

## 12Vdc/25Vdc Converter

5.5-17Vdc Input  
25Vdc, 750W Output  
P/N: AX083800

*Rugged 25 Vdc power supply*

### Features:

- 12Vdc/25Vdc, 750 Watts
- Operates from 5.5Vdc-17Vdc (Output is derated for input < 9Vdc.)
- Typical efficiency of 95%
- 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 protection rating
- 2 TE Deutsch DTP13-4P connectors and 1 TE Deutsch DTP13-6P connector
- EMI/EMC compliant
- SAE J1455 and SAE J1113 compliant
- Suitable for engine cranking and load dump



**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

### Ordering Part Numbers:

12V/25V, 750W DC/DC Converter P/N: **AX083800**

Accessories:

Mating Wire Harness, 2 m: **AX070152, AX070153, AX070154**  
or Mating Plug Kit: **AX070117**

To purchase the DC/DC Converter and mating wire harness as a KIT (AX083800 converter, AX070152, AX070153 and AX070154 wire harnesses), the ordering P/N is **AX083800K**.

## Technical Specifications:

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

Input Specifications		Output Specifications	
Power Source	12 Vdc nominal	Nameplate Rating (Output Power)	750 VA nominal
Operating Voltage Range*	5.5 to 17 Vdc provides output regulated to 2% @ 30 A load  For input < 9V, refer to Figure 1.0.	Output Current (DC)	30 A continuous Derating current for input < 9Vdc Refer to Figure 1.0.
Maximum Input Current	90ADC @ 9Vdc	Output Voltage	25 Vdc $\pm$ 2% Refer to Figure 1.0.
Load Dump	Designed to meet 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 Vdc typical	Stability	Stable at all loads (no minimum load requirement)
Over-voltage Shutdown	18 Vdc typical	Transient Response	700 mV/1 ms (25%-75% Load)
		Short Circuit Current	Protection provided Self-recovery 35A current limit

## General Specifications

EMI and Environmental Compliance	Designed to meet the requirements of SAE J1455 and SAE J1113
Efficiency	95% (Refer to Figure 2.0.)
Enclosure	Cast Aluminum housing, integral gasket and connector 8.14 x 11.12 x 3.11 inches (206.00 x 282.00 x 79.00 mm) L x W x H including integral connectors Refer to the dimensional drawing, Figure 2.0.
Protection	IP67
Vibration	Pending MIL-STD-202G, Test 204D and 214A (Sine and Random) 10 g peak (Sine); 7.86 Grms peak (Random)
Shock	Pending MIL-STD-202G, Test 213B; 50 g
Weight	7.60 lb. (3.44 kg)
Temperature Rating	Operating: -40 to 70°C (-40 to 158°F) Storage: -50 to 90°C (-58 to 194°F)

