

## Isolated 15/60V to 24Vdc Converter

24V, 36V or 48Vdc Nominal Input

Enable Input

24Vdc Output, 240W

P/N: AX083204

### Features:

- 24V, 36V or 48Vdc nominal input
- Wide input voltage range (15V to 60V, some derating of output regulation for input less than 21V)
- 24Vdc, 240 Watts output
- Isolated
- Enable signal
- Typical efficiency of 92%
- 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 with some derating
- 1 6-pin connector (Molex P/N: 19435-0611)
- 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
- EMI/EMC compliant
- Suitable for high vibration, high shock environments
- IP67 protection



### Applications:

- Industrial Equipment
- Mobile or Construction Equipment
- Robotic Machine Control

### Ordering Part Numbers:

(15-60)/24V, 240W, Isolated DC/DC Converter

- With 5V-24Vdc Enable, Isolated P/N: **AX083204**

Accessories: Mating Wire Harness for Model AX083204, 2 m: **AX070131**

To purchase the DC/DC Converter and mating wire harness as a KIT (converter plus wire harness), add a **K** to the ordering P/N. For example, ordering P/N **AX083204K** is a KIT of AX083204 and AX070131.

## 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	24Vdc or 36Vdc or 48Vdc nominal	Nameplate Rating (Output Power)	240 VA nominal
Operating Voltage Range	15V to 60Vdc See figure 1.0 for input less than 21V	Output Current (DC)	10 A continuous
Maximum Input Current	5.6ADC @ 48Vdc 7.4ADC @ 36Vdc 11ADC @ 24Vdc 12.5ADC @ 22Vdc	Output Voltage	24 Vdc $\pm$ 3% Refer to Figure 1.0 for derating curve.
Reverse Voltage Protection	Provided	Output Voltage Ripple	$V_{O(RIPPLE)} \leq 100$ mVpp
Under-voltage Shutdown	Turn on 22Vdc typical Turn off 13Vdc typical	Turn-on time (at full load)	700 ms typical
Over-voltage Shutdown	Turn on 65Vdc typical Recover at 61Vdc typical	Stability	Stable at all loads (no minimum load requirement)
Enable Input – Model AX083204	Isolated to primary and secondary Working Range: 5V to 24V, High to Turn On the Unit. Current requirement is 2 mA typically.	Transient Response	250 mV/1 ms (25%-75% Load)
		Short Circuit Current	Protection provided Self-recovery 13A current limit

## General Specifications

EMI and Environmental Compliance	Designed to meet the requirements of SAE J1455 and SAE J1113 Designed to meet EN50155
Efficiency	92%
Isolation	700 Vdc minimum, All To Chasis 700 Vdc minimum, Primary To Secondary
Enclosure	Cast Aluminum housing, integral gasket and connector 8.25 x 5.83 x 2.49 inches (209.49 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) 7.85 Grms peak (Random)
Shock	MIL-STD-202G, Test 213B 50g
Weight	4.80 lb. (2.18 kg)
Temperature Rating	Operating: -40 to 85°C (-40 to 185°F), Storage: -50 to 90°C (-58 to 194°F) Some derating at less than 36Vdc. Refer to Figure 2.0.

Electrical Pinout	Connector: 1 6-pin Molex P/N: 19435-0611  <table border="1" data-bbox="818 233 1114 451"> <thead> <tr> <th>Pin #</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Output -</td> </tr> <tr> <td>2</td> <td>Enable -</td> </tr> <tr> <td>3</td> <td>Input -</td> </tr> <tr> <td>4</td> <td>Output +</td> </tr> <tr> <td>5</td> <td>Enable +</td> </tr> <tr> <td>6</td> <td>Input +</td> </tr> </tbody> </table>	Pin #	Description	1	Output -	2	Enable -	3	Input -	4	Output +	5	Enable +	6	Input +
Pin #	Description														
1	Output -														
2	Enable -														
3	Input -														
4	Output +														
5	Enable +														
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Mating Wire Harness – Model AX083204	A mating plug, Molex P/N: 19418-0010 with 6 pins (Molex P/N: 19420-009) and 2 m wire harness with unterminated leads is available as P/N: <b>AX070131</b> .  It has the following 14AWG wire colours and pin out. Pin# 1 White/Black Output- Pin# 2 Green Enable - Pin# 3 Black Batt- Pin# 4 White/Red Output+ Pin# 5 Blue Enable + Pin# 6 Red Batt+														

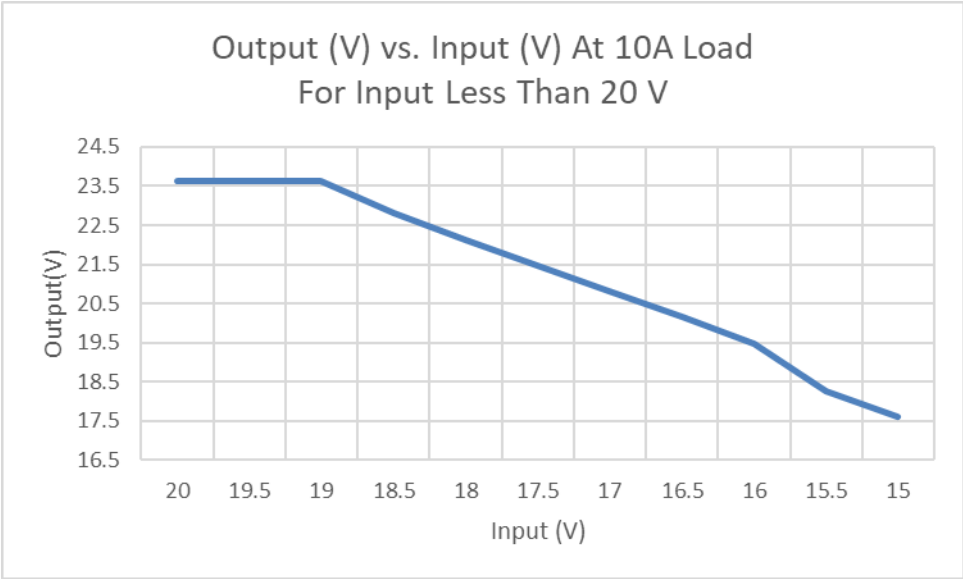


Figure 1.0 – Output Voltage vs. Input Voltage at 10A Load and Input less than 20V

