

## Isolated 24Vdc/24Vdc Converter

9-36Vdc Input  
24Vdc, 240W Output  
P/N: AX081530

*Rugged, isolated 24 Vdc for machine electronics*

### Features:

- 24Vdc/24Vdc, 240 Watts
- Isolated
- Operates from 9Vdc-36Vdc (Refer to 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 85 °C (-40 to 185 °F) operating temperature
- IP67
- 1 connector (equivalent TE Deutsch P/N: DTP13-4P)
- Compact: 8.50 x 5.125 x 2.50 inches (215.90 x 130.18 x 63.50 mm)
- EMI/EMC compliant
- CE mark
- UL recognition
- 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/24V, 240W, Isolated DC/DC Converter P/N: **AX081530**

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 (AX081530 converter, AX070103 wire harness), the ordering P/N is **AX081530K**.

## 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 <https://www.axiomatic.com/service/>.

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)	240 VA nominal
Operating Voltage Range*	12 to 36 Vdc provides output regulated to 2% @ 10 A load 9 Vdc input derates output to 70% @ 10 A load Refer to Figure 1.0.	Output Current (DC)	10 A continuous
Maximum Input Current	22ADC @ 13Vdc	Output Voltage	24 Vdc $\pm$ 2% 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	8.5 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 12A current limit

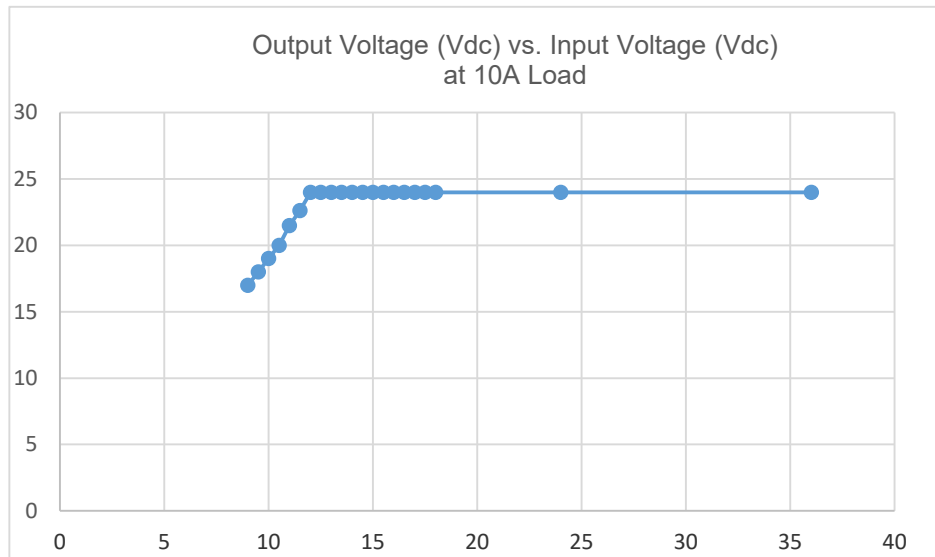


Figure 1.0 Output Voltage vs. Input Voltage at Full Load

## General Specifications

Approvals	UL recognition
EMI and Environmental Compliance	Designed to meet the requirements of SAE J1455 and SAE J1113 CE mark for the EMC Directive
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 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 85°C (-40 to 185°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 (&gt; 30 seconds), the maximum operating temperature is 75°C. Refer to Figure 3.0.</i>

