

TECHNICAL DATASHEET #TDAX081520  
**Isolated 48VDC/24VDC Converter**  
48VDC/24VDC, 312W  
P/N: AX081520

Power stepped down from 48VDC to 24 VDC for electronic control systems on vehicles, telecom equipment and in other harsh operating environments

**Features:**

- 48VDC/24VDC, 312 Watts
- Isolated
- Can connect to -48VDC input
- Typical efficiency of 93%
- 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
- IP67
- EMI/EMC compliant
- CE / UKCA marking
- 1 connector (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)
- 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
- Telecom

**Ordering Part Numbers:**

48V/24V, Isolated DC/DC Converter P/N: **AX081520**

Accessories:

Mating Wire Harness, 2 m: **AX070103**

Mating Plug Kit: **AX070117** (For details, refer to the General Specifications below)

To purchase the DC/DC Converter and mating wire harness as a KIT (AX081520 converter, AX070103 wire harness), the ordering P/N is **AX081520K**.

## Technical Specifications:

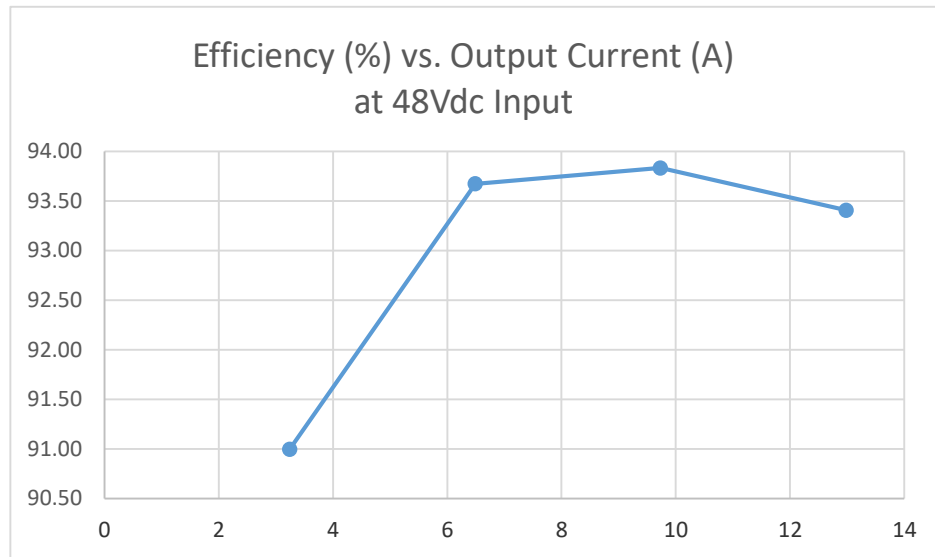
Specifications are indicative and subject to change. Actual performance will vary depending on the application and operating conditions. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Limitations & 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.

