

# 1PH604A

## AC-DC VME Power Supply Card



**Single Phase 60Hz 115/220Vac Input  
3 or 4 Output, 375W Max Combined Total**

(Document Rev A04, (6/22/17))

**Market: Military, Industrial**

**Application: Electronic Equipment Rack**

### Features

- 115/220Vac per MIL-STD-704F\* and MIL-STD-1399A/B \*
- 3 or 4 Output, 375W combined
- MIL-STD-810F Environmental \*
- MIL-STD-461E EMI \*
- Dual 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 - 250	Vac	47Hz-63Hz
Temperature	+85	°C	Refer to Figure 1
Output Power	375	W	All outputs combined
Input power	455/450	W	115Vac/220Vac input
+5Vdc Output	200	W	
+3.3Vdc Output	50/150	W	Depends on output configuration
+12Vdc Output	50/150	W	Depends on output configuration
-12Vdc Output	12	W	

### Product Highlights

This Dual slot 8HP wide 6U high filtered ac-dc power supply converter card can be configured for three (3) or four (4) outputs with +5Vdc, +3.3Vdc, +12Vdc, or -12Vdc available at a combined output of 375W. This Military Mil-COTS power supply solution is designed to meet portions of Mil-Std-704F input requirements, MIL-STD-810F vibration and shock requirements, and MIL-STD-461E EMI requirements. When compared to VME power supplies using conventional technology, this dual slot forced air fan cooled ac-dc power supply converter provides users with higher efficiency (86% with 220Vac input), lower weight (4.1 lbs), and higher power (up to 375W).

**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, 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.)**

<b>Input voltage:</b>	115/220Vac Nominal (95Vac - 250Vac) 60Hz (47Hz - 63Hz). Transient 70Vac to 270Vac, 100mSec. Designed to meet Mil-Std-704F Normal and Abnormal Range. Designed to meet Mil-Std-1399 Section A/B Type 1 60Hz.
<b>Input line current:</b>	4.1A @ 115Vac, 2.1A @ 220Vac.
<b>Input power:</b>	455W @ 115Vac, 450W @ 220Vac, Typical.
<b>Power Factor:</b>	0.99 Typical @ 47Hz - 63Hz.
<b>Output power:</b>	375W Max. See Table 2. See Figure 1 for output power derating.
<b>Holdup Time:</b>	10mSec Typical.
<b>Output voltages:</b>	See table 2. See Figure 1 for output power derating.
<b>Output ripple:</b>	1% Vout, except 3.3Vout is 1.52% (pk-pk 20 MHz BW limit)
<b>Current Limit:</b>	Short circuit protected with automatic recovery.
<b>Efficiency:</b>	83% /115VAC, 86% /220VAC, Typical at full load.
<b>Start up time:</b>	500 mSec. Max.
<b>Voltage set point:</b>	± 2.5%.
<b>Line regulation:</b>	± 2.5%.
<b>Load regulation:</b>	± 2.5%.
<b>Temperature regulation:</b>	± 0.01% / °C.
<b>Temperature rating:</b>	–40°C to +85°C Operating baseplate temperature max. See Figure 1.
<b>Cooling:</b>	Customer provided forced fan air across baseplate attached cooling fins.
<b>Package:</b>	Dual slot pluggable slide-in card with attached cooling fins.
<b>Dimensions:</b>	6U high x 8HP wide (1.6") x 160mm (see mechanical drawing).
<b>Weight:</b>	4.1 lbs. Typical.
<b>Connector:</b>	1ea Positronics PCIM30W15M400A1 or equivalent (see pin assignment page).
<b>Vibration:</b>	Designed to meet MIL-STD-810F, Method 514.5, Procedure I.
<b>Shock:</b>	Designed to meet MIL-STD-810F, Method 516.5, Procedure I.
<b>Humidity:</b>	0 – 95% non-condensing.
<b>EMI:</b>	Designed to meet MIL-STD-461E (CE102 and CS101).