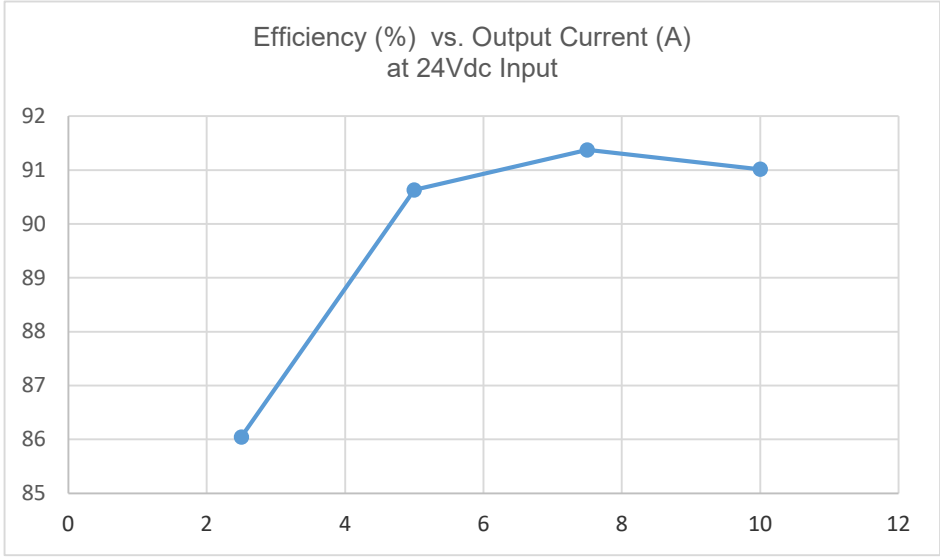


Figure 2.0. – Power Efficiency vs. Output Current

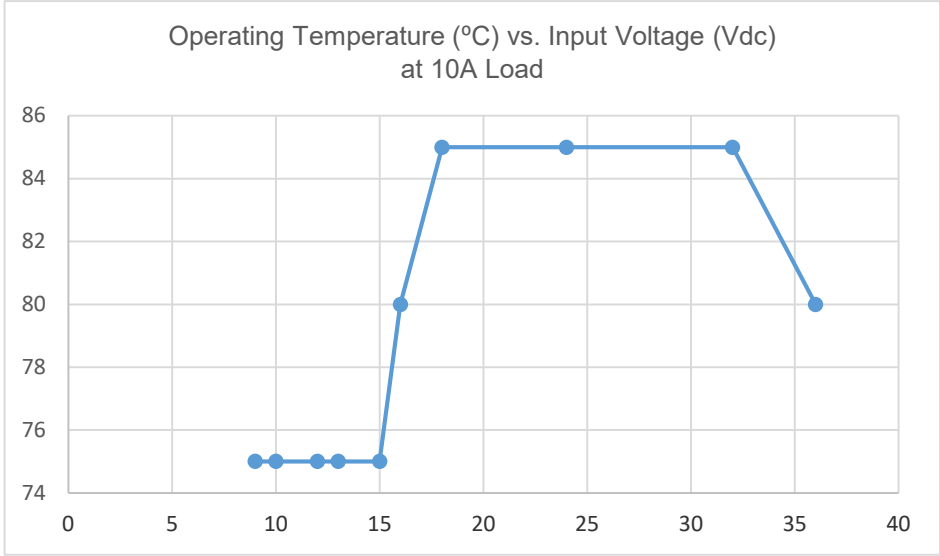


Figure 3.0. – Operating Temperature vs. Input Voltage at Full Load

Electrical Pinout	1 Connector (equivalent TE Deutsch P/N: DTP13-4P):									
	<table border="1"> <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: <b>AX070117</b>, 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: <b>AX070103</b>. 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
Pin #	Description									
1	Input +									
2	Input -									
3	Output -									
4	Output +									

Installation	<b>Set up</b>
	<ol style="list-style-type: none"> <li>1. A maximum 25A fuse is recommended in series with the 24V battery.</li> <li>2. Use four ¼-20 1 inch or M6 bolts screws to mount the converter.</li> <li>3. Ground the unit to chassis ground by attaching to the casing a ground strap.</li> <li>4. Snap the plug connector into the mating receptacle mounted on the converter.</li> <li>5. Connect the wiring to power and output terminal blocks (provided by customer).</li> <li>6. Once the load is ready to receive power, turn on the power source to the converter.</li> </ol>

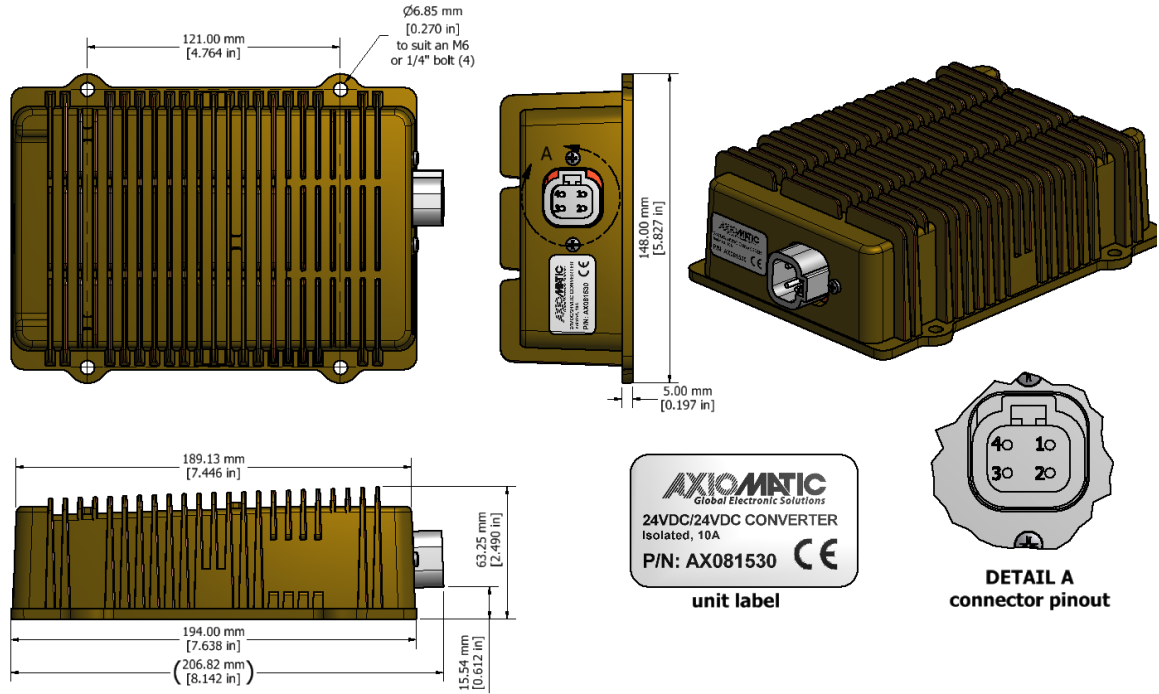


Figure 4. 0. – Dimensional Drawing

Form: TDAX081530-06/21/23