

1PH60A

AC-DC Power Supply Card

(Document Rev A08, (6/22/17))



**115/220Vac Single Phase 60Hz Input
Single Output, 650W Max Total Possible**

Features

- 115/220Vac per MIL-STD-704F and MIL-STD-1399A/B *
- Single Output, 600/650W
- MIL-STD-810F Environmental *
- MIL-STD-461E EMI *
- Single Slot VME Power Card

* Designed to meet portions of the standard. Contact Aegis Power for details.

Table 1: Maximum Ratings

| Parameter | Rating | Unit | Notes |
|------------------|------------|------|-------------------|
| Vin max range | 95 to 250 | Vac | |
| Temperature | -40 to +85 | °C | Refer to Figure 1 |
| Output Power | 650 | W | 28Vdc Output |
| Input power | 783 | W | 115Vac Input |
| Max +5Vdc power | 400 | W | 80A |
| Max +12Vdc power | 600 | W | 50A |
| Max +24Vdc power | 600 | W | 25A |
| Max +28Vdc power | 650 | W | 23.2A |
| Max +48Vdc power | 600 | W | 12.5A |

Product Highlights

This dual slot 8HP wide 6U high filtered ac-dc power supply converter card has a single output available from five possible factory configured output selections (+5Vdc, +12Vdc, +24Vdc, +28Vdc, or +48Vdc) with 400W, 600W or 650W available depending on the output voltage. This Military Mil-COTS power supply solution is designed to meet portions of Mil-Std-704F and Mil-Std-1399 input requirements, portions of MIL-STD-810F vibration and shock requirements and portions of the MIL-STD-461E EMI requirements. When compared to VME power supplies using conventional technology, this dual slot air cooled ac-dc power supply converter provides users with higher efficiency (83%), lower weight (4 lbs), and higher power (up to 650W).

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, telecom, aircraft, shipboard, rack mount, and electric powered vehicle applications. Contact Aegis Power Systems for details on Mil-Specs that this product is designed to meet.

SPECIFICATIONS

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

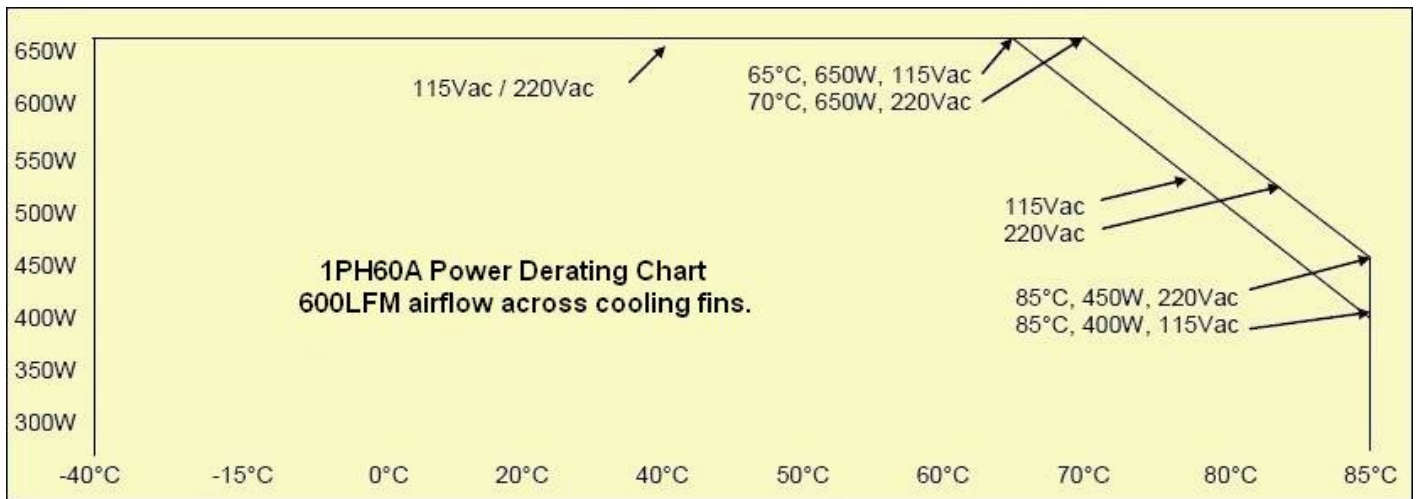
| | |
|--------------------------------|--|
| AC input voltage: | 95Vac - 250Vac, 47Hz - 63Hz. Transient 70Vac to 270Vac, 100mSec. Designed to meet MIL-STD-704F Normal and Abnormal Range. Designed to meet MIL-STD-1399A/B Type I 60Hz. |
| AC input line current: | 6.35/6.88A @ 115Vac, 3.18/3.44A @ 220Vac. |
| Input power: | 723/783W @ 115Vac, 700/760W @ 220Vac, Typical. |
| Power Factor: | 0.99 Typical 47Hz to 63Hz. |
| Output power: | 600/650W Max. See Table 2. See Figure 1 for output power derating. |
| Holdup Time: | 10mSec Typical. |
| Output voltages: | See table 2. See Figure 1 for output power derating. |
| Output ripple: | See table 2. |
| Current Limit: | Short circuit protected with automatic recovery. |
| Efficiency: | 83%/115Vac, 86%/220Vac, Typical at full load. |
| Start up time: | 500 mSec. Max. |
| Voltage set point: | ± 2.5%. |
| Line regulation: | ± 2.5%. |
| Load regulation: | ± 2.5%. |
| Temperature regulation: | ± 0.01% / °C. |
| Temperature rating: | −40°C to +85°C Operating baseplate temperature max. See Figure 1. |
| Cooling: | Customer provided forced air cooling at 600LFM across card's cooling fins. |
| Package: | Dual slot pluggable slide-in card with attached baseplate and cooling fins. |
| Dimensions: | 6U x 8HP x 160mm (see mechanical drawing). |
| Weight: | 4 lb. Typical. |
| Connector: | 1ea Positronics PCIM30W15M400A1 or equivalent (see pin assignment page). |
| Vibration: | Designed to meet MIL-STD-810F, Method 514.5, Procedure I. |
| Shock: | Designed to meet MIL-STD-810F, Method 516.5, Procedure I. |
| Humidity: | 0 – 95% non-condensing. |
| EMI: | Designed to meet MIL-STD-461E (CE102 and CS101). |

