TECHNICAL DATASHEET #TDAX081580

Isolated 24Vdc/72Vdc Converter

18-36Vdc Input
72Vdc, 300W Output
P/N: AX081580

Features:

- 24Vdc/72Vdc, 300 Watts
- Isolated
- Operates from 18Vdc-36Vdc with derating at <18Vdc input (see Figure 1.0)
- Typical efficiency of 91%
- Input inrush current limit
- 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
- IP67
- 1 connector (equivalent TE Deutsch P/N: DTP13-4P)
- Dimensions: 8.50 x 5.125 x 2.50 inches (215.90 x 130.18 x 63.50 mm)
- EMI/EMC compliant
- SAE J1455 and SAE J1113 compliant
- Suitable for engine cranking and load dump
- Can be used in a current sharing configuration
- Redundancy for parallel application

Applications: The DC/DC converter is suitable for application on charging/cranking battery based systems.

- ❖ Off-highway Equipment
- ❖ Power generator set control systems
- ❖ Oilfield equipment
- ❖ Telecom

Ordering Part Numbers:

24V/72V, 300W, Isolated DC/DC Converter P/N: **AX081580**

Accessories:
Mating Wire Harness, 2 m: **AX070103**
or Mating Plug Kit: **AX070117**

To purchase the DC/DC Converter and mating wire harness as a KIT (AX081580 converter, AX070103 wire harness), the ordering P/N is **AX081580K.**

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Technical Specifications:

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

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/.

Input Specifications		Output Specifications	
Power Source	24 Vdc nominal	Nameplate Rating (Output Power)	300VA nominal
Operating Voltage Range*	18 to 36 Vdc provides output regulated to 3% @ 4.2A load For input <18Vdc, Refer to Figure 1.0.	Output Current (DC)	4.2A continuous
Maximum Input Current	20ADC @ 17Vdc	Output Voltage	72 Vdc ± 3% Refer to Figure 1.0.
Engine Cranking & Load Dump	Designed to meet engine cranking and load dump conditions	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	12Vdc 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 5.5A current limit

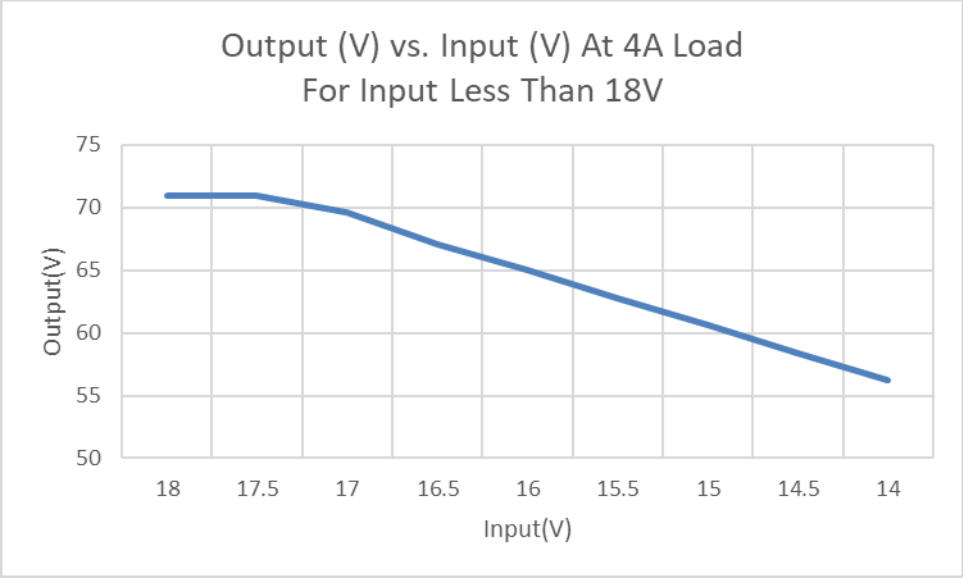

Figure 1.0 - Output Voltage vs.Input Voltage at Full Load

General Specifications

Approvals	CE marking
EMI and Environmental Compliance	Designed to meet the requirements of SAE J1455 and SAE J1113
Efficiency	91% (Refer to Figure 2.0.)
Isolation	707 Vdc minimum
Enclosure	Cast Aluminum housing, integral gasket and connector 8.14 x 5.83 x 2.50 inches (206.82 x 148.00 x 63.25 mm) L x W x H including integral connector Refer to the dimensional drawing, Figure 3.0.
Protection	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
Weight	4.20 lb. (1.9 kg)
Temperature Rating	Operating: -40 to 70°C (-40 to 158°F) Storage: -50 to 90°C (-58 to 194°F) *When the unit operates below 18V and at maximum load for long periods of time (> 30 seconds), the maximum operating temperature is 70 °C.*

