

Preliminary  
TECHNICAL DATASHEET #TDAX081220  
**48Vdc/24Vdc Isolated Converter**  
36-60 Vdc Input  
24Vdc, 600W Output  
P/N: AX081220

### Features

- 48Vdc/24Vdc, 600 Watts
- Operates from 36 Vdc to 60 Vdc
- Isolated
- Typical efficiency of 93%
- Can be used in a current sharing configuration
- Redundancy for parallel application
- Input inrush current limit
- Reverse battery protection
- Over & under-voltage protection
- Short circuit and overcurrent protection
- Thermal protection for over temperature
- -40 to 70 °C (-40 to 158 °F)
- IP67 protection rating
- 1 TE Deutsch DT13-08P connector and 1 TE Deutsch DT13-4P connector
- EMI/EMC compliant



### Applications

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

### Ordering Part Numbers:

48Vdc/24Vdc, 600W, Isolated DC/DC Converter, P/N: **AX081220**

#### Accessories:

Mating Plug Kit for Input Connector, P/N: **AX070112**

Mating Plug Kit for Output Connector, P/N: **AX070117**

Mating Wire Harness for Input Connector, P/N: **AX070539**

Mating Wire Harness for Output Connector, P/N: **AX070538**

## 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.

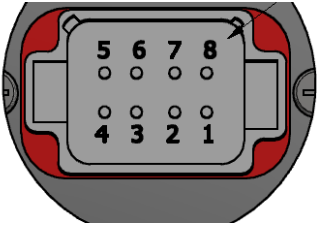

### Input

Power Source	48 Vdc nominal
Operating Voltage Range	36 to 60 Vdc provides output regulated to 3% @ 25 A load
Maximum Input Current	18.5 Adc @ 36 Vdc
Reverse Voltage Protection	Provided
Under-voltage Shutdown	33 Vdc typical
Over-voltage Shutdown	65 Vdc typical

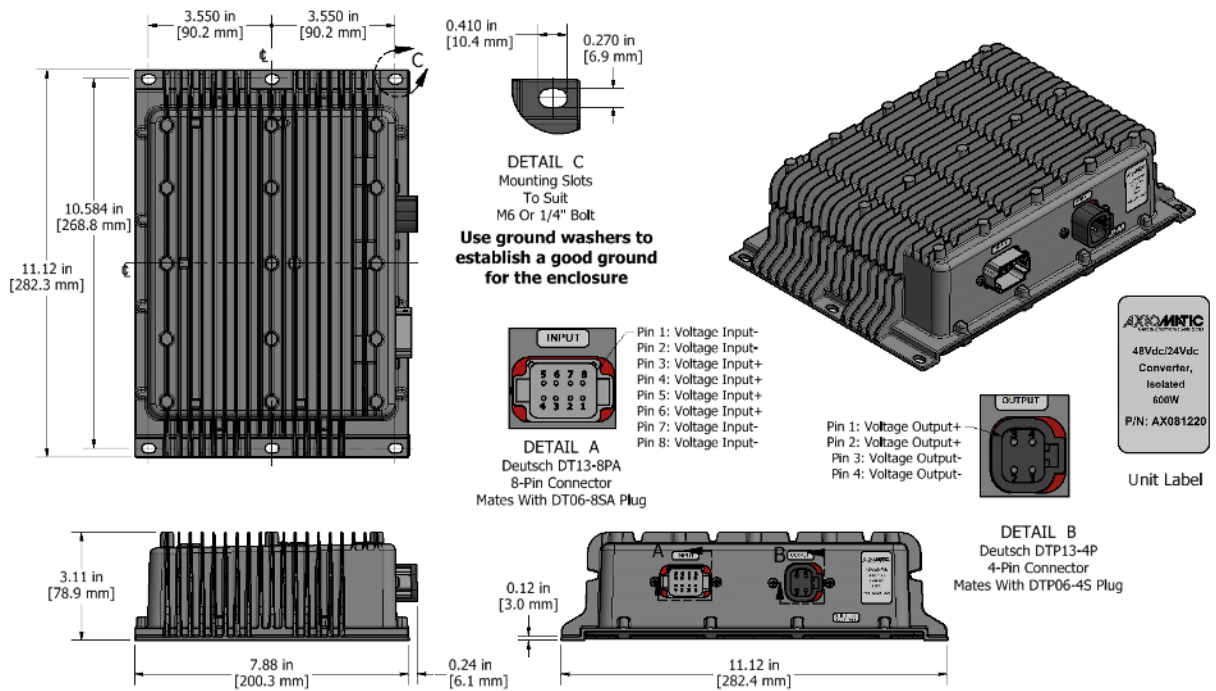
### Output

Nameplate Rating (Output Power)	600 VA nominal
Output Current	25 Adc continuous
Output Voltage	24 Vdc $\pm$ 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	700 mV/1 ms (25%-75% Load)
Short Circuit Current	Protection provided Self-recovery 30 A current limit

