Preliminary
TECHNICAL DATASHEET #TDAX083600

# Isolated, 600Vdc (or 480Vac) Power Supply

**600Vdc Input or 480Vac, 3 Phase Input**
**24Vdc, 1200W Output**
**P/N: AX083600**

*Rugged,Isolated Power Supply*

## Features:

- 600Vdc Input (operates from 540 - 720Vdc)
- 480Vac, 3 Phase Input (operates from 430 - 530Vac)
- 24Vdc, 1200 Watts Output
- Isolated
- CAN port (SAE J1939 or CANopen) - on request
- Typical efficiency of 90%
- Input inrush current limit
- Thermal protection for over temperature
- Reverse battery, over and under-voltage protection
- Short circuit and overcurrent protection
- -40 to 70°C (-40 to 158°F) operating temperature
- IP67
- 1 TE Deutsch DT13-12P output connector, 1 Molex MOL 19435-0611 input connector
- EMI/EMC compliant
  Redundancy for parallel application

## Applications:

## WARNING: High Power Device – Use certified electricians for installation.

The DC/DC converter is suitable for application on charging/cranking battery based systems.

- ❖ Railway Equipment
- ❖ Electric Vehicles
- ❖ Mining Equipment

PRELIMINARY

## Ordering Part Numbers:

600Vdc (or 480Vac) to 24Vdc Power Supply. Isolated P/N: **AX083600**

*A model with a CAN port is available on request. Contact Axiomatic for an ordering part number.*

Accessories:
Input Mating Wire Harness, 2 m: **AX070143**
Output Mating Wire Harness, 2 m: **AX070144**

To purchase the power supply and two mating wire harnesses as a KIT (AX083600 power supply, input and output wire harnesses), the ordering P/N is **AX083600K.**

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**www.axiomatic.com**

## 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 www.axiomatic.com/service.html.*

| Input Specifications | |
|---|---|
| Power Source | 600Vdc nominal<br>or 480Vac nominal |
| Operating Voltage Range | 540 – 720 Vdc<br>or 430 – 530 Vac, 3 Phase |
| Maximum Input Current | 2.5Adc @ 600Vdc<br>5Aac @ 430Vac |
| Under-voltage Shutdown | 300Vdc typical<br>350Vac typical |

| Output Specifications | |
|---|---|
| Nameplate Rating (Output Power) | 1200 VA nominal |
| Output Current (DC) | 50 A continuous |
| Output Voltage | 24 Vdc ± 3% |
| Output Voltage Ripple | $V_{O(RIPPLE)} \leq$ 100 mVpp |
| Turn-on time (at full load) | 1.5 seconds typical |
| Stability | Stable at all loads (no minimum load requirement) |
| Transient Response | 700 mV/1 ms<br>(25%-75% Load) |
| Short Circuit Current | Protection provided<br>Self-recovery<br>60A current limit |

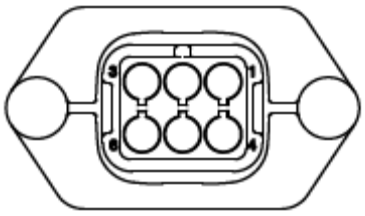
### General Specifications

| | |
|---|---|
| CAN | *A model with a CAN port (SAE J1939 or CANopen) is available on request. Contact Axiomatic for an ordering part number.* |
| EMI and Environmental Compliance | Designed to meet the requirements of SAE J1455 and SAE J1113<br>CE marking on request |
| Efficiency | 90% |
| Isolation | 3750Vdc minimum input to output<br>500Vdc output to chassis |
| Enclosure | Cast Aluminum housing, integral gasket and connectors<br>13.44 x 10.69 x 3.97 inches (341.23 x 271.58 x 100.85 mm)<br>L x W x H including integral connector<br>Refer to the dimensional drawing, Figure 1.0. |
| Protection | IP67 |
| Vibration | Pending: MIL-STD-202G, Test 204D and 214A (Sine and Random)<br>10 g peak (Sine); 7.86 Grms peak (Random) |
| Shock | Pending: MIL-STD-202G, Test 213B; 50 g |
| Weight | Contact Axiomatic |
| Temperature Rating | Operating: -40 to 70°C (-40 to 158°F)<br>Storage: -50 to 90°C (-58 to 194°F) |
| Electrical Pinout | Input Connector:<br>1 Molex 19435-0611 |

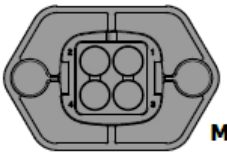
| Pin # | Description |
|---|---|
| 1 | Chassis GND |
| 2 | Not Used |
| 3 | Input 1 |
| 4 | Not Used |
| 5 | Input 2 |
| 6 | Input 3 |

