**Preliminary**
**TECHNICAL DATASHEET #TDAX081542**

# Isolated 12VDC / 24VDC, 7A Converter

***12 Vdc Input***
***24 Vdc, 170 W Output***
**P/N: AX081542**

## Features

- 12Vdc/24Vdc, 170 Watts
- Operates from 6 Vdc to 17 Vdc
- Isolated
- Can connect to -12 Vdc input
- Typical efficiency of 90%
- Input inrush current limit
- Reverse battery protection
- Over & under-voltage protection
- Short circuit and overcurrent protection
- Thermal protection for over temperature
- -40 to 85°C (-40 to 185°F) operating temperature range
- IP67 protection rating
- EMI / EMC compliant
- CE / UKCA marking
- 1 TE Deutsch DT13-4P connector
- Compact: 8.142 in x 5.827 in x 2.490 in (206.62 mm x 148.00 mm x 63.25 mm)
- Suitable for engine cranking and load dump
- Can be used in a current sharing configuration
- Redundancy for parallel application


## Applications

- Charging/cranking battery based systems
- Off-highway equipment
- Power generator set control systems
- Oilfield equipment
- Telecom

## Ordering Part Numbers

Isolated 12VDC/24VDC, 7A Converter, P/N: **AX081542**

Accessories:
Mating Plug KIT, P/N: **AX070117**
Mating Wire Harnes, 2m, P/N: **AX070115**

To purchase the DC/DC converter and the mating wire harness as a KIT, the ordering P/N is **AX081542K**.

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# 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 Approvals/Limitations and 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.*

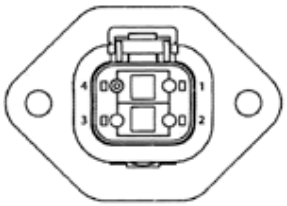
## Input

| | |
|---|---|
| Power Source | 12 Vdc nominal |
| Operating Voltage Range | 6 to 17 Vdc provides output<br>Start-up typical: 8.5 V<br>Current derating for input < 7 V (See Figure 1.0) |
| Maximum Input Current | 30 Adc @ 6 Vdc input |
| Reverse Voltage Protection | Provided |
| Under-voltage Shutdown | 5.5 Vdc typical |
| Over-voltage Shutdown | 18.5 Vdc typical |

## Output

| | |
|---|---|
| Nameplate Rating (Output Power) | 170 VA nominal |
| Output Current | 7 Adc continuous |
| Output Voltage | 24 Vdc ± 3% |
| Output Voltage Ripple | $V_{O(RIPPLE)} \leq$ 100 mVpp |
| Turn-on time (at full load) | 900 ms typical |
| Stability | Stable at all loads (no minimum load requirement) |
| Transient Response | 250mV/2ms (25%-75% Load) |
| Short Circuit Current | Protection provided<br>Self-recovery<br>9 A current limit |

## General Specifications

| | |
|---|---|
| Approvals | CE / UKCA marking |
| Efficiency | 90% (See Figure 2.0) |
| Isolation | 707 Vdc minimum |
| Compliance | RoHS |
| Weight | 4.15 lb. (1.88 kg) |
| Operating Temperature | -40 to 85°C (-40 to 185°F) |
| Storage Temperature | -50 to 90°C (-58 to 194°F) |
| Enclosure | Cast Aluminum enclosure, integral gasket and connector<br>8.142 in x 5.827 in x 2.490 in (206.62 mm x 148.00 mm x 63.25 mm)<br>L x W x H including integral connectors<br>Refer to the dimensional drawing. |
| Protection | IP67 |
| Vibration | Pending |
| Shock | Pending |
| Electrical Pinout | 4-pin TE Deutsch connector, P/N: DTP13-4P<br><br>Mating plug kit P/N: **AX070117** (includes 1 socket DT06-4S, 1 wedgelock WP4S, and 4 contacts 0462-201-16141)<br><br>Suitable wire: 10 AWG<br><br>**Pin** / **Description**<br>1 – Input +<br>2 – Input -<br>3 – Output -<br>4 – Output +<br><br>  |
| Output Mating Wire Harness | Input harness to mate with connector DTP13-4P, P/N: **AX070115** (with 2m (6.5 ft.) of 10 AWG unterminated lead wires.)<br><br>It has the following wire colors and pin out.<br>**Pin** / **Description** / **Color**<br>1 – Input + – RED<br>2 – Input - – BLACK<br>3 – Output - – WHITE/BLACK<br>4 – Output + – WHITE/RED |