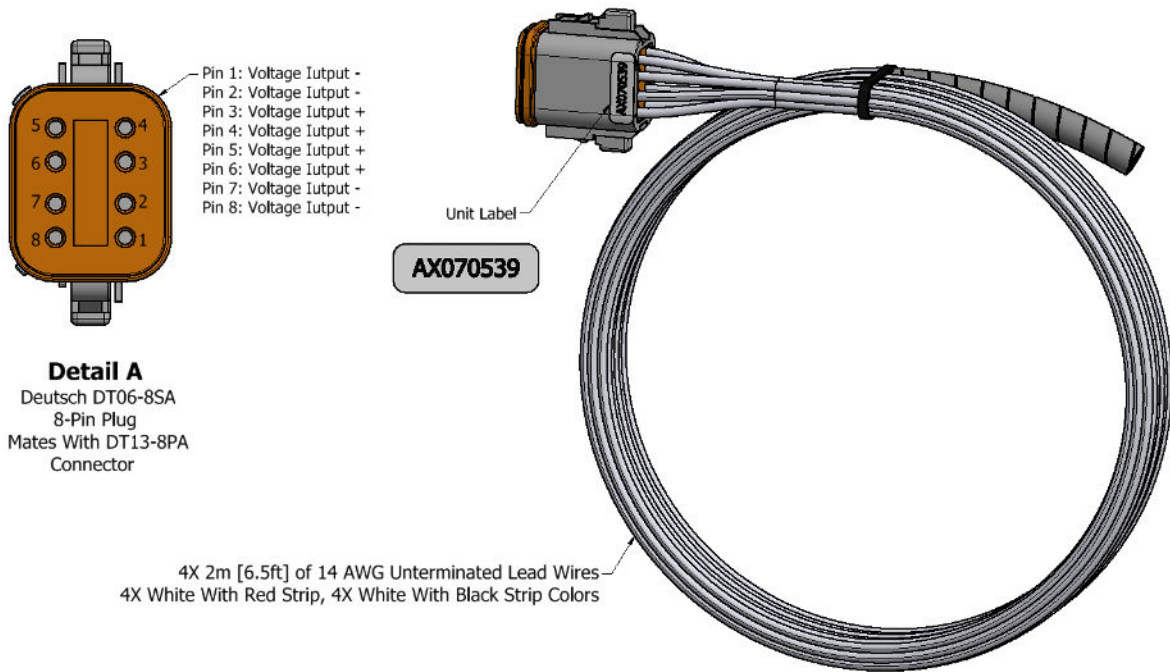
### General Specifications

Efficiency	93%																												
Isolation	700 Vdc																												
Enclosure	Cast Aluminum enclosure, integral gasket and connector 8.14 x 11.12 x 3.11 inches (206.00 x 282.00 x 79.00 mm) L x W x H including integral connectors Refer to the dimensional drawing.																												
Compliance	RoHS																												
Protection	IP67																												
Weight	8.25 lbs. (3.74 kg)																												
Operating Temperature	-40 to 70°C (-40 to 158°F)																												
Storage Temperature	-50 to 90°C (-58 to 194°F)																												
Vibration	Pending																												
Shock	Pending																												
Electrical Pinout	<p><b>Input:</b> 8-pin TE Deutsch connector, P/N: DT13-8PA Mating Plug Kit P/N: <b>AX070112</b> (includes 1 Socket DT06-08SA, 1 Wedgelock W8S, 8 Contacts 0462-203-12141 and 6 Sealing Plugs 114017) Suitable wire: 14 AWG</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Voltage Input -</td> </tr> <tr> <td>2</td> <td>Voltage Input -</td> </tr> <tr> <td>3</td> <td>Voltage Input +</td> </tr> <tr> <td>4</td> <td>Voltage Input +</td> </tr> <tr> <td>5</td> <td>Voltage Input +</td> </tr> <tr> <td>6</td> <td>Voltage Input +</td> </tr> <tr> <td>7</td> <td>Voltage Input -</td> </tr> <tr> <td>8</td> <td>Voltage Input -</td> </tr> </tbody> </table>  <p><b>Output:</b> 4-pin TE Deutsch connector, P/N: DTP13-4P Mating Plug