

1PH404A

AC-DC VME Power Supply Card

(Document Rev A5, 11/30/2015)



**Single Phase 400Hz 115/220Vac Input
3 or 4 Output, 375W Max Combined Total**

Market: Military, Industrial

Application: Electronic Equipment Rack

Features

- 115/220Vac per MIL-STD-704F*
- 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	360Hz - 440Hz
Temperature	+85	°C	Refer to Figure 1
Output Power	375	W	All outputs combined
Input power	455/450	W	115Vac/220Vac Input
+5.0Vdc output	200	W	
+3.3Vdc output	150/50	W	Depends on output configuration
+12.0Vdc output	60/125	W	Depends on output configuration
-12.0Vdc output	12	W	

Product Highlights

This dual slot 8HP (1.6") wide 6U high filtered ac-dc power supply converter card can be configured with three or four outputs available (+5Vdc, 3.3Vdc, and +12Vdc) or (+5Vdc, 3.3Vdc, +12Vdc and -12Vdc). This Military Mil-COTS ac-dc 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 fan cooled ac-dc power supply converter provides users with higher efficiency (86% with 220Vac input), lower weight (4.1 lbs. typical), and higher power (up to 375W all outputs combined).

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.)

Input voltage:	115/220Vac Nominal (95Vac - 250Vac), 400Hz (360Hz - 440Hz). Transient 70Vac to 270Vac, 100mSec. Designed to meet MIL-STD-704F Normal and Abnormal Range.
Input line current:	4.1A @ 115Vac, 2.1A @ 220Vac.
Input power:	455W @ 115Vac, 450W @ 220Vac, Typical.
Power Factor:	0.99 Typical @ 360Hz - 440Hz.
Output power:	375W Max. all outputs combined. See Fig 1 for output power derating.
Holdup Time:	2mSec 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 fan air across attached cooling fins on power card.
Package:	Dual slot pluggable slide-in card with attached cooling fins.
Dimensions:	6U high x 8HP wide (1.6") x 160mm deep. (See mechanical drawing).
Weight:	4.1 lbs. 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).

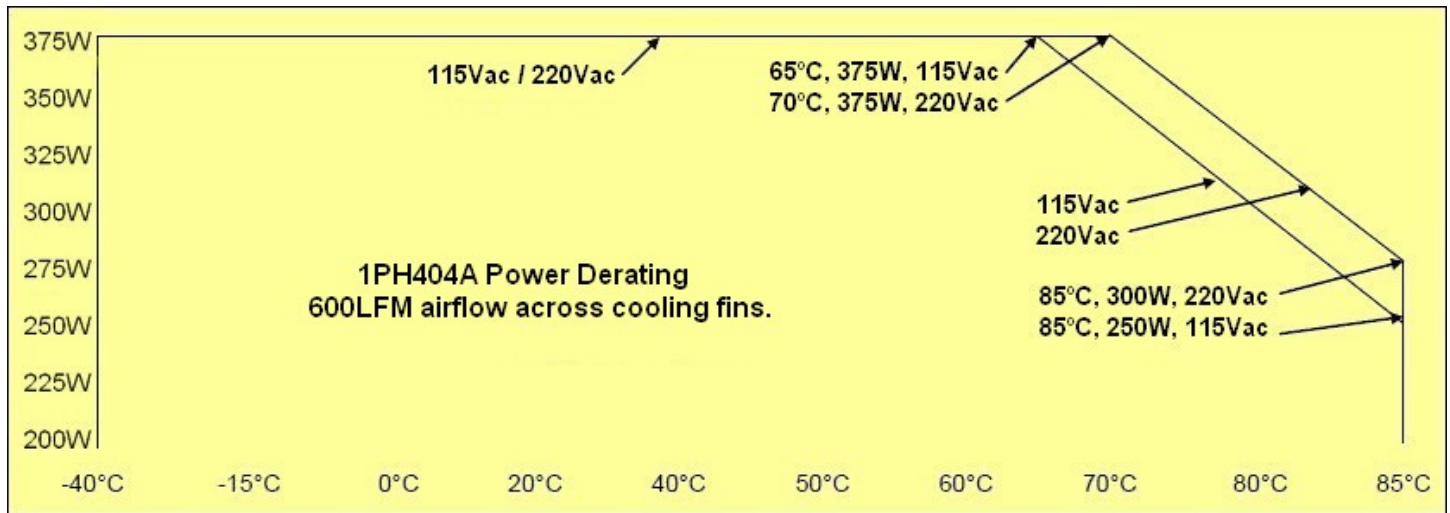
Specifications subject to change without notice.