Output Connector: 1 Molex 19436-0411

| Pin # | Description |
|---|---|
| 1 | Output + |
| 2 | Output + |
| 3 | Output - |
| 4 | Output – |




back of connector
pin numbering



MOL 19436-0411
back view

PRELIMINARY

| | |
|---|---|
| Mating Wire Harnesses | A 2 m, 14 AWG mating wire harness assembly, P/N: **AX070143**, to mate with the input connector (**MOL 19435-0611**) is available.<br><br>Wire Harness AX070143 has the following components and wire colours.<br>**1 MOL 19418-0010** - 6 position plug connector<br>**4 MOL 19420-0009** - 14-16 awg socket<br>**2 MOL 19417-0263** - sealing plug<br>**3 WR-14/1REDB1015 -** 14 awg RED wire cut 2m strip 5 mm<br>**1 WR-14/1BLKB1015 -** 14 awg BLACK wire cut 2m strip 5 mm<br>**4** Housing crimp pins **MOL 19417-0047** (to suit 10-12AWG wire)<br><br>A 2m, 10 AWG mating wire harness assembly, P/N: **AX070144**, to mate with the output connector (**MOL 19436-0411**) is available.<br><br>Wire Harness AX070144 has the following components and wire colours.<br>**1 MOL 19432-0001** - 4 position plug connector<br>**4 MOL 19434-0003** Female terminal accepts 10-12AWG wire<br>**2 WR-10/105REDT1015** - 10AWG RED wire cut 2m strip 5 mm<br>**2 WR-10/105BLKT1015** – 10AWG BLACK wire cut 2 m strip 5 mm<br>4 Housing crimp pins **MOL 19431-0016 (**to suit 10-12AWG wire) |
| Installation | **WARNING: High Power Device – Use certified electricians for installation.**<br><br>1. The Power Supply should be installed and inspected by qualified electrical personnel.<br>2. For 600Vdc input, DC voltage can apply to any 2 pins on the inputs (1,2 or 3). **Warning** :The third (unused) input wire has high voltage (because of connections inside the unit) and it should be kept isolated and floating.<br>3. For 480Vac, 3 phase input, a maximum 5A per phase is recommended.<br>4. Use four 5/16 inch or M8 bolts screws to mount the converter.<br>5. Ground the unit to chassis ground by attaching a ground strap to Pin 1 on the Molex Connector.<br>6. Snap the mating plug connectors into the mating receptacles mounted on the converter.<br>7. Connect the wiring to power and output terminal blocks (as provided by customer).<br>8. Once the load is ready to receive power, turn on the power source to the converter. |

PRELIMINARY

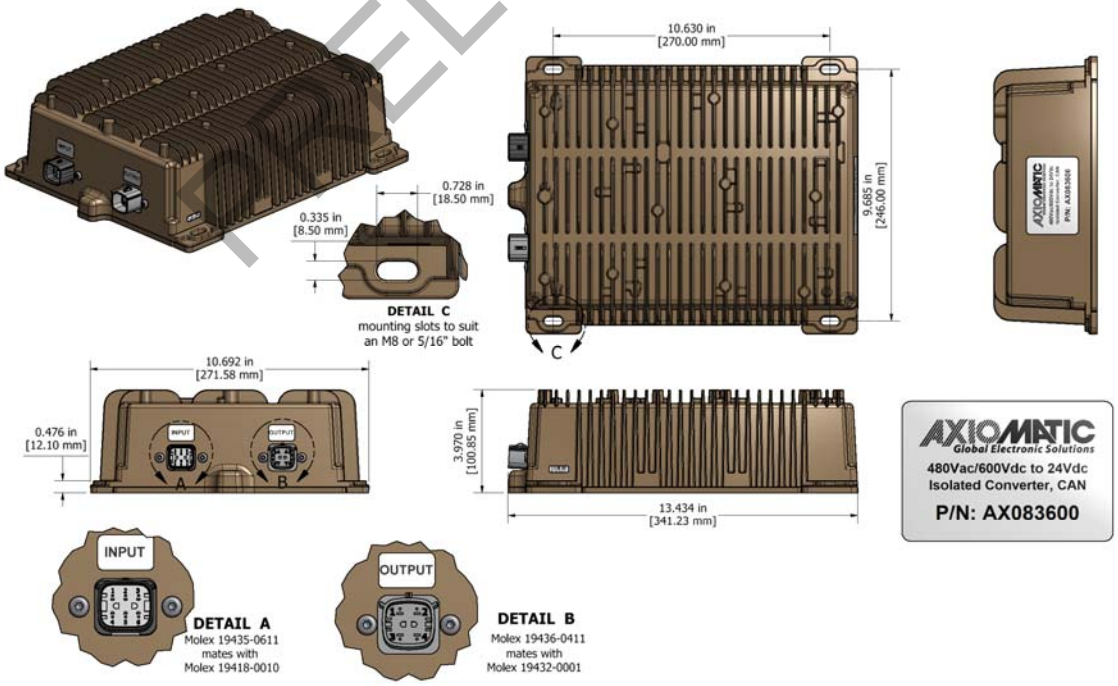



*Figure 1. 0. – Dimensional Drawing*

Form: TDAX083600-02/06/20