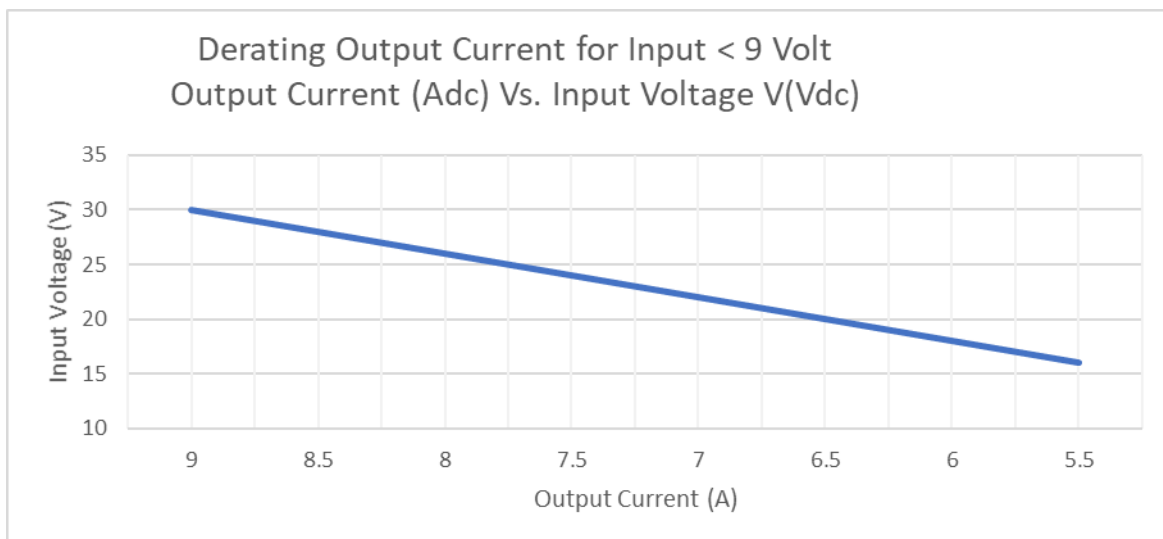
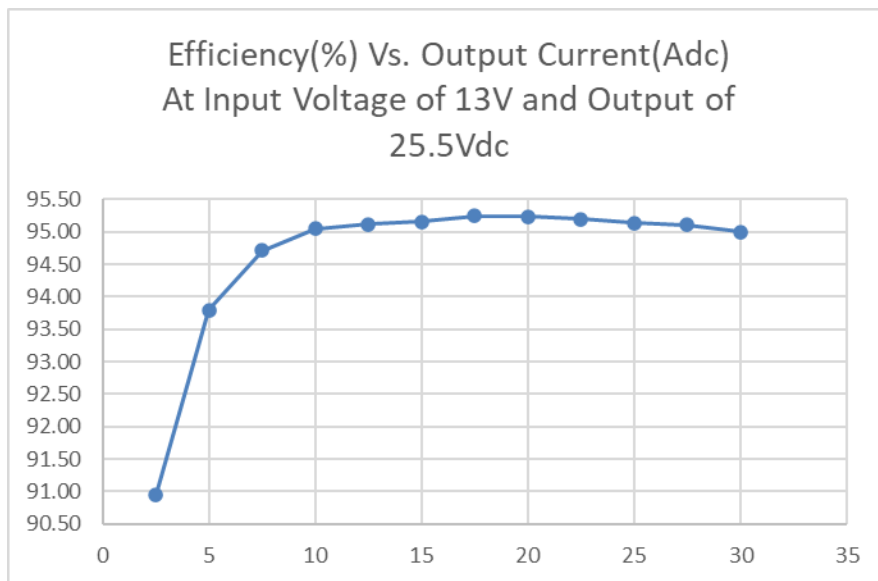
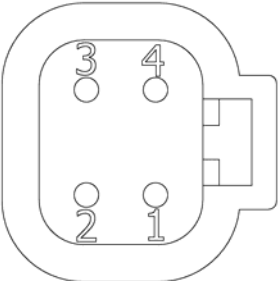
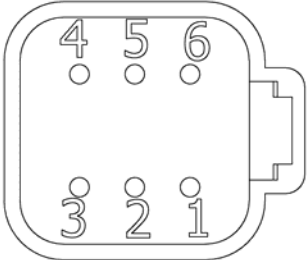


Figure 1.0. – Power Efficiency vs. Output Current



*Figure 2. 0. – Power Efficiency vs. Output Current*

Electrical Pinout		
		<p>4 pin TE Deutsch connector P/N: DTP13-4P <u>Connector Pin out:</u> Pin 1: Voltage Input+ Pin 2: Voltage Input+ Pin 3: Voltage Input+ Pin 4: Voltage Input+</p> <p>Suitable for 10 AWG wire</p>
		<p>4 pin TE Deutsch connector P/N: DTP13-4P <u>Connector Pin out:</u> Pin 1: Voltage Input - Pin 2: Voltage Input - Pin 3: Voltage Input - Pin 4: Voltage Input -</p> <p>Suitable for 10 AWG wire</p> <p>The pins are tied to Pins 4,5,6 on Voltage Output Connector.</p>
		<p>6 pin TE Deutsch connector P/N: DTP13-6P <u>Connector Pin out:</u> Pin 1: Voltage Output + Pin 2: Voltage Output + Pin 3: Voltage Output + Pin 4: Voltage Output - Pin 5: Voltage Output - Pin 6: Voltage Output -</p> <p>Suitable for 14 AWG wire</p>

