

24Vdc/16.8Vdc, 2A Charger/Converter

SAE J1939

P/N: AX090680

Features:

- 24Vdc/16.8dc, 2A (34 Watts) Converter
- 16.8Vdc, 2A Battery Charger for SLA or AGM batteries
- Typical charging efficiency of 91% (12Vdc battery)
- Non-isolated
- 1 CAN port (SAE J1939) - Battery charge status is communicated over CAN
- Operates from 20Vdc-36Vdc
- Typical efficiency of 91%
- 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
- ❖ Fire trucks and municipal vehicles

Ordering Part Numbers:

24V/16.8V, 2A Charger/Converter, SAE J1939 P/N: **AX090680**
24V/16.8V, 2A Charger/Converter, 500 kbps SAE J1939 P/N: **AX090680-01**
24V/16.8V, 2A Charger/Converter, 1 Mbps SAE J1939 P/N: **AX090680-02**

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	24 Vdc nominal	Nameplate Rating (Output Power)	33 VA nominal
Operating Voltage Range	20 to 36 Vdc provides output 16.8V regulated to 2% @ 2 A load	Output Current (DC)	2 A continuous
Maximum Input Current	2ADC @ 20Vdc	Output Voltage	16.8Vdc \pm 2%
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	16 Vdc typical	Stability	Stable at all loads (no minimum load requirement)
Over-voltage Shutdown	38 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) Model AX090680: 250 kbps Model AX090680-01: 500 kbps Model AX090680-02: 1 Mbps																		
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: AX070112 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).																		

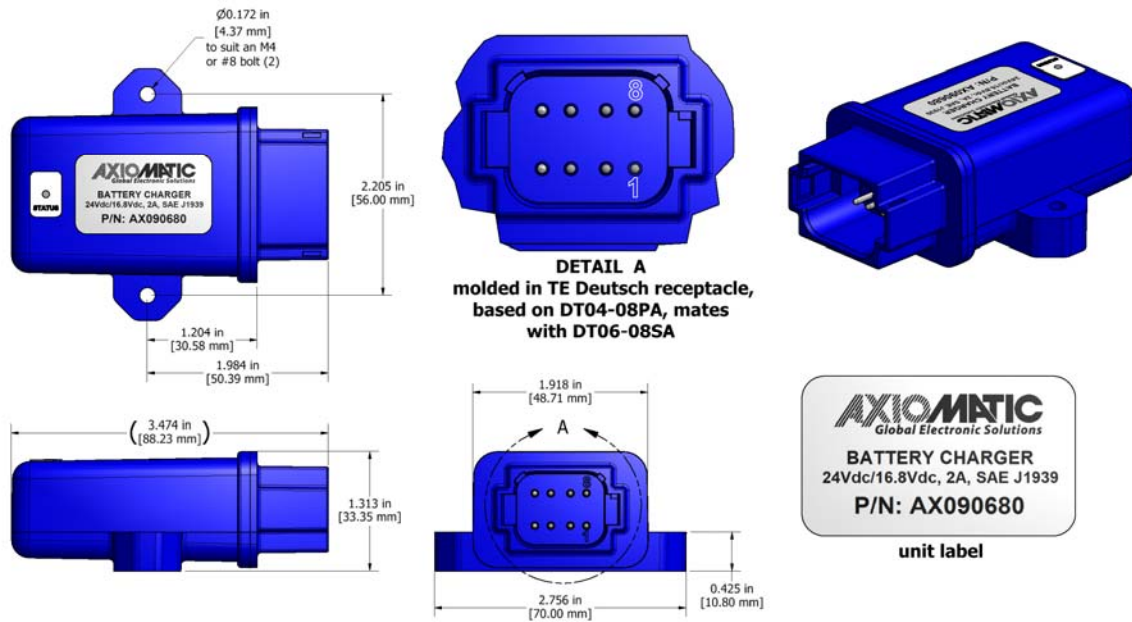


Figure 1.0 – Dimensional Drawing

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.

Form: TDAX090680-12/01/20