| | |
|---|---|
| Installation | 1. A 25 A fuse is recommended in series with the input source.<br>2. Use four ¼-20 1 inch or M6 bolts screws to mount the converter.<br>3. Ground the unit to chassis ground by attaching to the casing a ground strap.<br>4. Snap the plug connector into the mating receptacle mounted on the converter.<br>5. Connect the wiring to power and output terminal blocks (provided by customer).<br>6. Once the load is ready to receive power, turn on the power source to the converter. |

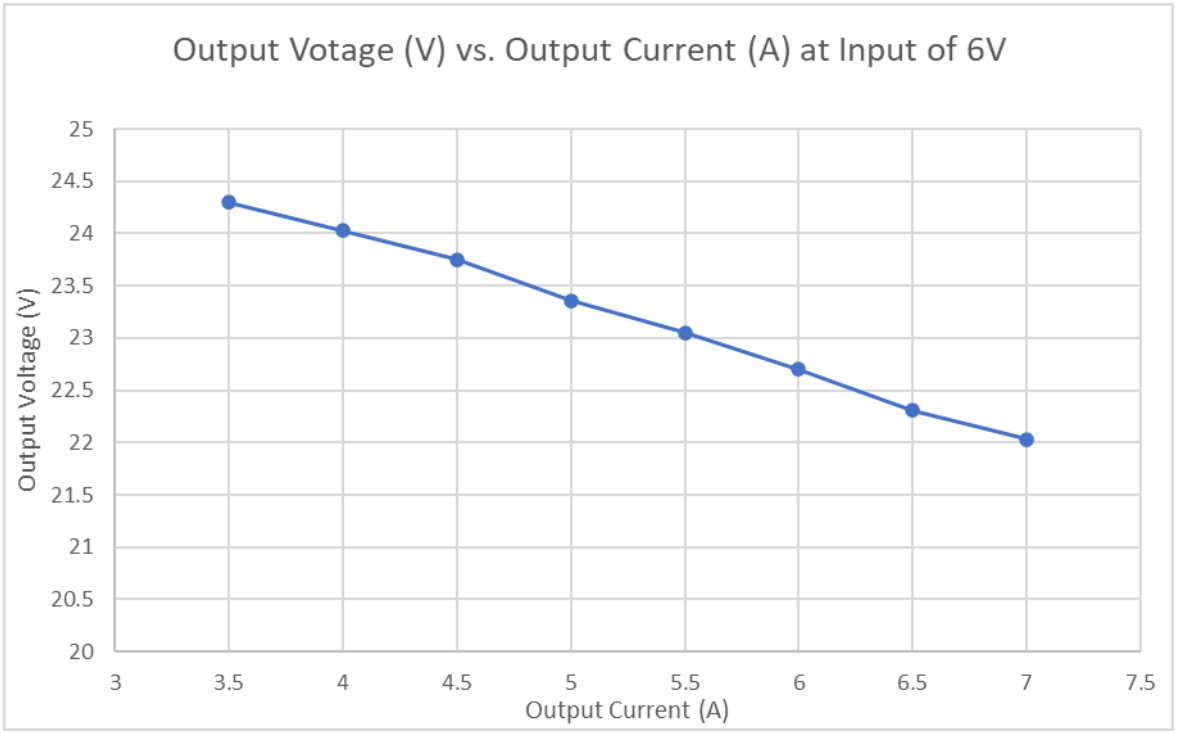



*Figure 1.0 Output Voltage vs. Output Current for Input at 6V*

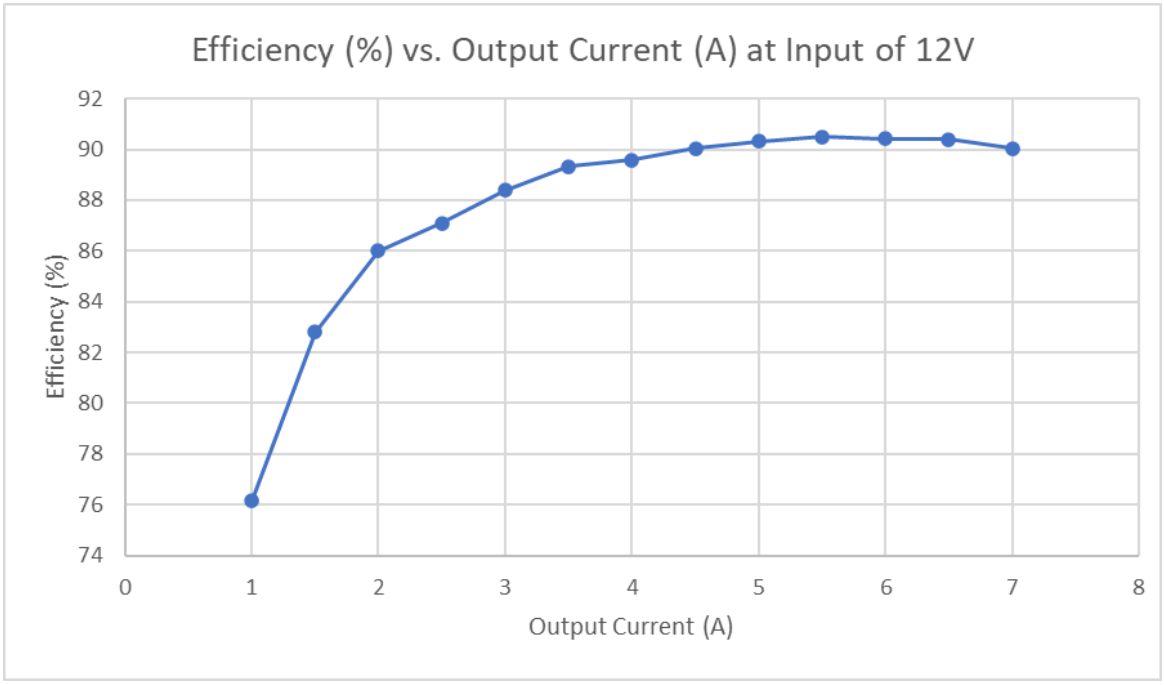



