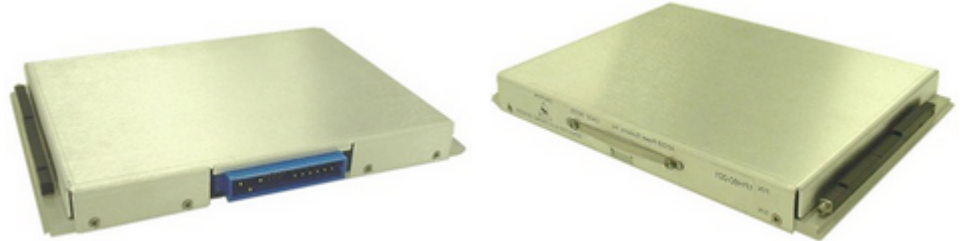


1PH404

AC-DC VME Power Supply Card

(Document Rev A05, 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 *
- 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 - 250	Vac	360-440Hz
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 single slot 5HP (1.0") wide 6U high 400Hz 115/220Vac filtered ac-dc power supply converter card has 3 or 4 outputs available (+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 single slot wedgelock conduction cooled ac-dc power supply converter provides users with higher efficiency (86% with 220Vac input), lower weight (3.5 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, 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.)

Input voltage:	115/220Vac 400Hz Nominal. Range 95Vac - 250Vac, 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 Table 2 & Fig 1 for output power derating.
Holdup Time:	2mSec Typical.
Output voltages:	+5Vdc, +3.3Vdc, +12Vdc, -12Vdc. See table 2. See Figure 1 (power derating).
Output ripple:	1% Vout except 3.3Vout is 1.52%. (Vpk-pk 20 MHz BW limit). 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:	Conduction through baseplate wedgelocks attached to customer card rack.
Package:	Single slot pluggable slide-in card with attached baseplate.
Dimensions:	6U high x 5HP wide (1.0") x 160mm deep. (See mechanical drawing).
Weight:	3.5 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).

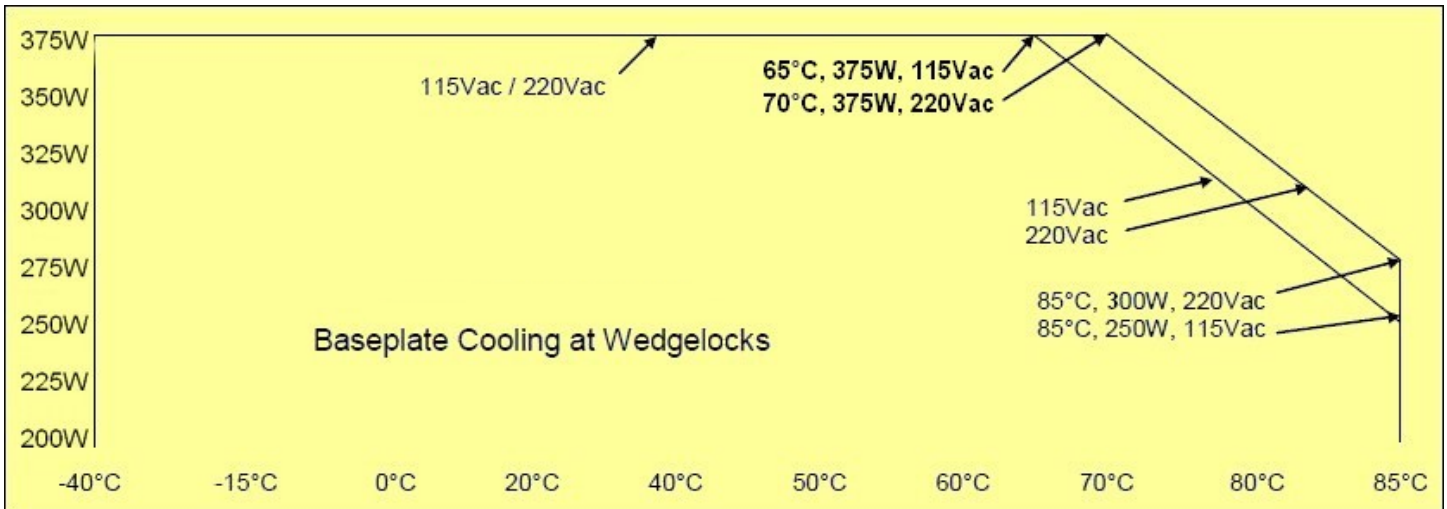
Specifications subject to change without notice.