Table 2: Voltage Outputs

Part Number	Vdc out	Watts out	Amps out	Ripple (20MHz BW)
1PH404A-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	150mVp-p
	-12 Vdc	12 W	1 A	150mVp-p
*Max total power all outputs combined 375W.				

Part Number	Vdc out	Watts out	Amps out	Ripple (20MHz BW)
1PH404A-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	150mVp-p
*Max total power all outputs combined 375W.				

Figure 1: 1PH404A Power De-rating for Temperature and Input Voltage



Connector Pin Out Assignment

30 Pin Positronic Connector
P/N PCIM30W15M400A1 or Equivalent

Connector J1:

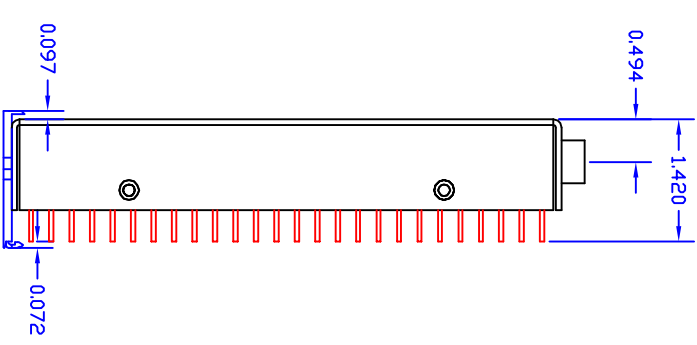
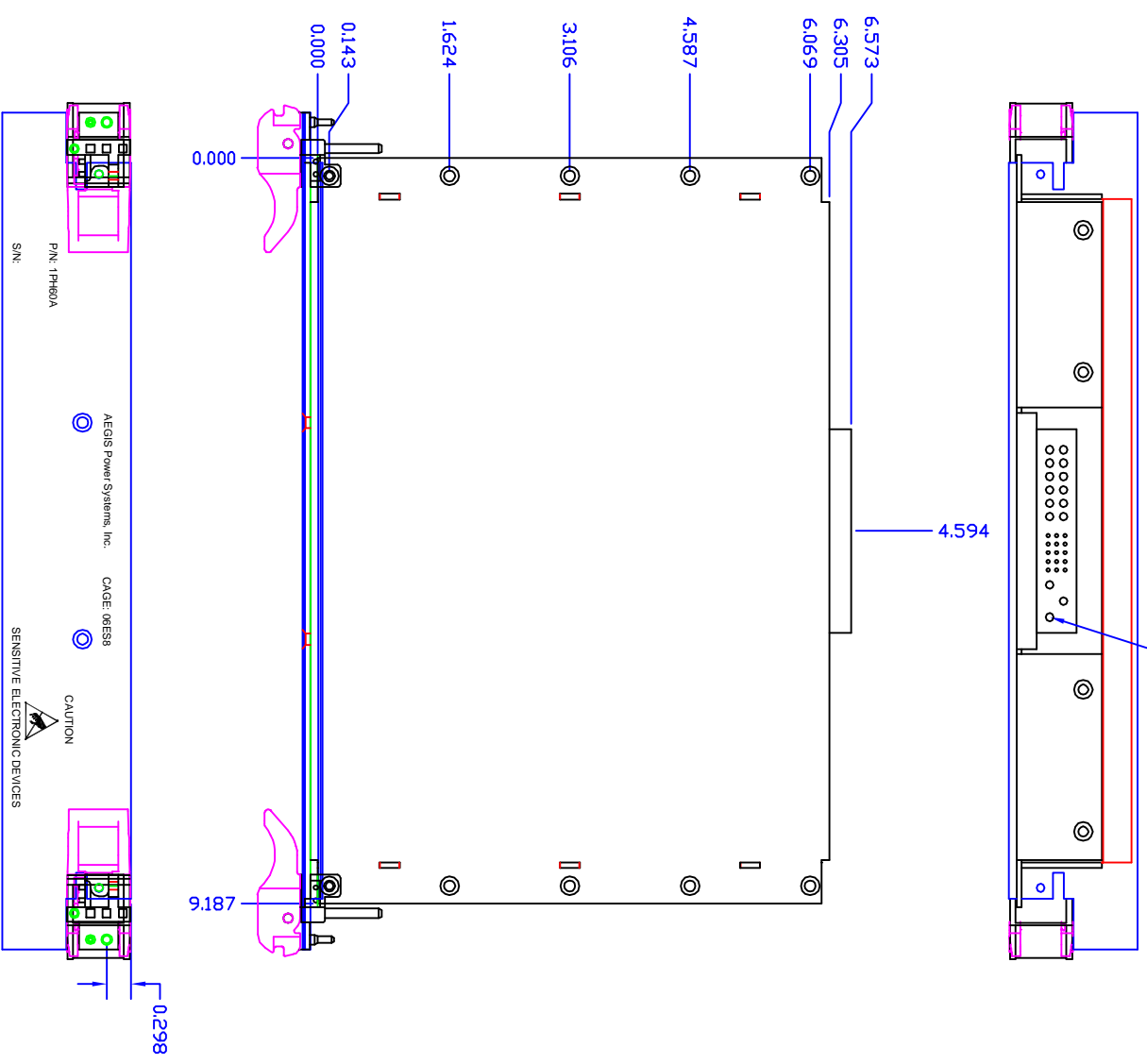
Pin 1	V1 Return
Pin 2	V2 Return
Pin 3	V1 Return
Pin 4	V2 Return
Pin 5	V1 Return
Pin 6	V3 Return
Pin 7	V1 Pos Out
Pin 8	V2 Pos Out
Pin 9	V1 Pos Out
Pin 10	V2 Pos Out
Pin 11	V1 Pos Out
Pin 12	V3 Pos Out
Pin 13	V4 Return
Pin 14	V4 Neg Out
Pin 15	V1 Pos Sense
Pin 16	V1 Share Pos
Pin 17	V1 Share Neg
Pin 18	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.

