HY2714A

DC-DC Converter Power Supply

(Document Rev A03, 12/12/15)

Market: Mil-Cots, Industrial

Application: Electronic Equipment Rack

Table 1: Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
<th>Unit</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vin max range</td>
<td>22 to 29 Vdc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>–20 to +50 °C, –40 to +85 °C</td>
<td></td>
<td>Operating Non-Operating</td>
</tr>
<tr>
<td>Output Power</td>
<td>1679 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input power</td>
<td>2239 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+5Vdc output</td>
<td>800 W</td>
<td></td>
<td>Refer Table 2 (Outputs)</td>
</tr>
<tr>
<td>+3.3Vdc output</td>
<td>231 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+12Vdc output</td>
<td>84 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-12Vdc output</td>
<td>12 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+24Vdc output</td>
<td>252 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+12Vdc</td>
<td>300 W</td>
<td></td>
<td>Fan Power Trimmed to 13V</td>
</tr>
</tbody>
</table>

Product Highlights

This filtered +28Vdc input dc-dc power converter has multiple outputs available. Five outputs for customer use and one output for cooling fan power. The six factory configured outputs are (+5Vdc, +3.3Vdc, +/-12Vdc, +24Vdc, and +12Vdc fan power). Total combined output power available is 1679W. This COTS solution works well for Mil-cots and Industrial applications and is designed to meet portions of Mil-Std-704F input requirements and MIL-STD-461E EMI requirements. This power supply was developed for military mil-cots aircraft VME electronics equipment racks.

AEGIS Power Systems, Inc. specializes in the front end design, development, and manufacture of Rapid Response Custom Switching Power Supplies for Mil-COTS, defense, industrial, telecomm, aircraft, shipboard, rack mount, electric powered vehicle and military applications. Contact Aegis for specific details on what portions of a particular military standard is offered for this power converter power supply or what can be offered on your custom power supply you wish to build.
**SPECIFICATIONS**

*(Typical at 25°C, nominal line and 100% load, unless otherwise specified.)*

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage:</td>
<td>+28Vdc Nominal, Range 22 - 29Vdc. Designed to meet Mil-Std-704F.</td>
</tr>
<tr>
<td>Input current:</td>
<td>80 Amps typical at 28Vdc input.</td>
</tr>
<tr>
<td>Input power:</td>
<td>2239 Watts typical.</td>
</tr>
<tr>
<td>Power factor:</td>
<td>N/A.</td>
</tr>
<tr>
<td>Output power:</td>
<td>1679W Max Output (1.68KW). See Table 2 (Output Specs).</td>
</tr>
<tr>
<td>Holdup time:</td>
<td>N/A.</td>
</tr>
<tr>
<td>Output voltages:</td>
<td>+5Vdc, +3.3Vdc, +/-12Vdc, +24Vdc, +12Vdc (fan power). See table 2 for details.</td>
</tr>
<tr>
<td>Efficiency:</td>
<td>75% minimum efficiency at full load.</td>
</tr>
<tr>
<td>Output ripple:</td>
<td>See Table 2 (Output Specs).</td>
</tr>
<tr>
<td>Current Limit:</td>
<td>Over current protected.</td>
</tr>
<tr>
<td>Start up time:</td>
<td>Contact Aegis.</td>
</tr>
<tr>
<td>Voltage set point:</td>
<td>See Table 2 (Output Specs).</td>
</tr>
<tr>
<td>Line regulation:</td>
<td>See Table 2 (Output Specs).</td>
</tr>
<tr>
<td>Load regulation:</td>
<td>See Table 2 (Output Specs).</td>
</tr>
<tr>
<td>Temperature regulation:</td>
<td>±0.02%/°C.</td>
</tr>
<tr>
<td>Temperature:</td>
<td>–20°C to +50°C Operating and -40°C to +85°C Non-Operating.</td>
</tr>
<tr>
<td>Cooling:</td>
<td>Convection cooled with internal fan forced air flow.</td>
</tr>
<tr>
<td>Package:</td>
<td>Frame mounted inside customer equipment rack.</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>3.2&quot; H x 10.7&quot; W x 15.9&quot; L. (W=11.14 Measured with Bus Bar Connector.)</td>
</tr>
<tr>
<td>Weight:</td>
<td>15 lbs. Typical.</td>
</tr>
<tr>
<td>Connector:</td>
<td>See Table 3 and mechanical drawing.</td>
</tr>
<tr>
<td>Vibration:</td>
<td>Designed to meet portions of Mil-Std-810F. Call for details.</td>
</tr>
<tr>
<td>Shock:</td>
<td>Designed to meet portions of Mil-Std-810F. Call for details.</td>
</tr>
<tr>
<td>Humidity:</td>
<td>3-95% non-condensing.</td>
</tr>
<tr>
<td>EMI:</td>
<td>Designed to meet portions of MIL-STD-461E. (CE101, CE102, and CS101). Call for details.</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice.
### Table 2: Voltage Outputs

<table>
<thead>
<tr>
<th>Parameters</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V6 (Fan)(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>+5Vdc</td>
<td>+3.3Vdc</td>
<td>+12Vdc</td>
<td>-12Vdc</td>
<td>+24Vdc</td>
<td>+12Vdc</td>
</tr>
<tr>
<td>Current</td>
<td>160A</td>
<td>70A</td>
<td>7A</td>
<td>1A</td>
<td>10.5A</td>
<td>25A</td>
</tr>
<tr>
<td>Power</td>
<td>800W</td>
<td>231W</td>
<td>84W</td>
<td>12W</td>
<td>252W</td>
<td>300</td>
</tr>
<tr>
<td>Ripple</td>
<td>50mVpk-pk</td>
<td>50mVpk-pk</td>
<td>150mVpk-pk</td>
<td>150mVpk-pk</td>
<td>240mVpk-pk</td>
<td>150mVpk-pk</td>
</tr>
<tr>
<td>Range</td>
<td>4.9 - 5.1</td>
<td>3.24 - 3.37</td>
<td>11.4 - 12.6</td>
<td>11.4 - 12.6</td>
<td>23.8 - 25.2</td>
<td>12.5 - 13.5</td>
</tr>
<tr>
<td>Regulation</td>
<td>≤0.1Vdc</td>
<td>≤0.066Vdc</td>
<td>≤0.6Vdc</td>
<td>≤0.6Vdc</td>
<td>≤1.2Vdc</td>
<td>≤0.6Vdc</td>
</tr>
</tbody>
</table>

(1) Fan voltage trimmed to 13.0Vdc.

### Table 3: Connections (see attached drawing)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos Vdc Input</td>
<td>#8-32 Threaded Stud</td>
</tr>
<tr>
<td>Neg Vdc Input</td>
<td>#8-32 Threaded Stud</td>
</tr>
<tr>
<td>Pos Vdc Output</td>
<td>#10-24 Threaded Stud</td>
</tr>
<tr>
<td>Neg Vdc Output</td>
<td>#10-24 Threaded Stud</td>
</tr>
</tbody>
</table>