

Isolated 12Vdc/12Vdc Converter

6-16Vdc Input
12Vdc, 15A (180W) Output
P/N: AX081570

Rugged, isolated 12 Vdc for machine electronics

Features:

- 12Vdc/12Vdc, 15A (180 Watts)
- Isolated
- Operates from 6Vdc-16Vdc, output current derating for input<9V
- Typical efficiency of 89%
- Input inrush current limit
- Thermal protection for over temperature
- Reverse battery, over and under-voltage protection
- Short circuit and overcurrent protection
- -40 to 80 °C (-40 to 176 °F) operating temperature
- IP67
- 1 connector (equivalent TE Deutsch P/N: DT13-4P)
- Compact: 8.50 x 5.125 x 2.50 inches (215.90 x 130.18 x 63.50 mm)
- EMI/EMC compliant
- CE marking
- 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:

12V/12V, 180W, Isolated DC/DC Converter P/N: **AX081570**

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 (AX081570 converter, AX070103 wire harness), the ordering P/N is **AX081570K**.

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	12 Vdc nominal	Nameplate Rating (Output Power)	180 VA nominal
Operating Voltage Range*	6 to 16 Vdc Vin=>9V, provides output regulated to 3% @ 15 A load Vin<9V, see table Figure 1. for derating current	Output Current (DC)	15 A continuous
Maximum Input Current	25ADC @ 8Vdc	Output Voltage	12 Vdc \pm 3%
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	5.5 Vdc typical	Stability	Stable at all loads (no minimum load requirement)
Over-voltage Shutdown	20 Vdc typical	Transient Response	700 mV/1 ms (25%-75% Load)
		Short Circuit Current	Protection provided Self-recovery 18A current limit

General Specifications

EMI and Environmental Compliance	Designed to meet the requirements of SAE J1455 and SAE J1113 CE marking for the EMC Directive
Efficiency	89% (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 4.0.
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 80°C (-40 to 176°F) Storage: -50 to 90°C (-58 to 194°F) <i>When the unit operates below 18V and at maximum load for long periods of time (> 30 seconds), the maximum operating temperature is 75°C. Refer to Figure 3.0.</i>