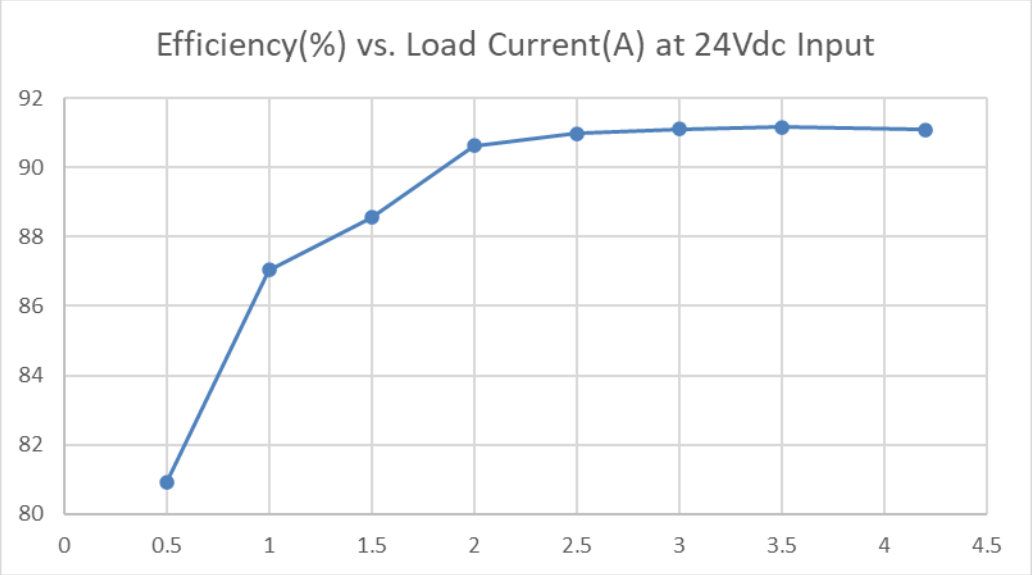

Figure 2.0. – Efficiency vs.Load Current at Input of 24V

Electrical Pinout	1 Connector (equivalent TE Deutsch P/N: DTP13-4P): **Pin # / Description** 1 – Input + 2 – Input - 3 – Output - 4 – Output + A mating plug assembly, P/N: **AX070117**, is available and is equivalent to the TE Deutsch P/Ns: DTP06-4S, WP4S and four contact sockets 0462-203-12141. Alternatively, a mating wire harness is available as P/N: **AX070103.** It has the following wire colours and pin out. Pin# 1 Red Batt+ Pin# 2 Black Batt- Pin# 3 White/Black Output- Pin# 4 White/Red Output+

Installation	**Set up** 1. A maximum 25A fuse is recommended in series with the 24V battery. 2. Use four ¼-20 1 inch or M6 bolts screws to mount the converter. 3. Ground the unit to chassis ground by attaching to the casing a ground strap. 4. Snap the plug connector into the mating receptacle mounted on the converter. 5. Connect the wiring to power and output terminal blocks (provided by customer). 6. Once the load is ready to receive power, turn on the power source to the converter.

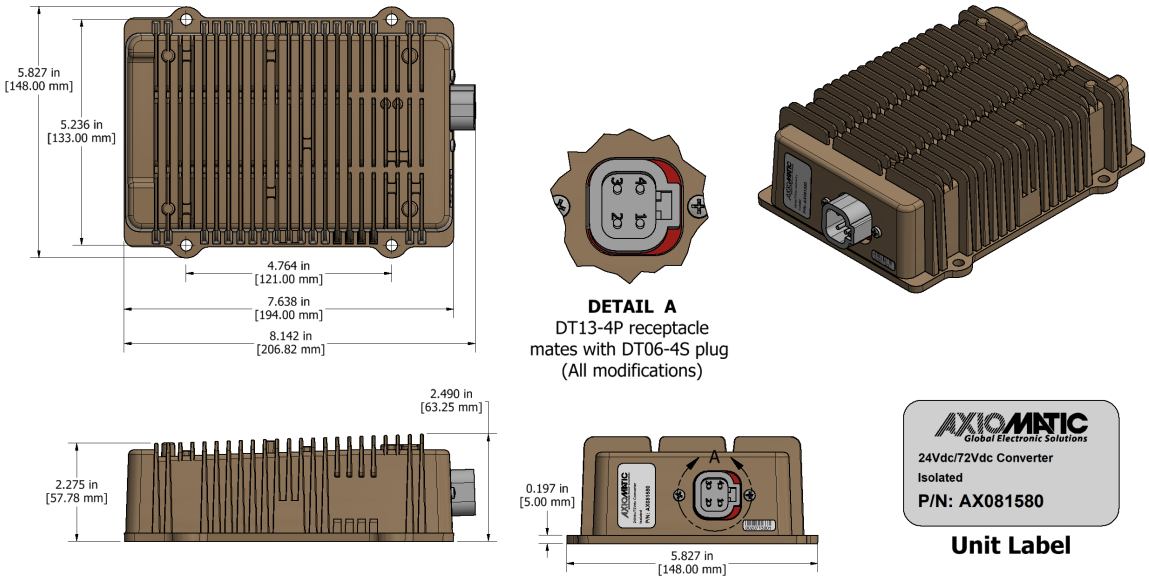

Figure 3. 0. – Dimensional Drawing

Form: TDAX081580-06/21/23