Table 2: Voltage Outputs

Part Number	Vdc out	Watts out	Amps out	Ripple (20MHz BW)
1PH404-001*	+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
* Total combined output is 375W maximum.				

Part Number	Vdc out	Watts out	Amps out	Ripple (20MHz BW)
1PH404-002*	+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
* Total combined output is 375W maximum.				

Figure 1: 1PH404 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	V4 Share Pos
Pin 23	V4 Share Neg
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

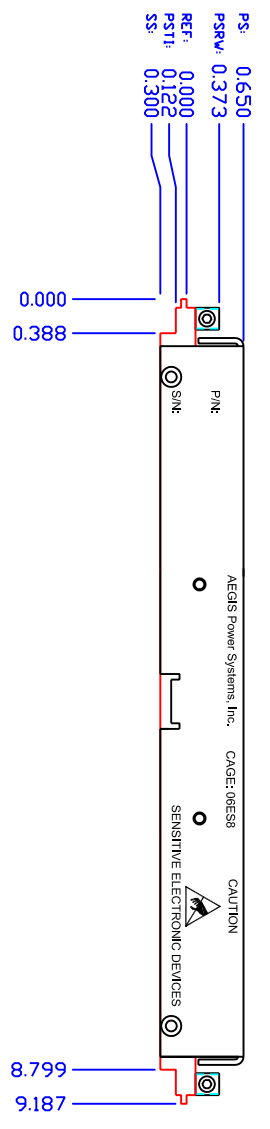
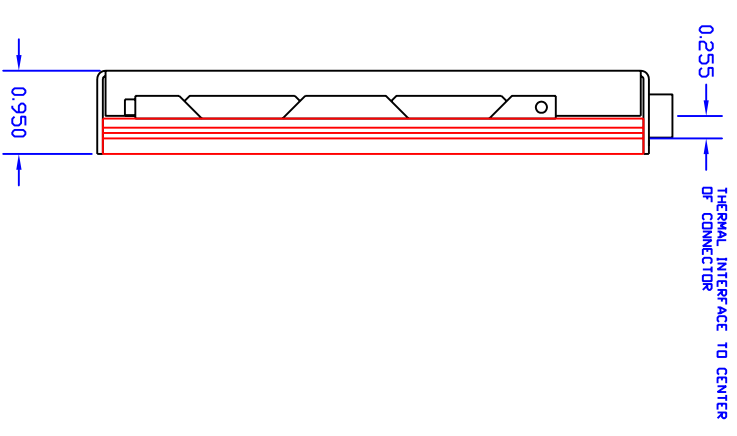
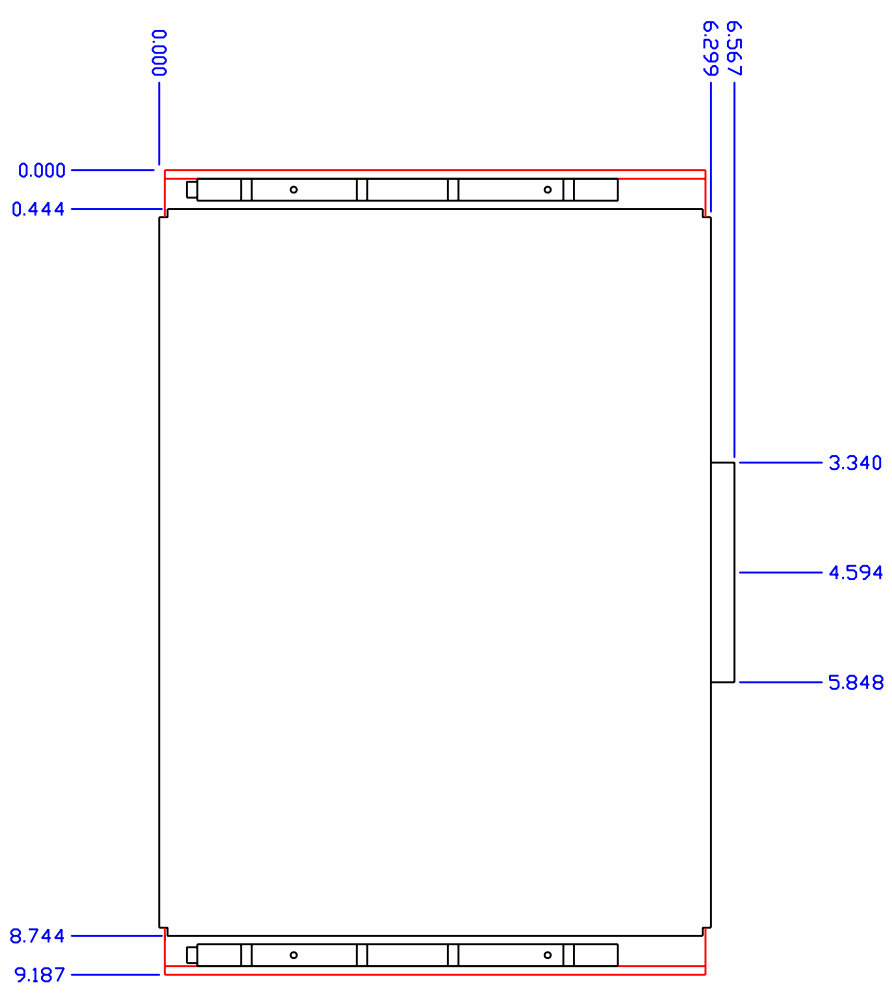
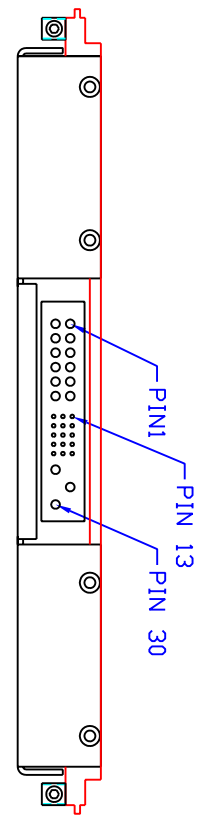
CAUTION:
Contact AEGIS Power
Systems before connecting
power supply units in parallel
or connecting the Share Pins.