Input Mating Wire Harnesses	<p>For the 4-pin RED Voltage Input + connector, a <b>mating plug assembly, P/N AX070152</b> is available and is comprised of Deutsch P/N: DTP06-4S, WP4S and four stamped and formed sockets 1062-12-0222 with 2m (6.5 ft.) of 10 AWG unterminated lead wires. Refer to Figure 5.0.</p> <p><b>P/N: AX070152</b></p> <p>It has the following wire colours and pin out.</p> <p>Pin# 1 RED Voltage Input +  Pin# 2 RED Voltage Input +  Pin# 3 RED Voltage Input +  Pin# 4 RED Voltage Input +</p> <p>For the 4-pin BLACK Voltage Input - connector, a <b>mating plug assembly, P/N AX070153</b> is available and is comprised of Deutsch P/N: DTP06-4S, WP4S and four stamped and formed sockets 1062-12-0222 with 2m (6.5 ft.) of 10 AWG unterminated lead wires. Refer to Figure 6.0.</p> <p><b>P/N: AX070153</b></p> <p>It has the following wire colours and pin out.</p> <p>Pin# 1 BLACK Voltage Input -  Pin# 2 BLACK Voltage Input -  Pin# 3 BLACK Voltage Input -  Pin# 4 BLACK Voltage Input -</p>
Output Mating Wire Harness	<p>For the 6-pin Output connector, a <b>mating plug assembly, P/N AX070154</b> is available and is comprised of Deutsch P/N: DTP06-6S, WP6S and six contact sockets 0462-201-16141 with 2m (6.5 ft.) of 14 AWG unterminated lead wires. Refer to Figure 7.0.</p> <p><b>P/N: AX070154</b></p> <p>It has the following wire colours and pin out.</p> <p>Pin# 1 RED Voltage Output +  Pin# 2 RED Voltage Output +  Pin# 3 RED Voltage Output +  Pin# 4 BLACK Voltage Output -  Pin# 5 BLACK Voltage Output -  Pin# 6 BLACK Voltage Output -</p>
Installation	<p><b>Set up</b></p> <ol style="list-style-type: none"> <li>1. A 110A fuse is recommended in series with the 12V battery (input).</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>