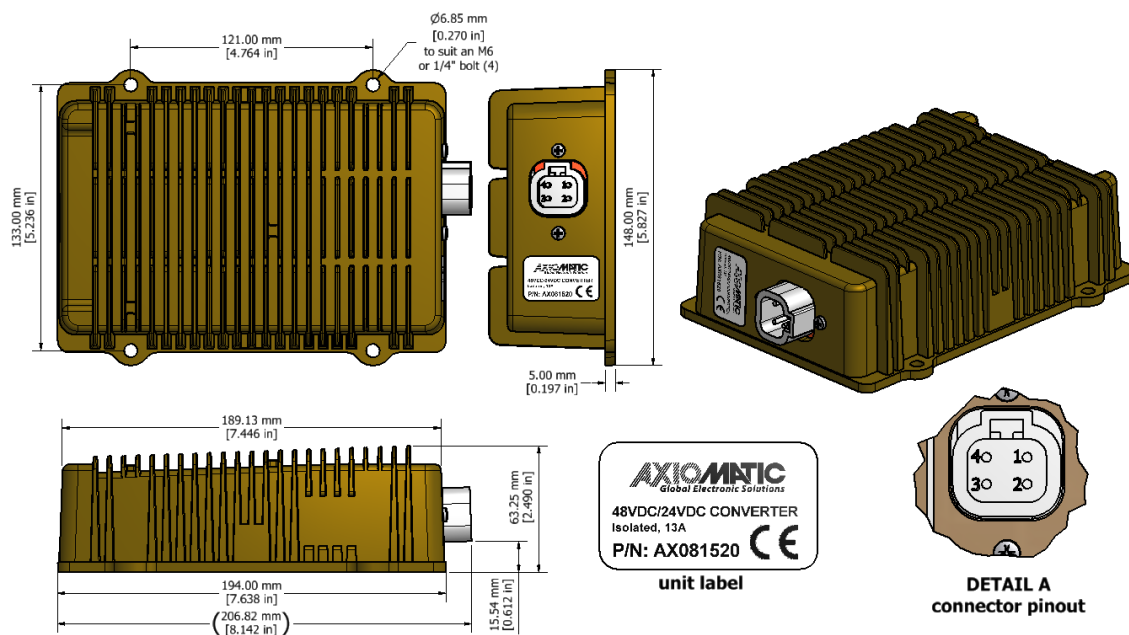
Input Specifications		Output Specifications	
Power Source	48 VDC nominal	Nameplate Rating (Output Power)	312 VA nominal
Operating Voltage Range	36 to 72 VDC	Output Current (DC)	13 A continuous
Maximum Input Current	10ADC @ 36VDC	Output Voltage	24 VDC $\pm$ 4%
Reverse Voltage Protection	Provided	Output Voltage Ripple	$V_{O(RIPPLE)} \leq 100$ mVpp
Under-voltage Shutdown	30 VDC typical	Turn-on time (at full load)	900 ms typical
Over-voltage Shutdown	75 VDC typical	Stability	Stable at all loads (no minimum load requirement)
		Transient Response	250 mV/2 ms (25%-75% Load)
		Short Circuit Current	Protection provided Self-recovery 16A current limit

## General Specifications

Approvals	CE / UKCA marking										
Efficiency	93% Refer to Figure 1.0.										
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 connectors Refer to the dimensional drawing, Figure 2.0.										
Protection	IP67										
Weight	4.20 lb. (1.9 kg)										
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 50g										
Temperature Rating	Operating: -40 to 85°C (-40 to 185°F) Storage: -50 to 90°C (-58 to 194°F)										
Electrical Pinout	<p>Connector -TE Deutsch P/N: DTP13-4P</p> <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>For use with -48VDC input, connect Input + to 0V and Input - to -48VDC. The output will be +24V.</p> <p>A mating plug assembly, P/N: <b>AX070117</b>, is available and is comprised of the following TE Deutsch P/N: 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	Output +
Pin #	Description										
1	Input +										
2	Input -										
3	Output -										
4	Output +										



*Figure 1.0 Efficiency vs. Output Current*



*Figure 2. 0. – Dimensional Drawing AX081520*

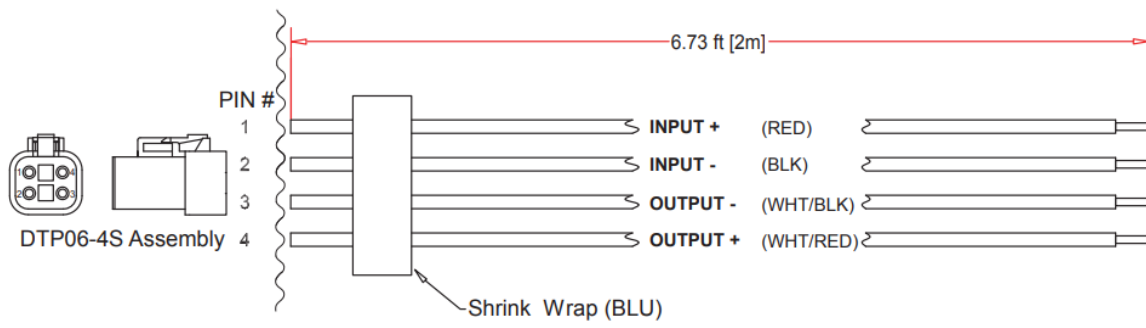


Figure 3.0. – Wire Harness AX070103

Form: TDAX081520-09/11/2025