REV		DESCRIPTION		DATE		APPROVED	
A01	REV	INITIAL RELEASE		09/24/09	MVM		
A02	REV	REV A02 BASEPLATE		09/30/09	MVM		
A03	REV	MOVED WEDGE LOCATION		10/06/09	MVM		
A04	REV	EDIT J114, J122, J123		12/08/09	MVM		

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

- NOTES:
1. TYPE 1, 6U PLUG-IN UNIT - PRIMARY SIDE RETAINER. 100 INCH PITCH. (FIGURE 10 OF VITA 482, 12/26/07)
 2. CONNECTOR POSTRONIC PCIM30V15M400A1
 3. PIN1-12 = 28AMP RATING, PIN13-27 = 3AMP RATING, PIN28,29 AND 30 = 40AMP RATING
- J11 - V1 RETURN
 J12 - V2 RETURN
 J13 - V1 RETURN
 J14 - V2 RETURN
 J15 - V1 RETURN
 J16 - V3 RETURN
 J17 - V2 RETURN
 J18 - V1 RETURN
 J19 - V2 RETURN
 J20 - V3 RETURN
 J21 - V1 +OUT
 J22 - V2 +OUT
 J23 - V1 +OUT
 J24 - V2 +OUT
 J25 - V3 +OUT
 J26 - V1 -SENSE
 J27 - V2 -SENSE
 J28 - V3 -SENSE
 J29 - CHASSIS MASSIVE
 J30 - NEUTRAL LINE



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS AND DECIMALS	
± N/A	± .02
± .005	± .05

CONTRACT NO.	DATE	APPROVALS
	06/16/09	MVM

TITLE	DRAWN	CHECKED
VME SINGLE PHASE PFC 375W MECHANICAL LAYOUT		
AEGIS P/N: 1PH404A		

SIZE FROM NO.	DWG NO.	REV
D	1PH404A-M00	A04

SCALE	SHEET
1/1	1 OF 1

APPLICATION	USED ON

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VME SINGLE PHASE PFC 375W
 MECHANICAL LAYOUT