HP3APFC1K5400

Overview
AC-DC Power Supply, Water Resistant (Sealed Enclosure),
Three Phase 400Hz 200Vac Input Line-Line (115Vac Line-Neutral), +28
Output, 1500W Max

Market(s)
Defense, Industrial

Typical Application(s)
Electronic equipment rack, Onboard vehicle power

Product Highlights
This ruggedized High-Power PSU operates from a 3-Phase 200Vac input. The single 1500W output capability is the power
supply solution for military COTS applications. It is designed to meet the environmental requirements of MIL-STD-810F
and EMI requirements of MIL-STD-461F. In comparison to other power supplies using conventional technology, this
package provides users with higher efficiency (90% typical), less weight, and higher power output. This power supply is
designed to power military electronic equipment including communication centers. Contact Aegis Power Systems, Inc.
for specific details on what applicable portions of a military standard is offered for this power supply.

Features
- 3 Phase 200Vac
- MIL-STD-810F Environmental *
- MIL-STD-704F Electrical**
- MIL-STD-461F EMI *
- Enclosed case IP56
- Conformal Coated Circuit Boards
- Dust covers for AC Input & Status connector

<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>181 to 216</td>
<td>Vac</td>
<td>Line to Line (Neutral not connected)</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40 to +50</td>
<td>°C</td>
<td>-40 to +100 Non-operating</td>
</tr>
<tr>
<td>Input Power</td>
<td>1670</td>
<td>W</td>
<td>(+50°C)</td>
</tr>
<tr>
<td>Output Power</td>
<td>1500</td>
<td>W</td>
<td>(+50°C)</td>
</tr>
<tr>
<td>Max output</td>
<td>1500</td>
<td>W</td>
<td>Refer to Table 2 (Output)</td>
</tr>
</tbody>
</table>

* Designed to meet applicable portions of this standard. Contact Aegis Power Systems, Inc. for specific details.
**Input Voltage range meets and exceeds the MIL-STD-704F requirement of 187 to 204Vac.

About Us
Aegis Power Systems, Inc. specializes in the design, development, and manufacture of AC-DC and DC-DC power supplies
for high-performance, rugged, critical, and specialty applications. Markets served include defense, industrial,
communications, aircraft, shipboard, rack mount, embedded computing, and electric vehicle applications. Contact us to
find out if this item can be configured or redesigned to meet your specific technology need.
### 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><strong>Input Voltage</strong></td>
<td>3 Phase, 200Vac L-L, 400 Hz, Nominal. Input range 393 Hz to 407 Hz, 187Vac - 204Vac Line-Line.</td>
</tr>
<tr>
<td><strong>Input Current</strong></td>
<td>4.8A per phase (1500W Output)</td>
</tr>
<tr>
<td><strong>Input Power</strong></td>
<td>1670W (1500W Output)</td>
</tr>
<tr>
<td><strong>Power Factor</strong></td>
<td>.97- (Active Power Factor Correction)</td>
</tr>
<tr>
<td><strong>Output Power</strong></td>
<td>1500W Maximum</td>
</tr>
<tr>
<td><strong>Output Voltages and Current</strong></td>
<td>See table 2 for details</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td>90% Nominal, 83% Minimum.</td>
</tr>
<tr>
<td><strong>Output Ripple</strong></td>
<td>See table 2.</td>
</tr>
<tr>
<td><strong>Current Limit</strong></td>
<td>Short circuit protected with automatic recovery</td>
</tr>
<tr>
<td><strong>Start-Up Time</strong></td>
<td>1 to 2 seconds</td>
</tr>
<tr>
<td><strong>Voltage Set Point</strong></td>
<td>25-30Vdc for +28VDC output (@25C ambient)</td>
</tr>
<tr>
<td><strong>Line/Load Regulation</strong></td>
<td>+/- 2%</td>
</tr>
<tr>
<td><strong>Output Voltage Temperature Coefficient</strong></td>
<td>-3.73 mV / °C.</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>-40°C to +50°C Operating / -40°C to +100°C Non-operating</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Forced Fan Cooling. (Fans come on when needed.)</td>
</tr>
<tr>
<td><strong>Package</strong></td>
<td>Enclosed case chassis mounted.</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>14.75” L x 10.75” W x 5” H</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>35lbs. maximum</td>
</tr>
<tr>
<td><strong>Connectors</strong></td>
<td>AC Input Connector P/N: MS3454W20-14P</td>
</tr>
<tr>
<td></td>
<td>DC Output Connector, two (2) each 3/8” Lugs, one POS, one Neg. Status Output Connector P/N: MS3474W12-8S.</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td>Designed to meet applicable portions of MIL-STD-810F, Ground Mobile</td>
</tr>
<tr>
<td><strong>Ingress Protection</strong></td>
<td>IP56 Enclosure, Connectors, and Cooling Fans</td>
</tr>
<tr>
<td><strong>EMI</strong></td>
<td>Designed to meet applicable portions of MIL-STD-461F</td>
</tr>
<tr>
<td></td>
<td>Requirement: CE102, CS101, CS114, and RE102. (Ground Range)</td>
</tr>
</tbody>
</table>