Specifications subject to change without notice.

Table 2: Voltage Outputs

| Part Number | Vdc out | Watts out | Amps out | Ripple (20MHz BW) |
|-------------|---------|-----------|----------|-------------------|
| 1PH60A-001 | +28V | 650W | 23.2A | 280mVp-p |
| 1PH60A -002 | +48V | 600W | 12.5A | 480mVp-p |
| 1PH60A -003 | +12V | 600W | 50.0A | 100mVp-p |
| 1PH60A -004 | +5V | 400W | 80.0A | 50mVp-p |
| 1PH60A -005 | +24V | 600W | 25.0A | 240mVp-p |

Figure 1: 1PH60A Power De-rating for Temperature and Input Voltage per below graph



Connector Pin Out Assignment

30 Pin Positronic Connector
P/N PCIM30W15M400A1 or Equivalent

Connector J1:

Pin 1 #1 Return

Pin 2 #2 Return

Pin 3 #1 Return

Pin 4 #2 Return

Pin 5 #1 Return

Pin 6 #2 Return

Pin 7 #1 +Out

Pin 8 #2 +Out

Pin 9 #1 +Out

Pin 10 #2 +Out

Pin 11 #1 +Out

Pin 12 #2 +Out

Pin 13 No Connection

Pin 14 No Connection

Pin 15 #1 Pos Sense

Pin 16 No Connection

Pin 17 No Connection

Pin 18 #1 Neg Sense

Pin 19 No Connection

Pin 20 No Connection

Pin 21 Share Pos

Pin 22 No Connection

Pin 23 No Connection

Pin 24 Share Neg

Pin 25 No Connection

Pin 26 #2 Neg Sense

Pin 27 #2 Pos Sense

Pin 28 Chassis Ground

Pin 29 AC Neutral

Pin 30 AC Line Input

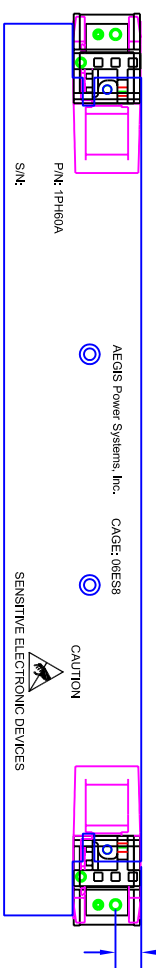
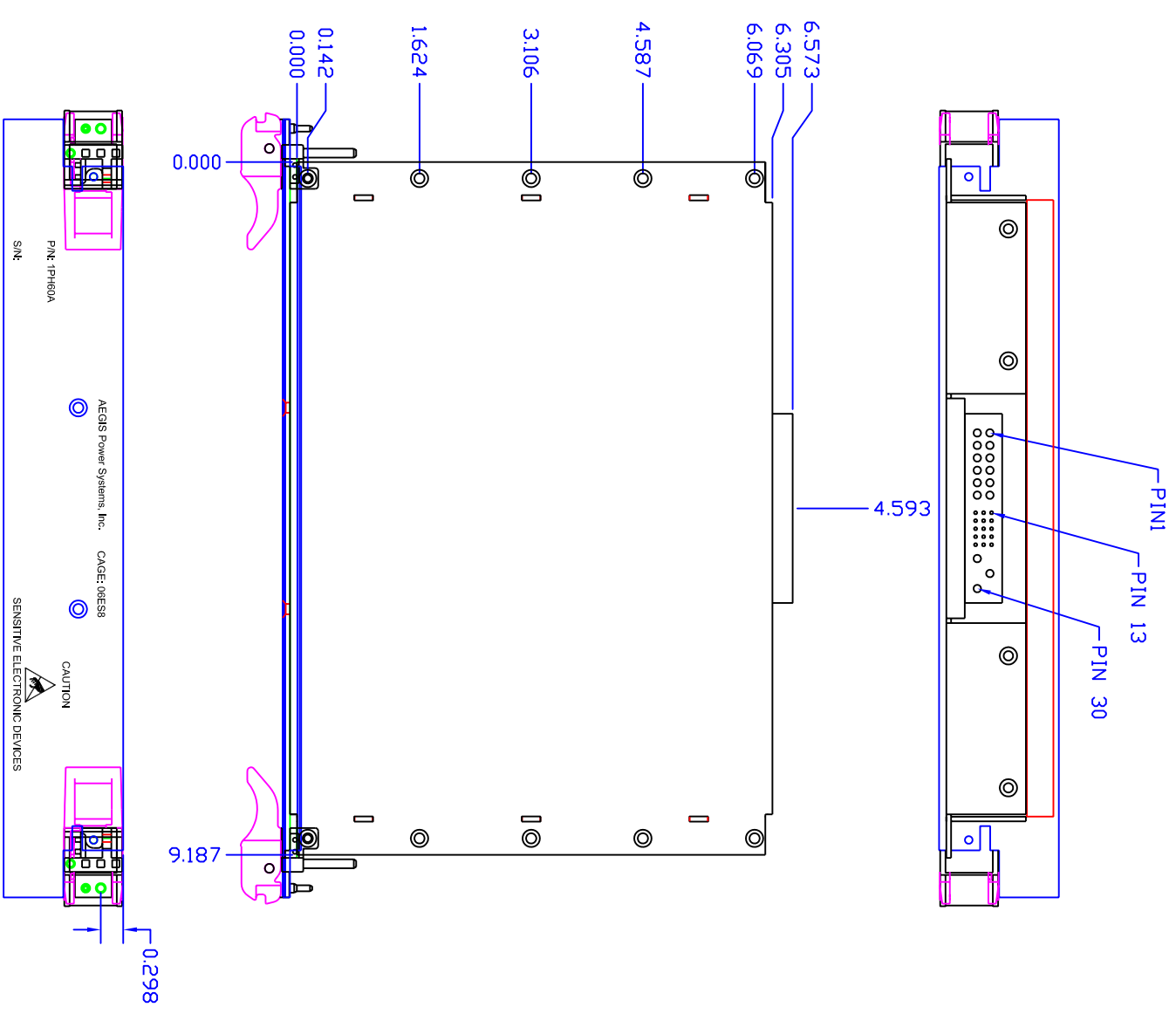
CAUTION:

Contact AEGIS Power
Systems before connecting
power supply units in parallel
or connecting the Share Pins.

| DWG NO. | | REV | | DATE | | APPROVED | |
|---------|-----|-----------------|---------|------|------|----------|------|
