

## 48Vdc/12 or 24Vdc, 2A Charger/Converter

SAE J1939

P/N: AX090670

### Features:

- 48Vdc/12 or 24Vdc, 2A (54 Watts) Converter
- 14Vdc, 2A Battery Charger for SLA or AGM batteries or 24Vdc, 2A (user selectable)
- Typical charging efficiency of 91% (12Vdc battery)
- Non-isolated
- 1 CAN port (SAE J1939) - Battery charge status is communicated over CAN
- Operates from 30Vdc-60Vdc for 24V battery and from 17Vdc-60Vdc for 12V battery
- Typical efficiency of 91% (24Vdc battery)
- Thermal protection for over temperature
- Reverse battery, over and under-voltage protection
- Short circuit and overcurrent protection
- -40 to 70 °C (-40 to 158 °F) operating temperature
- Compact, ultrasonic welded enclosure
- 8-pin TE Deutsch type connector
- LED Indicator
- IP67
- EMI/EMC compliant
- User configurable with the Axiomatic Electronic Assistant USB-CAN converter and software



**Applications:** The Charger/Converter is suitable for application on vehicle CAN based systems.

- ❖ Off-highway Equipment

### Ordering Part Numbers:

Charger/Converter, SAE J1939 P/N: **AX090670**

Accessories:

**AX070112** Mating Plug Kit :1 DT06-08SA, 1 W8S, 8 0462-201-16141, 3 114017

**AX070502** Axiomatic Electronic Assistant

## Technical Specifications:

All specifications are typical at nominal input voltage and 25 degrees C unless otherwise specified.

Input Specifications		Output Specifications	
Power Source	48 Vdc nominal	Nameplate Rating (Output Power)	54 VA nominal
Operating Voltage Range	30Vdc-60Vdc for 24Vbattery, 17Vdc-60Vdc for 12Vbattery @ 2 A load	Output Current (DC)	2 A continuous
Maximum Input Current	2ADC @ 30Vdc for 24V battery 2ADC @ 17Vdc for 12V battery	Output Voltage	14 Vdc ± 2% 27 Vdc ± 2% (user selectable)
Engine Load Dump	Designed to meet load dump conditions (up to 120Vdc)	Output Voltage Ripple	$V_{O(RIPPLE)} \leq 100$ mVpp
Reverse Voltage Protection	Provided	Turn-on time (at full load)	500 ms typical
Under-voltage Shutdown	25 Vdc typical	Stability	Stable at all loads (no minimum load requirement)
Over-voltage Shutdown	65 Vdc typical	Transient Response	700 mV/1 ms (25%-75% Load)
		Short Circuit Current	Protection provided Self-recovery 2A current limit

## General Specifications

Microprocessor	STM32F103CBT7																		
Communications	1 CAN port (SAE J1939, 250 kbps)																		
Control Logic	Refer to user manual.																		
User Interface	Electronic Assistant, P/N: AX070502																		
Operating Temperature	-40 to 70 °C (-40 to 158 °F)																		
Efficiency	91%																		
Weight	0.15 lb. (0.068 kg)																		
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.																		
Electrical Connections	Integral TE Deutsch 8 pin receptacle (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: <b>AX070112</b> is comprised of 1 DT06-08SA, 1 W8S, 8 0462-201-16141, and 3 114017.  <table border="1"> <thead> <tr> <th>PIN #</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CAN_L</td> </tr> <tr> <td>2</td> <td>CAN_H</td> </tr> <tr> <td>3</td> <td>BATT_TEMP-</td> </tr> <tr> <td>4</td> <td>BATT_TEMP+</td> </tr> <tr> <td>5</td> <td>V In +</td> </tr> <tr> <td>6</td> <td>V In -</td> </tr> <tr> <td>7</td> <td>BATT -</td> </tr> <tr> <td>8</td> <td>BATT +</td> </tr> </tbody> </table>	PIN #	FUNCTION	1	CAN_L	2	CAN_H	3	BATT_TEMP-	4	BATT_TEMP+	5	V In +	6	V In -	7	BATT -	8	BATT +
PIN #	FUNCTION																		
1	CAN_L																		
2	CAN_H																		
3	BATT_TEMP-																		
4	BATT_TEMP+																		
5	V In +																		
6	V In -																		
7	BATT -																		
8	BATT +																		
Mounting	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 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).																		

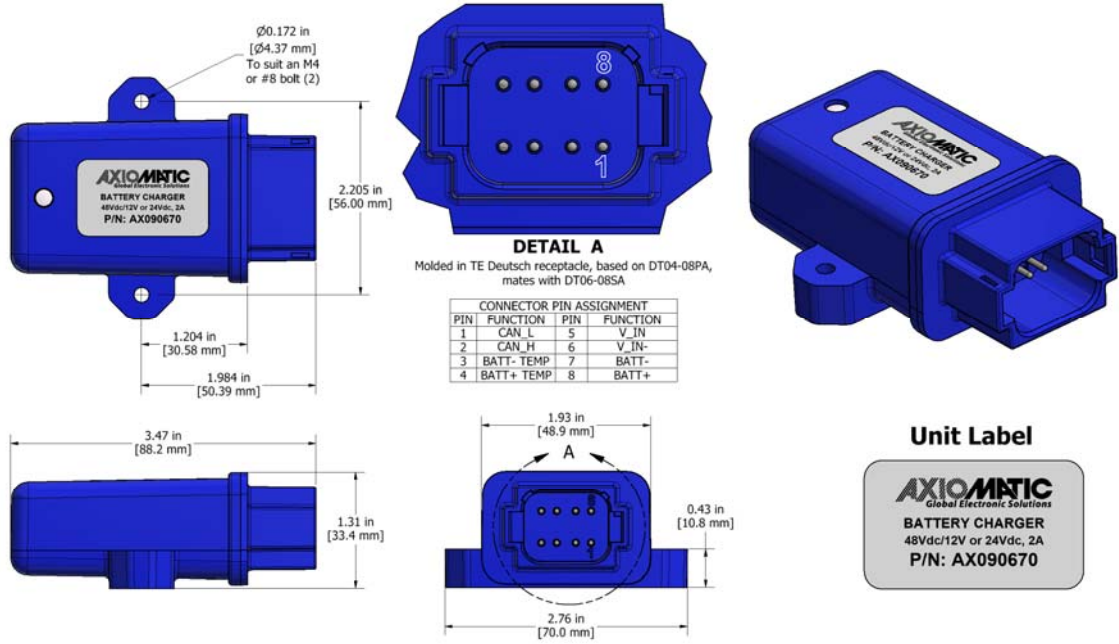


Figure 1.0 – Dimensional Drawing

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: TDAX090670-01/28/21