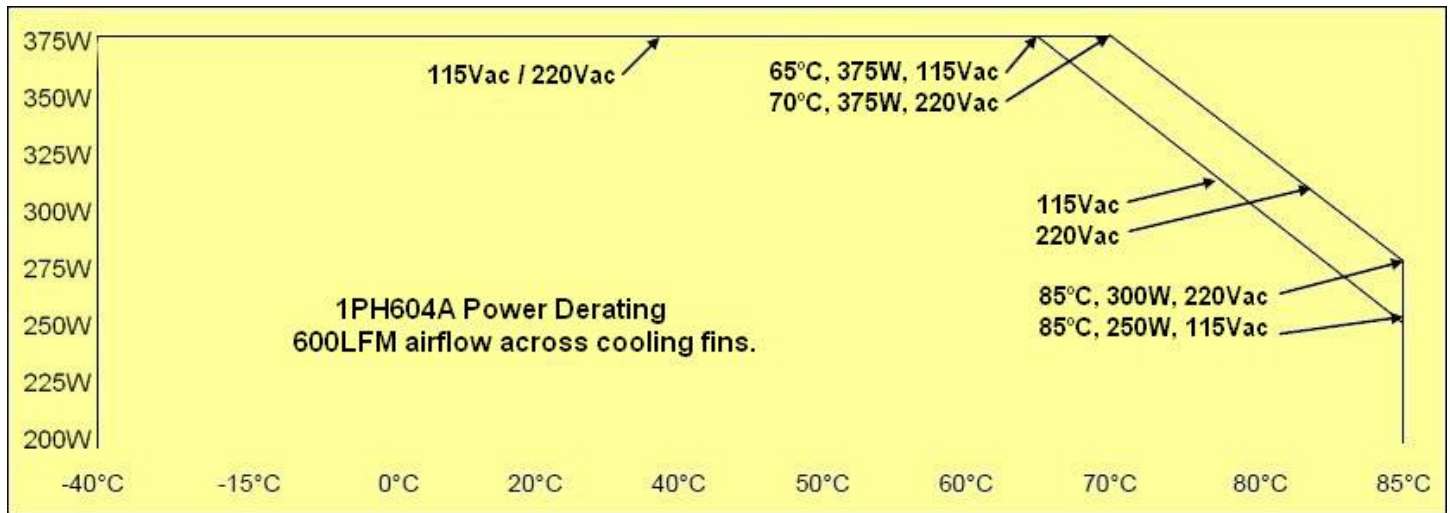
Specifications subject to change without notice.

**Table 2: Voltage Outputs**

Part Number	Vdc out	Watts out	Amps out	Ripple (20MHz BW)
1PH604A-001*	+5.0 Vdc	200 W	40 A	50mVp-p
	+3.3 Vdc	150 W	45 A	50mVp-p
	+12 Vdc	60 W	5 A	100mVp-p
	-12 Vdc	12 W	1 A	100mVp-p
* Maximum total combined output 375W.				

Part Number	Vdc out	Watts out	Amps out	Ripple (20MHz BW)
1PH604A-002	+5.0 Vdc	200 W	40.0 A	50mVp-p
	+3.3 Vdc	50 W	15.1 A	50mVp-p
	+12 Vdc	125 W	10.4 A	100mVp-p

**Figure 1: Power De-rating for Temperature and Input Voltage**



## Connector Pin Out Assignment

30 Pin Positronic Connector  
P/N PCIM30W15M400A1 or Equivalent

### Connector J1:

Pin 1	V1 Return
Pin 2	V2 Return
Pin 3	V1 Return
Pin 4	V2 Return
Pin 5	V1 Return
Pin 6	V3 Return
Pin 7	V1 Pos Out
Pin 8	V2 Pos Out
Pin 9	V1 Pos Out
Pin 10	V2 Pos Out
Pin 11	V1 Pos Out
Pin 12	V3 Pos Out
Pin 13	V4 Return
Pin 14	V4 Neg Out
Pin 15	V1 Pos Sense
Pin 16	V1 Share Pos
Pin 17	V1 Share Neg
Pin 18	V1 Neg Sense
Pin 19	V3 Share Pos
Pin 20	V3 Share Neg
Pin 21	No Connection
Pin 22	No Connection
Pin 23	No Connection
Pin 24	V2 Share Pos
Pin 25	V2 Share Neg
Pin 26	V2 Neg Sense
Pin 27	V2 Pos Sense
Pin 28	Chassis Ground
Pin 29	AC Neutral
Pin 30	AC Line Input