*Specifications subject to change without notice.*
### Table 2: Voltage Output (Nominal)

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
<th>Power</th>
<th>Ripple</th>
</tr>
</thead>
<tbody>
<tr>
<td>+28Vdc</td>
<td>54A</td>
<td>1500W</td>
<td>300mVpk-pk*</td>
</tr>
</tbody>
</table>

* 20MHz Bandwidth Limited.

### Table 3: Connector Specifications

**AC Input Connector P/N: MS3454W20-14P**

<table>
<thead>
<tr>
<th>Contact Designation</th>
<th>Conductor Circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Neutral</td>
</tr>
<tr>
<td>B</td>
<td>Ground</td>
</tr>
<tr>
<td>C</td>
<td>PHASE C</td>
</tr>
<tr>
<td>D</td>
<td>PHASE A</td>
</tr>
<tr>
<td>E</td>
<td>PHASE B</td>
</tr>
</tbody>
</table>

**Status Connector P/N: MS3474W12-8S**

<table>
<thead>
<tr>
<th>Contact Designation</th>
<th>Conductor Circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AC OK Collector*</td>
</tr>
<tr>
<td>B</td>
<td>DC OK Collector*</td>
</tr>
<tr>
<td>C</td>
<td>Over Temp * **</td>
</tr>
<tr>
<td>D</td>
<td>Enable/Inhibit Anode</td>
</tr>
<tr>
<td>E</td>
<td>Enable/Inhibit Cathode</td>
</tr>
<tr>
<td>F</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>+5V Standby</td>
</tr>
<tr>
<td>H</td>
<td>Standby Return</td>
</tr>
</tbody>
</table>

*Common emitter internally tied to +5V Standby Return.
**Normally closed thermal switch (Open @ 95°C)*
DC Output Studs

<table>
<thead>
<tr>
<th>Connection</th>
<th>Circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black 3/8” Stud</td>
<td>Return for DC output</td>
</tr>
<tr>
<td>Red 3/8” Stud</td>
<td>+28V Output</td>
</tr>
</tbody>
</table>

Table 4: Customer Selected Options
Base Part number (HP3APFC1K5400xxx)

<table>
<thead>
<tr>
<th>xx</th>
<th>Custom Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Enable with applied +5V to Status connector pins D and E</td>
</tr>
<tr>
<td>01</td>
<td>Inhibit with applied +5V to Status connector pins D and E</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>x</th>
<th>Color Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Lusterless Green 383, color number 34094*</td>
</tr>
<tr>
<td>T</td>
<td>Desert Tan, color number 33446*</td>
</tr>
<tr>
<td>M</td>
<td>Gold Tinted Chem Film*</td>
</tr>
</tbody>
</table>

*Finish before paint: MIL-C-5541F, Class 3; in Accordance with MIL-DLT-81706, Type II, Class 3.
*Paint as Required: CHEMICAL AGENT RESISTANT IAW MIL-DTL-53072, (REF FED-SDT-595),
NOTES: UNLESS OTHERWISE SPECIFIED


SPECIAL NOTE:
STUD COVER IS SHOWN AS TRANSPARENT FOR VISUAL PURPOSES ONLY.

DIMENSIONS ARE IN INCHES
TOLERANCES:
- FRACTIONAL: N/A
- DEGREES: .5
- TWO PLACE DECIMAL: .02
- THREE PLACE DECIMAL: .005

NOTES:
- UNLESS OTHERWISE SPECIFIED
- SEE NOTE 2
- SEE NOTE 3

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