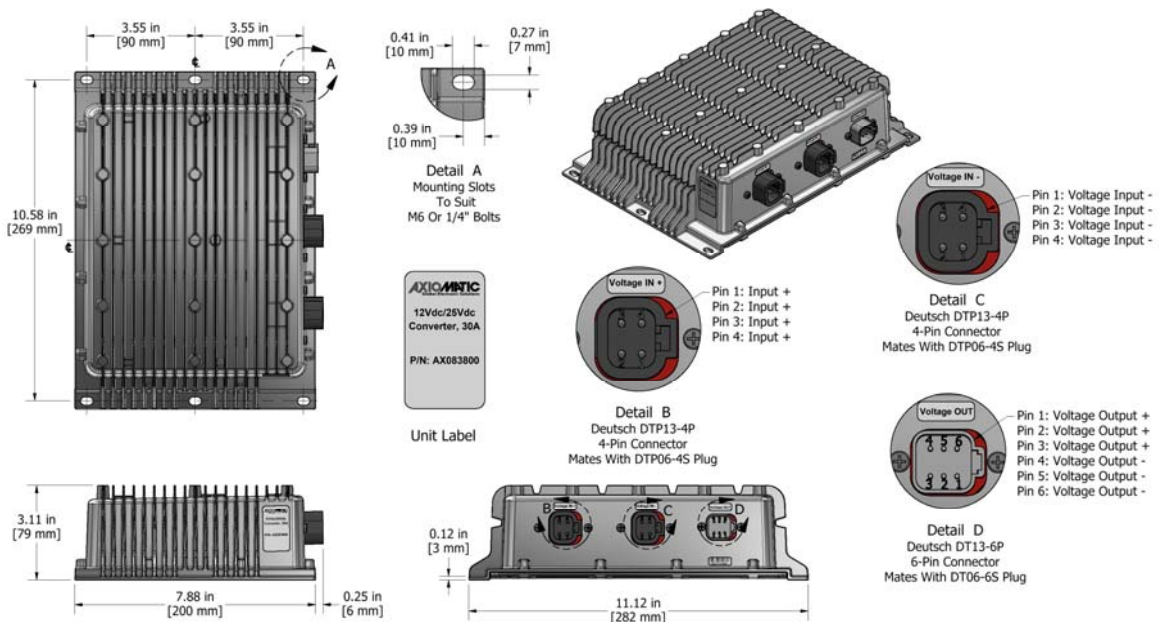


Figure 4. 0. – Dimensional Drawing of AX083800 Converter

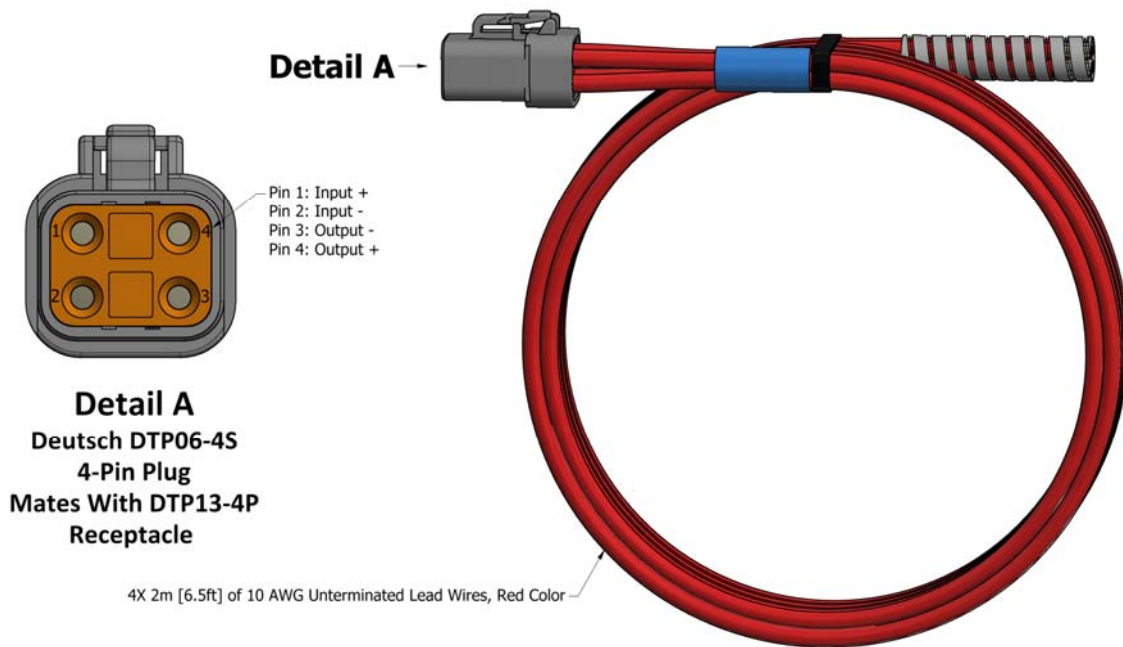


Figure 5.0 – Drawing of Wire Harness AX070152

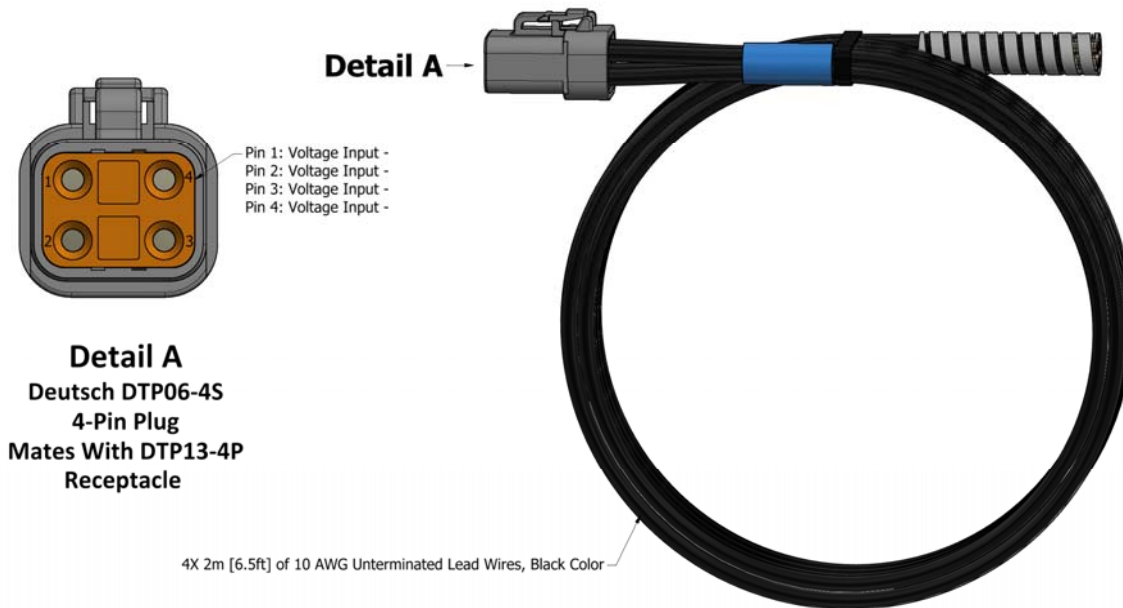


