

## 12/24VDC to 24VDC Converter, 60W, Isolated

*5 to 36 VDC Input  
24 VDC, 60 W Output  
P/N: AX083160*

### Features

- 12/24 VDC input operating voltage (range from 5 to 36 VDC)
- Regulated output of 24 VDC @ 2.7 %, 2.5 A (60 W)
- No minimum load requirement
- Switch mode operation delivers high efficiency
- Reverse polarity protection
- Withstands engine cranking
- Outputs voltage during load dump
- Inrush current control
- Input and output isolation
- Connects via a 4-pin plug
- Compact size for ease of mounting in confined spaces
- Suitable for high shock and vibration environments
- Operational from -40 to 75 °C (-40 to 158 °F)
- Rugged and highly reliable
- IP67 protection rating
- EMI/EMC compliant with CE / UKCA marking
- Designed for SAE J1455 and SAE J1113 compliance (including load dump and cranking transients)
- Parallel, redundant capability



### Applications

- Power radio equipment
- Charging/cranking battery based power supply systems
- Power conditioning for controls & instrumentation
- Off-highway equipment control systems

### Ordering Part Numbers

12/24VDC to 24VDC Converter, 60W, Isolated – P/N: **AX083160**

Individual Accessories:

Mating Wire Harness, 2 m – P/N: **AX070155**

Complete KIT:

Converter with the Wire Harness – P/N: **AX083160K**

(includes 12/24 VDC to 24 VDC Converter AX083160 and 2 m Wire Harness AX070155)

## Description

The AX083160 DC-DC Converter provides regulated 24 VDC power suitable for instrumentation and controls operating in a battery powered system. For operation under the most harsh and demanding conditions, the unit is fully sealed and enclosed to protect against moisture, shock and vibration. Power from a battery or other source in the range of 5 to 36 VDC is converted to a 24 VDC output regulated to 2.7 % and 2.5 A continuous current. Input and output isolation is provided. The unit is designed with extremely rugged surge and transient suppression in addition to sustained over and under voltage protection as well as inrush current control. With a nameplate rating of 60 W of output power, this Converter has an efficiency rated at 87 %.

## 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 °C unless otherwise specified.*

### Input

Operating Voltage	12 or 24 VDC nominal (5 to 36 VDC continuous) Starts up @ 9 VDC
Maximum Input Current	<8 ADC @ 9 VDC
Reverse Voltage Protection	Provided
Load Dump	Withstands load dump up to 100 VDC
Undervoltage Shutdown	Shuts off: 4 to 4.8 VDC Turns on: 7.5 to 9 VDC

### Output

Nameplate Rating (Output Power)	60 W nominal
Output Current	2.5 A continuous
Output Voltage	24 VDC @ 2.7%
Output Voltage Ripple	150 mV
Turn-On Time (at Full Load)	350 ms @ 9 VDC input 250 ms @ 24 VDC input 250 ms @ 60 VDC input
Stability	Stable at all loads (no minimum load requirement)
Transient Response	No OVS, No UVS @ any input, 1.25 A to 2.5 A 32 mV OVS, No UVS @ any input, 0.2 A to 2.5 A
Short Circuit Current	Protection provided Self-recovery 3.1 to 3.7 A current limit

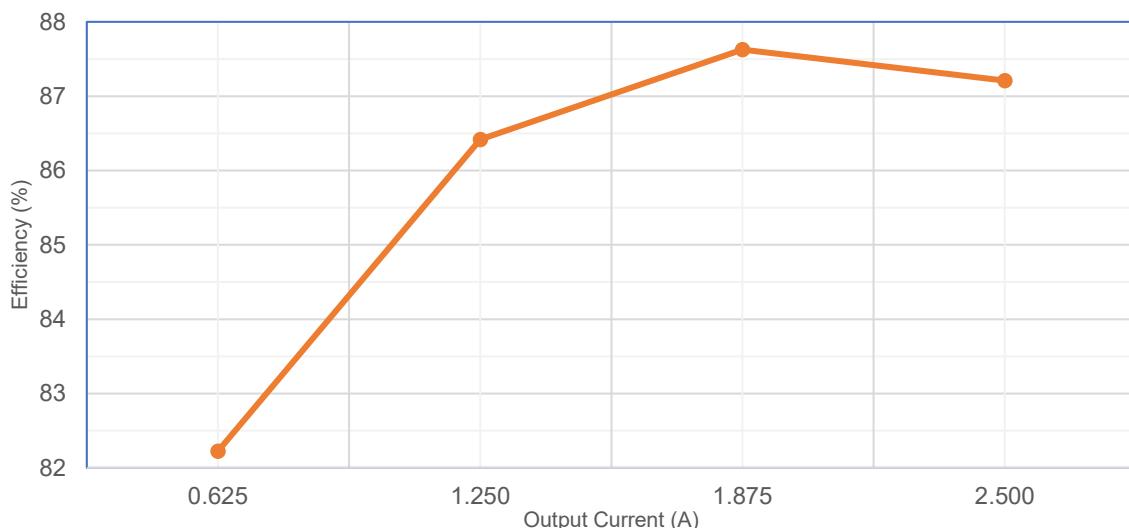


Figure 1 – Efficiency (%) vs. Output (ADC)