Kit P/N: <b>AX070117</b> (includes 1 Socket DT06-4S, 1 Wedgelock WP4S, and 4 Contacts 0462-201-16141) Suitable wire: 12 AWG</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Voltage Output +</td> </tr> <tr> <td>2</td> <td>Voltage Output -</td> </tr> <tr> <td>3</td> <td>Voltage Output -</td> </tr> <tr> <td>4</td> <td>Voltage Output +</td> </tr> </tbody> </table> 	Pin	Description	1	Voltage Input -	2	Voltage Input -	3	Voltage Input +	4	Voltage Input +	5	Voltage Input +	6	Voltage Input +	7	Voltage Input -	8	Voltage Input -	Pin	Description	1	Voltage Output +	2	Voltage Output -	3	Voltage Output -	4	Voltage Output +
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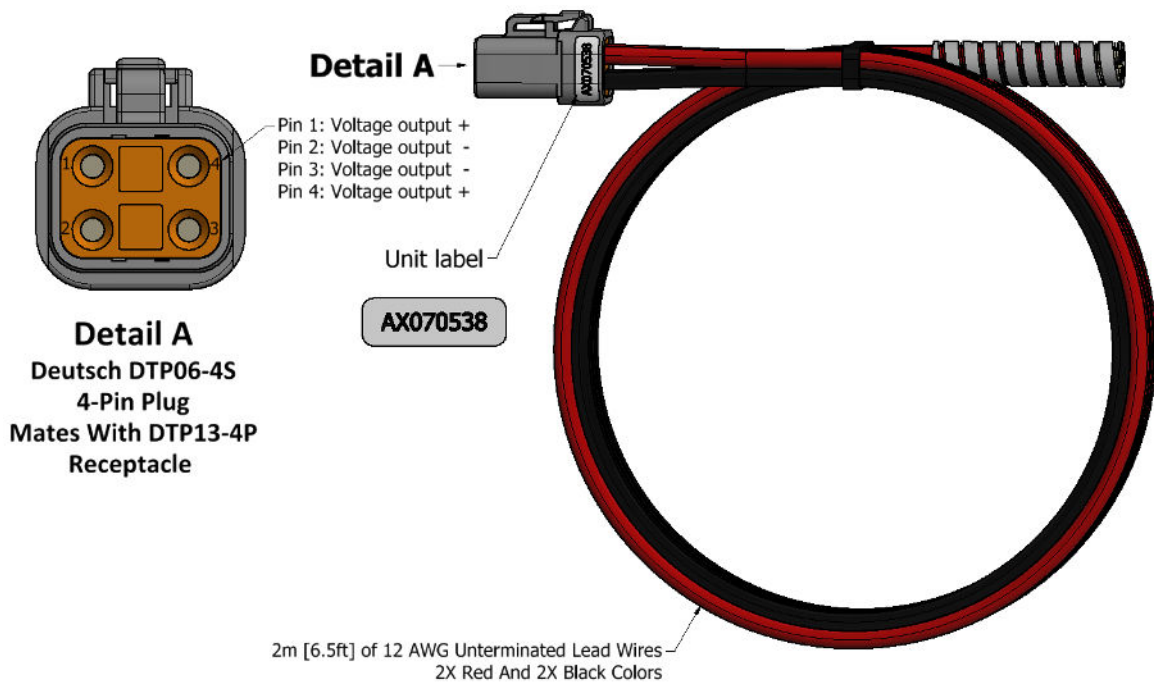
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Installation	<ol style="list-style-type: none"> <li>1. A 25A fuse is recommended in series with the input source.</li> <li>2. Use four 1/4-20 1 inch or M6 bolts screws to mount the converter.</li> <li>3. Ground the unit to chassis ground by attaching to the casing a ground strap.</li> <li>4. Snap the plug connector into the mating receptacle mounted on the converter.</li> <li>5. Connect the wiring to power and output terminal blocks (provided by customer).</li> <li>6. Once the load is ready to receive power, turn on the power source to the converter.</li> </ol>																											



Dimensional Drawing of AX081220



*Drawing of Wire Harness AX070539*



*Drawing of Wire Harness AX070538*

Form: TDAX081220-03/18/2024