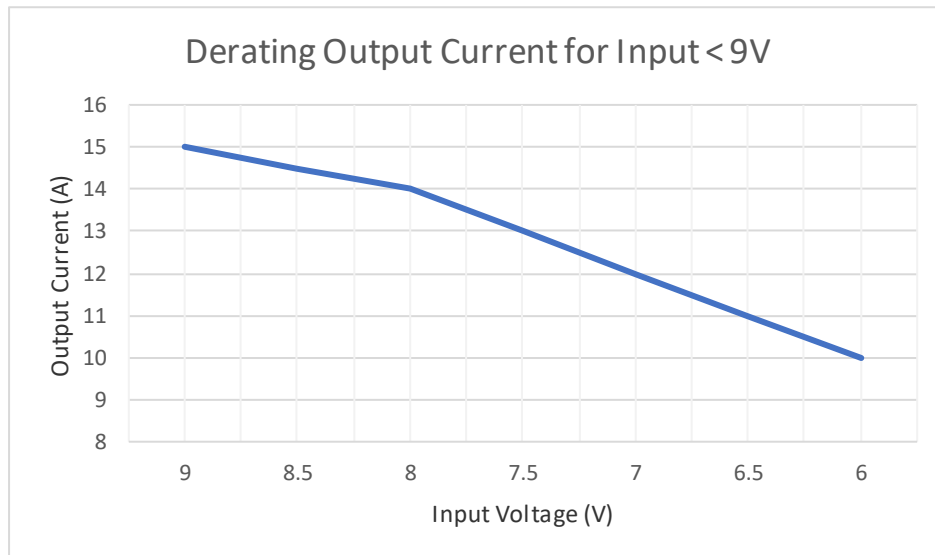


Figure 1. – Derating Output Current vs. Input Voltage

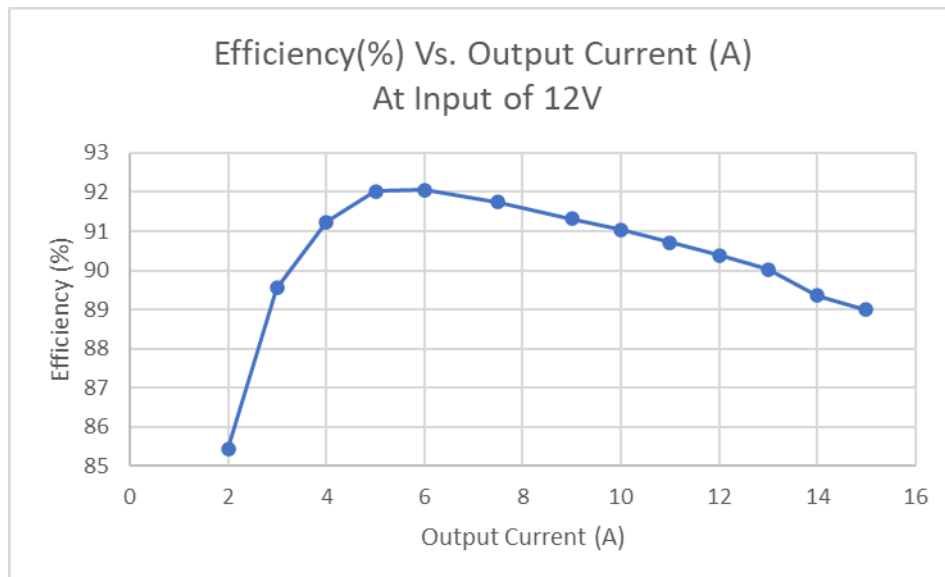


Figure 2. – Power Efficiency vs. Output Current

Electrical Pinout	<p>1 Connector (equivalent TE Deutsch P/N: DTP15-4P)</p> <table border="1" data-bbox="805 201 1123 338"> <thead> <tr> <th>Pin #</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Input +</td> </tr> <tr> <td>2</td> <td>Input -</td> </tr> <tr> <td>3</td> <td>Output -</td> </tr> <tr> <td>4</td> <td>Output +</td> </tr> </tbody> </table> <p>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.</p> <p>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+</p>	Pin #	Description	1	Input +	2	Input -	3	Output -	4	Output +
Pin #	Description										
1	Input +										
2	Input -										
3	Output -										
4	Output +										
Installation	<p>Set up</p> <ol style="list-style-type: none"> 1. A maximum 30A fuse is recommended in series with the 12V 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. 										

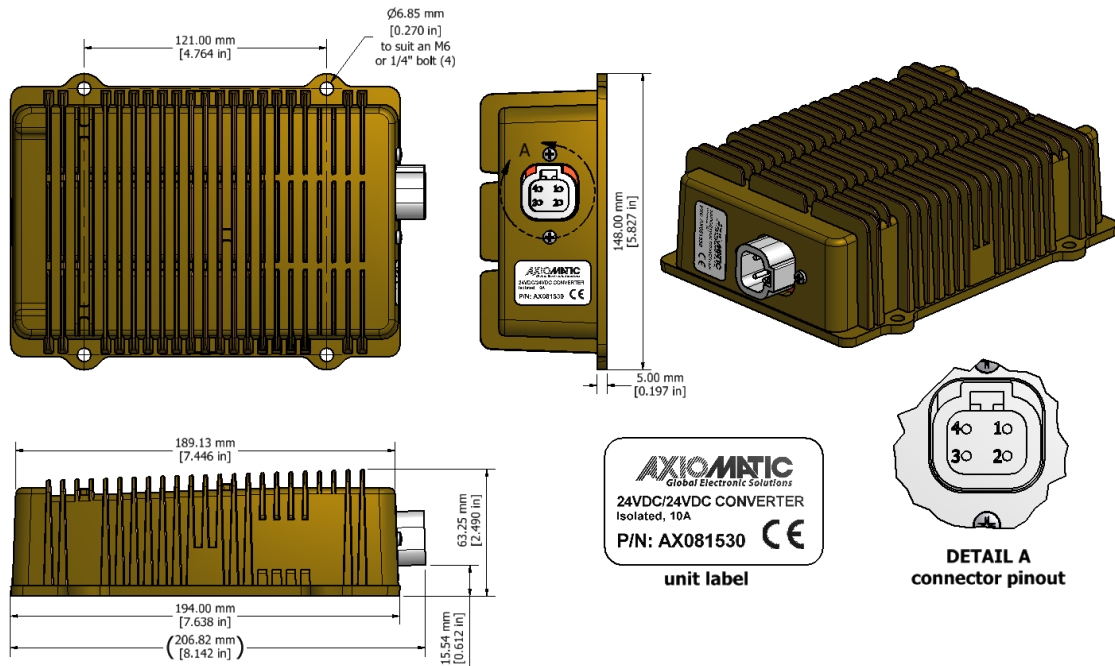


Figure 4. 0. – Dimensional Drawing – AX081570 (not shown) has the same dimensions.

Form: TDAX081570-06/21/23