

Isolated 72Vdc/36Vdc Converter

72Vdc Nominal Input

36Vdc Output, 240W

P/N: AX083203

Isolated and rugged 36 Vdc power for battery powered electronic control systems on rail equipment

Features:

- 72Vdc nominal input
- 36Vdc, 240 Watts output (360W for 100 mS)
- Isolated
- 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 75 °C (-40 to 167 °F) operating temperature
- 1 6-pin connector (Molex P/N: 19435-0611)
- 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:

- Railway Equipment

Ordering Part Numbers:

72V/36V, 240W, Isolated DC/DC Converter P/N: **AX083203**

Accessories:

Mating Wire Harness, 2 m: **AX070130**

To purchase the DC/DC Converter and mating wire harness as a KIT (AX083203 converter, AX070130 wire harness), the ordering P/N is **AX083203K**.

Technical Specifications:

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

Input Specifications		Output Specifications	
Power Source	72Vdc nominal	Nameplate Rating (Output Power)	240 VA nominal
Operating Voltage Range	45V to 90Vdc, Output derating for input less than 45Vdc	Output Current (DC)	6.7 A continuous 10 A for 100 ms
Maximum Input Current	4ADC @ 72Vdc	Output Voltage	36Vdc \pm 3%
Reverse Voltage Protection	Provided	Output Voltage Ripple	$V_{O(RIPPLE)} \leq 100$ mVpp
Under-voltage Shutdown Turn On Turn Off	30Vdc typical 19Vdc typical	Turn-on time (at full load)	800 ms typical
Over-voltage Shutdown	100Vdc typical	Stability	Stable at all loads (no minimum load requirement)
		Transient Response	250 mV/1 ms (25%-75% Load)
		Short Circuit Current	Protection provided Self-recovery 9A current limit

General Specifications

Approvals	Pending														
EMI and Environmental Compliance	Designed to meet the requirements of SAE J1455 and SAE J1113 Designed to meet EN50155														
Efficiency	92% (Refer to Figure 1.0.)														
Isolation	1000 Vdc minimum, All To Chassis 1500 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 2.0.														
Protection	IP67														
Vibration	Designed to meet EN61373														
Shock	Designed to meet EN61373														
Weight	4.193 lb. (1.902 kg)														
Temperature Rating	Operating: -40 to 75°C (-40 to 167°F) Storage: -50 to 90°C (-58 to 194°F)														
Electrical Pinout	<p>Connector: 1 6-pin Molex P/N: 19435-0611</p> <table border="1"> <thead> <tr> <th>Pin #</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1</td><td>Output -</td></tr> <tr> <td>2</td><td>Not Used</td></tr> <tr> <td>3</td><td>Input -</td></tr> <tr> <td>4</td><td>Output +</td></tr> <tr> <td>5</td><td>Not Used</td></tr> <tr> <td>6</td><td>Input +</td></tr> </tbody> </table> <p>A mating plug, Molex P/N: 19418-0021 with 6 pins (Molex P/N: 19420-004) and 2 m wire harness with unterminated leads is available as P/N: AX070130.</p> <p>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+</p>	Pin #	Description	1	Output -	2	Not Used	3	Input -	4	Output +	5	Not Used	6	Input +
Pin #	Description														
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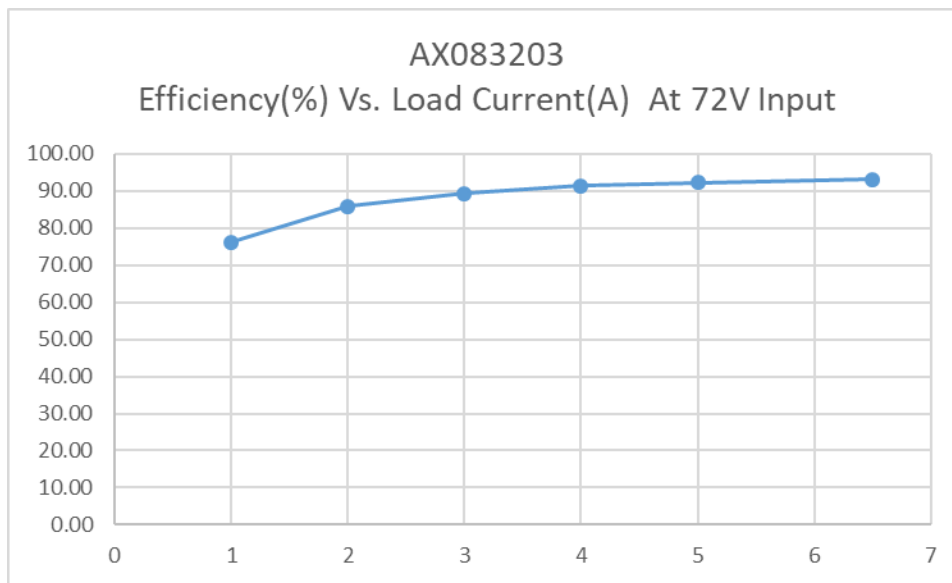


Figure 1.0 - Efficiency vs. Output Current

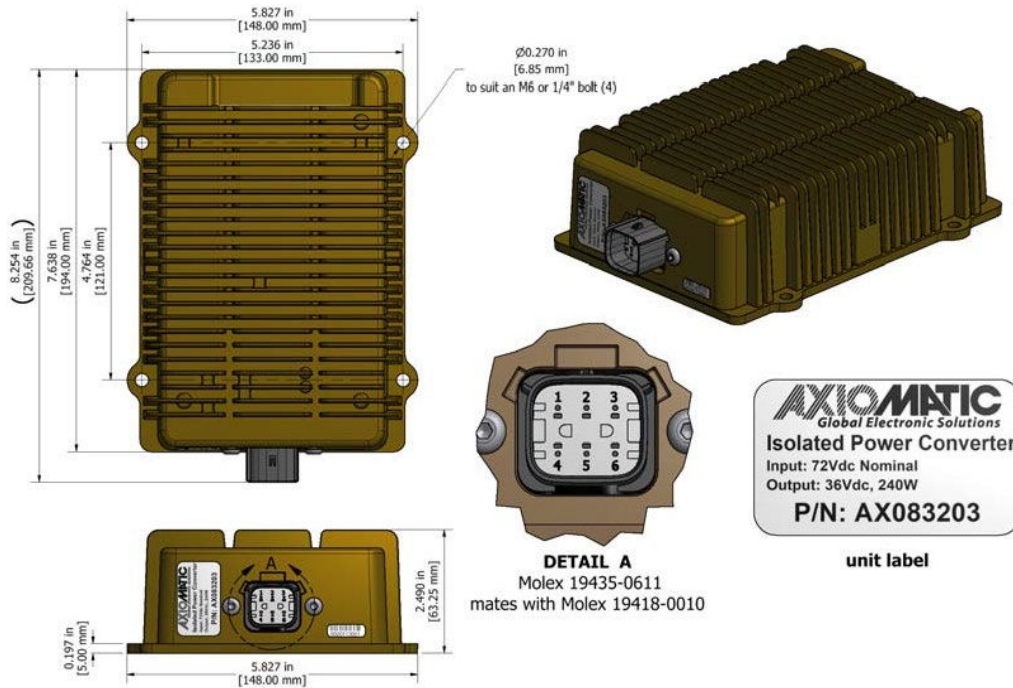


Figure 2.0 – Dimensional Drawing

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: TDAX083203-06/22/23