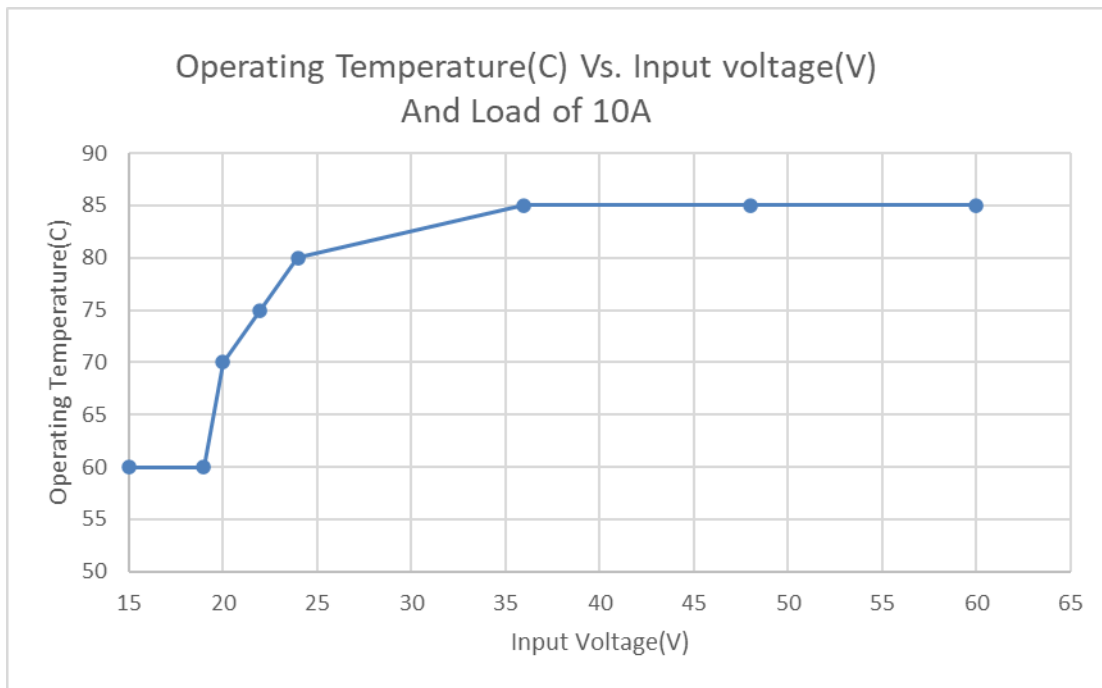


Figure 2.0 – Operating Temperature vs. Input Voltage at 10A Load and Input less than 36V

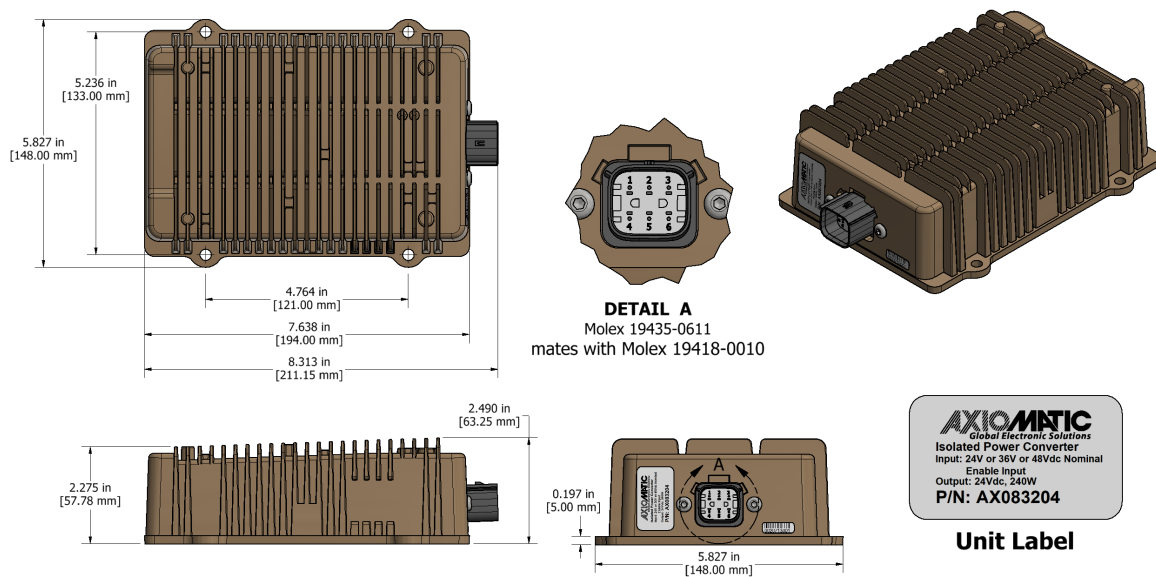


Figure 3.0 – Dimensional Drawing

Form: TDAX083204-06/22/23