| ZONE | REV | DESCRIPTION | DATE | BY | DATE | BY | DATE |
| A01 | | INITIAL RELEASE | 9/30/09 | MVM | | | |
| A02 | | DIMENSIONING | 3/30/10 | MVM | | | |

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

- NOTES: UNLESS OTHERWISE SPECIFIED
1. CONNECTOR POSTTRONIC PC1M30W15M400A1
- J11 - #1 RETURN
 - J13 - #2 RETURN
 - J14 - #1 RETURN
 - J15 - #2 RETURN
 - J16 - #1 RETURN
 - J17 - #2 RETURN
 - J18 - #1 +OUT
 - J19 - #2 +OUT
 - J20 - #1 +OUT
 - J21 - #2 +OUT
 - J22 - #1 +OUT
 - J23 - #2 +OUT
 - J24 - #1 +OUT
 - J25 - #2 +OUT
 - J26 - #1 +OUT
 - J27 - #2 +OUT
 - J28 - #1 +OUT
 - J29 - #2 +OUT
 - J30 - #1 +OUT
 - J11 - #1 RETURN
 - J13 - #2 RETURN
 - J14 - #1 RETURN
 - J15 - #2 RETURN
 - J16 - #1 RETURN
 - J17 - #2 RETURN
 - J18 - #1 +OUT
 - J19 - #2 +OUT
 - J20 - #1 +OUT
 - J21 - #2 +OUT
 - J22 - #1 +OUT
 - J23 - #2 +OUT
 - J24 - #1 +OUT
 - J25 - #2 +OUT
 - J26 - #1 +OUT
 - J27 - #2 +OUT
 - J28 - #1 +OUT
 - J29 - #2 +OUT
 - J30 - #1 +OUT



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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DECIMALS ARE IN INCHES. FRACTIONS ARE IN INCHES. ANGLES ARE IN DEGREES. FINISH: SEE NOTE 2. MATERIAL: SEE NOTE 2. SEE NOTE 3. DO NOT SCALE DRAWING.

| APPROVALS | DATE | TITLE | SCALE | SHEET |
|------------|----------|---|-------|--------|
| APPROVED | 09/30/09 | VME SINGLE PHASE PFC AIR COOLED MECHANICAL LAYOUT | 1/1 | 1 OF 1 |
| DRAWN | | | | |
| CHECKED | | | | |
| PROJ. ENG. | | | | |
| MFG. | | | | |
| QUALITY | | | | |