Fully sealed TE Deutsch enclosure, IP67
- Meets the surge requirements of SAE J1445
- Designed for EMC compliance
- Configure with Axiomatic Electronic Assistant



**Applications:**

- Throttle controls for marine engine applications
- Servo applications

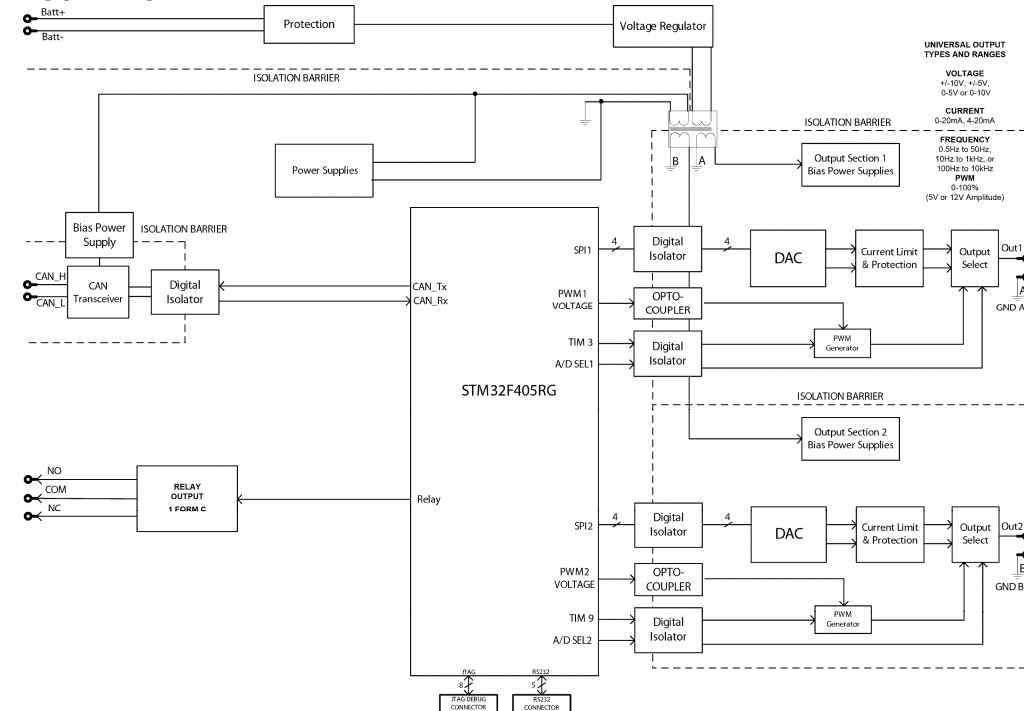
**Ordering Part Numbers:**

CAN to A/D and Relay Outputs Converter, 250 kbps Isolated SAE J1939 - P/N: **AX130770**  
 CAN to A/D and Relay Outputs Converter, 500 kbps Isolated SAE J1939 - P/N: **AX130770-01**  
 CAN to A/D and Relay Outputs Converter, 1 Mbps Isolated SAE J1939 - P/N: **AX130770-02**

Accessories:

Configuration Tool: Electronic Assistant® P/N: **AX070502**  
 Mating Plug KIT: **PL-DTM06-12SA**

**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 [www.axiomatic.com/service.html](http://www.axiomatic.com/service.html).*

## Power

Power Supply Input - Nominal	12 V or 24 Vdc nominal; 9...36 Vdc The minimum allowable supply voltage for the power pin is 7 Vdc.
Surge Protection	Meets the surge requirements of SAE J1445
Reverse Polarity Protection	Provided
Under and Over Voltage Protections	Under-voltage shutdown at 8V. Over-voltage shutdown at 48V.

## Outputs

Analog/Digital Output	<p>2 isolated signal outputs configurable as: 0-5V, 0-10V, 4-20 mA, PWM/Frequency or Digital</p> <p>Analog Voltage or Current Outputs: Voltage Output: 0-5 Vdc, 0-10 Vdc Maximum load is 30 mA. Current Output: 0-20 mA or 4-20 mA Maximum load resistance is &lt; 500 Ohms. Compliance Voltage is 14V.</p> <p>Digital Types: PWM or Frequency Outputs 0.1 Hz to 20 kHz 0-100% D.C. 5 V or 12 V Amplitude Push pull output Maximum load is 50 mA. Over-current protection (50 mA)</p> <p>12-bit Protected against shorts to GND or +Vcc</p>
Output Accuracy	<p>Voltage: 0.2% Current: 0.2% PWM Signal: 0.1% Frequency Signal: 0.1% Digital: 1%</p>
Relay Output	<p>Sets 1 Form C relay output Resistive load:</p> <ul style="list-style-type: none"> <li>• 5A (NO)/5 A (NC) at 30Vdc</li> </ul> <p>Dielectric strength:</p> <ul style="list-style-type: none"> <li>• 3,000 VAC, 50/60 Hz for 1 min between coil and contacts</li> <li>• 2,500 Vrms between open contacts</li> </ul> <p>There is no special overcurrent/overvoltage protection on the relay outputs. The user is advised to provide a fast acting 6A fuse or an adequate external protection if necessary.</p>

## Control Software

Software Platform	Pre-programmed with standard logic. Refer to the user manual.
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## General Specifications