## General Specifications

Efficiency	87 % @ 12 VDC (at full load) See Figure 1.															
Isolation	Isolated from input, output, and chassis ground 700 VDC between primary and secondary															
Paralleling	The converters can be configured in parallel for current sharing or redundancy.															
EMI/EMC	Designed for SAE J1455 and SAE J1113 compliance (including load dump and cranking transients for 12 VDC systems)  Pending ISO 7637-2 Conducted Transients for 12 VDC systems  Pending ISO 10605 ESD Horizontal coupling Pending EN61000-4-2 ESD Vertical coupling ( $\pm 4$ kV, $\pm 6$ kV and $\pm 8$ kV for direct contact and $\pm 8$ kV and $\pm 15$ kV for air discharge)															
Protection	IP67															
Operating Temperature	-40 to 85 °C (-40 to 185 °F) -40 to 75 °C (-40 to 167 °F) at < 8 VDC input															
Storage Temperature	-50 to 85 °C (-58 to 185 °F)															
Humidity	0 to 99 % relative humidity (non-condensing)															
Vibration	Pending MIL-STD-202G, Method 204D test condition C (Sine) and Method 214A, test condition B (Random) 10 g peak (Sine) 7.68 Grms peak (Random)															
Shock	Pending MIL- STD-202G, Method 213B, test condition A 50g (half sine pulse, 9ms long, 8 per axis)															
Enclosure	Anodized Aluminum enclosure Encapsulated 3.76 in. x 6.097 in. x 1.929 in. (95.52 mm x 154.87 mm x 49 mm) W x L x H includes the integral connector See Figure 2.															
Weight	Prototype: 2.02 lb. (0.9164 kg) Production: 1.85 lb. (0.839 kg) excluding mating harness <b>Preliminary</b> 2.26 lb. (1.025 kg) with mating wire harness															
Electrical Pinout	Integral 4-pin TE Deutsch connector – P/N: <b>DT15-4P</b> Suitable Wire: 14 AWG <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>Output -</td> </tr> <tr> <td>3</td> <td>Power -</td> </tr> <tr> <td>4</td> <td>Power +</td> </tr> </tbody> </table>	Pin	Description	1	Output +	2	Output -	3	Power -	4	Power +					
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Mating Wire Harness	A wire harness to mate with connector DT15-4P is available under Axiomatic P/N: <b>AX070155</b> (includes DT06-4S, W4S, 4x 0462-209-16141 contacts, and a 2 m (6.5 ft.) of 14 AWG unterminated lead wires.)  It has the following wire colors and pin out. <table border="1"> <thead> <tr> <th>Pin</th> <th>Description</th> <th>Color</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Output +</td> <td>Red / White</td> </tr> <tr> <td>2</td> <td>Output -</td> <td>Black / White</td> </tr> <tr> <td>3</td> <td>Power -</td> <td>Black</td> </tr> <tr> <td>4</td> <td>Power +</td> <td>Red</td> </tr> </tbody> </table>	Pin	Description	Color	1	Output +	Red / White	2	Output -	Black / White	3	Power -	Black	4	Power +	Red
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## Dimensional Drawing

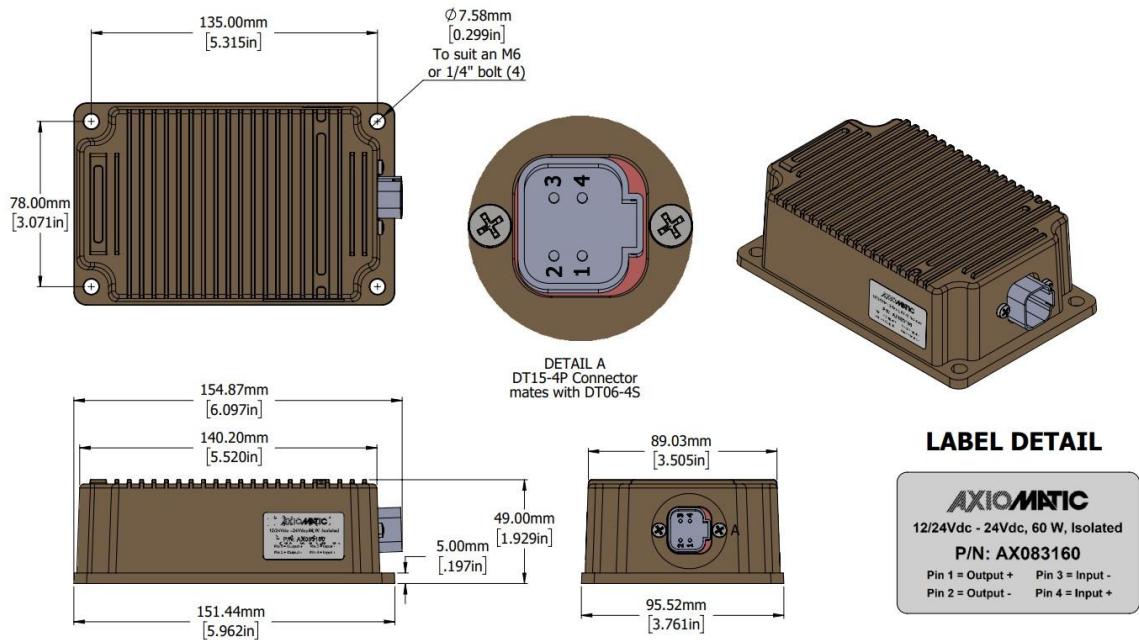


Figure 2 – Dimensional Drawing

Form: TDAX083160 – 01/13/2026