### CAUTION:

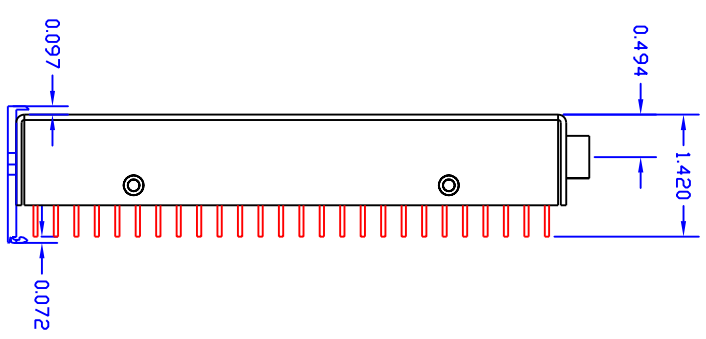
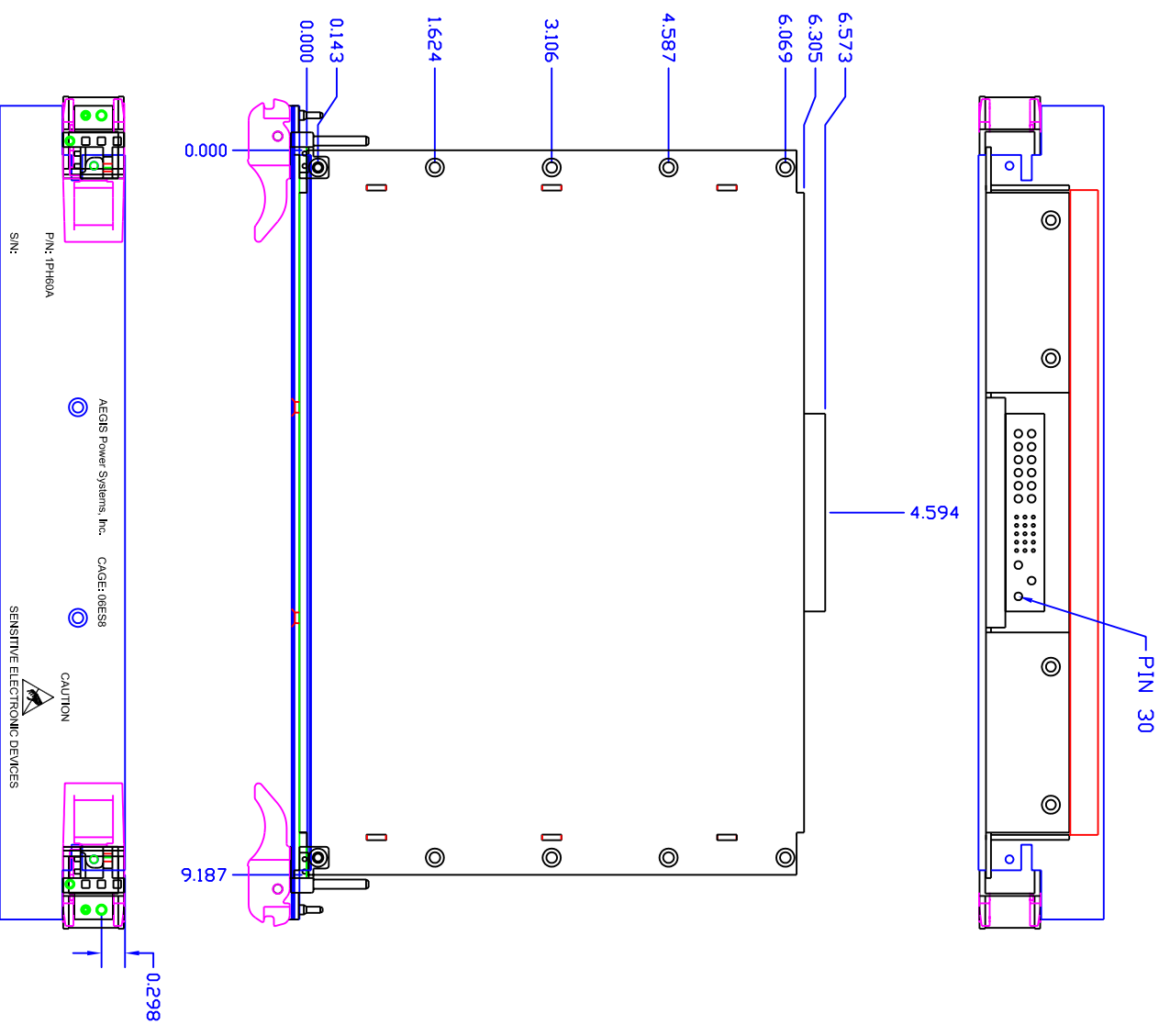
Contact AEGIS Power  
Systems before connecting  
power supply units in parallel  
or connecting the Share Pins.