Memory	STM32F405RGT7; 32-bit, 1024 Kbytes Flash Program Memory
CAN Port	1 Isolated CAN (SAE J1939) AX130770: 250 kbps baud rate AX130770-01: 500 kbps baud rate AX130770-02: 1 Mbps baud rate
Isolation	300 Vrms; 4 Way isolation (power-output1-output2-CAN)
Quiescent Current Draw	Typical 65mA @12Vdc; 35mA @ 24Vdc
Response Time	<10 mSec. Typical
Operating Conditions	-40 to 85°C (-40 to 185°F)
Weight	0.15 lb. (0.068 kg) preliminary
Protection Rating	IP67

Vibration	MIL-STD-202G, Test 204D and 214A (Sine and Random) 10 g peak (Sine); 7.86 Grms peak (Random)																												
Shock	MIL-STD-202G, Test 213B, 50 g																												
Enclosure and Dimensions	High Temperature Nylon housing – TE Deutsch PCB Enclosure (EEC-325X4B) 4.677 x 5.236 x 1.417 inches 118.80 x 133.00 x 36.00 mm (W x L x H excluding mating plugs) Refer to Figure 1.0, dimensional drawing.																												
Electrical Connections	Integral TE Deutsch 12 pin receptacle (P/N: DTM13-12PA-R008) <table border="1" data-bbox="597 415 1024 787"> <thead> <tr> <th colspan="2">CAN and I/O Connector</th> </tr> <tr> <th>Pin #</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>Relay Output (NC)</td></tr> <tr><td>2</td><td>CAN_GND</td></tr> <tr><td>3</td><td>Output 2 GND</td></tr> <tr><td>4</td><td>Output 1 GND</td></tr> <tr><td>5</td><td>CAN_H</td></tr> <tr><td>6</td><td>CAN_L</td></tr> <tr><td>7</td><td>BATT +</td></tr> <tr><td>8</td><td>BATT-</td></tr> <tr><td>9</td><td>A/D Output 1</td></tr> <tr><td>10</td><td>A/D Output 2</td></tr> <tr><td>11</td><td>Relay Output (C)</td></tr> <tr><td>12</td><td>Relay Output (NO)</td></tr> </tbody> </table>	CAN and I/O Connector		Pin #	Description	1	Relay Output (NC)	2	CAN_GND	3	Output 2 GND	4	Output 1 GND	5	CAN_H	6	CAN_L	7	BATT +	8	BATT-	9	A/D Output 1	10	A/D Output 2	11	Relay Output (C)	12	Relay Output (NO)
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Mating Plug Kit	Axiomatic PN: PL-DTM06-12SA It is comprised of the following TE Deutsch parts: DTM06-12SA; wedgelock WM12S; 12 contacts (0462-201-20141); and 6 sealing plugs (0413-204-2005).																												
User Interface, Reflashing	Axiomatic Electronic Assistant <b>AX070502</b>																												

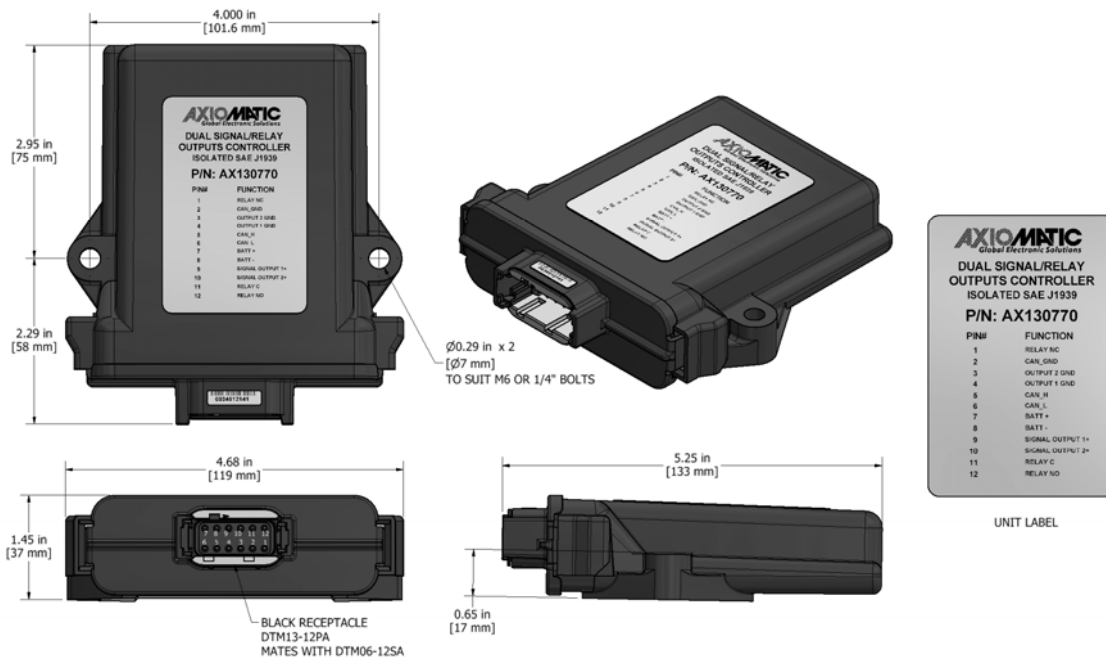


Figure 1.0 – Dimensional Drawing

Form: TDAX130770-09/10/19