Figure 6.0 – Drawing of Wire Harness AX070153

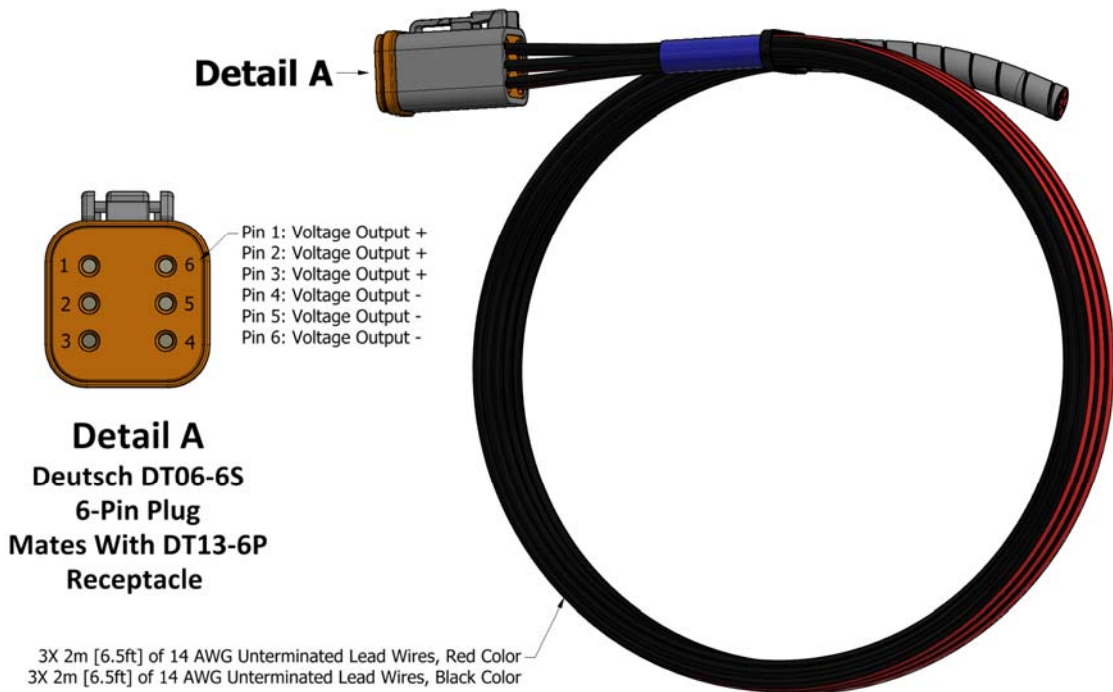


Figure 7.0 – Drawing of Wire Harness AX070154

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/>.

Form: TDAX083800-03/17/22