REVISONS		DATE	APPROVED
ZONE	REV	DESCRIPTION	
A01	INITIAL RELEASE	09/24/09	NVM
A02	REV A02 BASEPLATE	09/30/09	NVM
A03	MOVED WEDGE LOCATION	10/06/09	NVM
A04	EDIT J1:14, J1:22, J1:23	12/08/09	NVM

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

NOTES: UNLESS OTHERWISE SPECIFIED

1. TYPE 1, 6U PLUG-IN UNIT - PRIMARY SIDE RETAINER. 100 INCH PITCH.
  2. CONNECTOR POSITIONING PCIM30V15M400A1
  3. PIN1-12 = 28AMP RATING, PIN13-27 = 3AMP RATING, PIN28,29 AND 30 = 40AMP RATING
- J1:1 - V1 RETURN
  - J1:2 - V2 RETURN
  - J1:3 - V1 RETURN
  - J1:4 - V2 RETURN
  - J1:5 - V1 RETURN
  - J1:6 - V3 RETURN
  - J1:7 - V2 +OUT
  - J1:8 - V1 +OUT
  - J1:9 - V1 +OUT
  - J1:10 - V2 +OUT
  - J1:11 - V1 +OUT
  - J1:12 - V3 +OUT
  - J1:13 - V4 RETURN
  - J1:14 - V4 +OUT
  - J1:15 - V1 +SENSE
  - J1:16 - V1 SHARE-
  - J1:17 - V1 SHARE+
  - J1:18 - V1 -SENSE
  - J1:19 - V3 SHARE-
  - J1:20 - V3 SHARE+
  - J1:21 - NC
  - J1:22 - NC
  - J1:23 - NC
  - J1:24 - V2 SHARE+
  - J1:25 - V2 SHARE-
  - J1:26 - V2 -SENSE
  - J1:27 - V2 +SENSE
  - J1:28 - CHASSIS
  - J1:29 - NEUTRAL
  - J1:30 - LINE



AEGIS POWER SYSTEMS, INC. PROPRIETARY INFORMATION. NO DISCLOSURE, REPRODUCTION, OR USE OF ANY PART HEREOF MAY BE MADE EXCEPT BY EXPRESS WRITTEN PERMISSION OF AEGIS POWER SYSTEMS, INC.

AEGIS POWER SYSTEMS  
MURPHY, NORTH CAROLINA

VME SINGLE PHASE PFC 375W  
MECHANICAL LAYOUT  
AEGIS P/N: 1PH604A

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANG. DEGREES	CONTRACT NO.	DATE	TITLE
* N/A		06/16/09	VME SINGLE PHASE PFC 375W MECHANICAL LAYOUT
xxx ± .005			
xxx ± .02			
xxx ± .05			
MATERIAL	APPROVALS	DATE	
SEE NOTE 2	NVM	06/16/09	
CHECKED			
PROJ. ENG.			
FINISH			
SEE NOTE 3			
NEXT ASSY			
USED DN			
APPLICATION			
DO NOT SCALE DRAWING			
SCALE 1/1			
SIZE FSCM NO.	DWG NO.	REV	
D	06ES8	1PH604A-M00	A04
QUALITY			