ZONE	REV	DESCRIPTION	DATE	APPROVED
A01	INITIAL RELEASE	09/24/09	MVM	
A02	REV A02 BASEPLATE	09/30/09	MVM	
A03	MOVED WEDGE LOCATION	10/06/09	MVM	

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

NOTES: UNLESS OTHERWISE SPECIFIED

1. TYPE 1, 6U PLUG-IN UNIT - PRIMARY SIDE RETAINER. 1.00 INCH PITCH.
 2. CONNECTOR POSITIONING PCIM30W15M400A1
 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 - V3 RETURN
 - J16 - V1 RETURN
 - J17 - V2 RETURN
 - J18 - V3 RETURN
 - J19 - V1 +OUT
 - J20 - V2 +OUT
 - J21 - V3 +OUT
 - J22 - V1 +OUT
 - J23 - V2 +OUT
 - J24 - V3 +OUT
 - J25 - V1 +OUT
 - J26 - V2 +OUT
 - J27 - V3 +OUT
 - J28 - CHASSIS
 - J29 - NEUTRAL
 - J30 - LINE



UNLESS OTHERWISE SPECIFIED		CONTRACT NO.	
DIMENSIONS ARE IN INCHES	FRACTIONS ARE DECIMALS	APPROVALS	DATE
TOLERANCES ARE:	DECIMALS	MVM	06/16/09
± N/A	xx ± .02		
xxx ± .005	± .5		
MATERIAL	SEE NOTE 2		
FINISH	SEE NOTE 3		
DO NOT SCALE DRAWING			
NEXT ASSY	USED ON		
APPLICATION			

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AEGIS POWER SYSTEMS		TITLE	
MURPHY, NDRTH CAROLINA		VME SINGLE PHASE PFC 375W	
AEGIS P/N: 1PH404		MECHANICAL LAYOUT	
SIZE	FSCM NO.	DWG NO.	REV
D	06ES8	1PH404-M00	A03
SCALE	1/1	SHEET	1 OF 1