*Figure 2.0 Efficiency vs. Output Current*

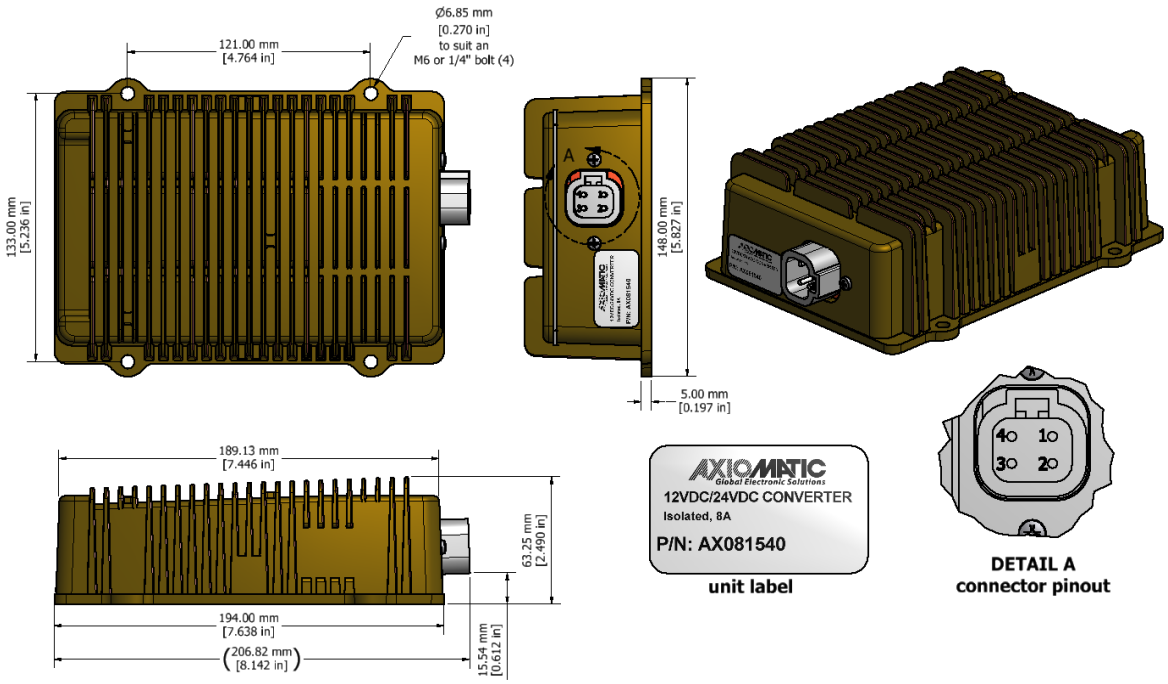



*Figure 3.0 Dimensional Drawing*
*(AX081542 has same external dimensions and structure as AX081540)*

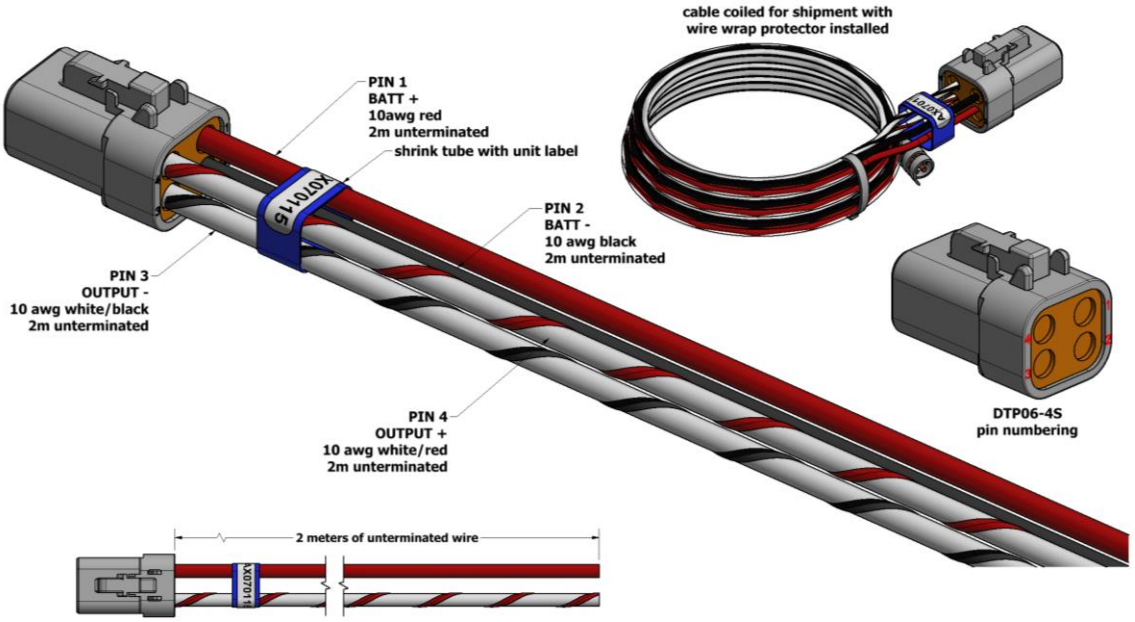



*Figure 4.0 Drawing of Wire Harness AX070115*

Form: TDAX081542-03/11/2024