

1PH404

Overview

AC-DC Power Supply Card
 Single Phase 400Hz 115/220Vac Input
 3 or 4 Outputs, 375W Max Combined Output

Market(s)

Military, Industrial

Typical Application(s)

Electronic Equipment Rack



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 applicable 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 wedge-lock conduction cooled ac-dc power supply converter provides users with higher efficiency (86% with 220Vac input), lower weight (3.05 lbs.), and higher power (up to 375W).

Features

- 115/220Vac per MIL-STD-704F*
- 3 or 4 Output, 375W combined
- Dual Output, 375W combined
- MIL-STD-810F Environmental *
- MIL-STD-461E EMI *
- Single Slot VME Power Card

* Designed to meet applicable portions of this standard. Contact Aegis Power Systems, Inc. for specific details.

Table 1: Maximum Continuous Operating Ratings

Parameter	Rating	Unit	Notes
Vin max range	95 to 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	

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.)

Parameter	Notes
Input Voltage	115/220Vac 400Hz Nominal. Range 95Vac - 250Vac, 360Hz - 440Hz. Transient 70Vac to 270Vac, 100 ms Designed to meet MIL-STD-704F Normal and Abnormal Range.
Input 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	2ms 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	500ms Max.
Voltage Set Point	± 2.5%.
Line/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 x 5HP x 160mm (see mechanical drawing on last page).
Weight	3.05 lbs. Typical.
Connector	1ea Positronic PCIM30W15M400A1 or equivalent (see Table 3).
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 Output (Nominal)

1PH404-001**	V1	V2	V3	V4
Voltage	+5Vdc	+3.3dc	+12dc	-12dc
Current	40A	45A	5A	1A
Power	200W	150W	60W	12W
Ripple	50mVpk-pk*	50mVpk-pk*	150mVpk-pk*	1150mVpk-pk*

* 20MHz Bandwidth Limited.

**Total combined output is 375W maximum.

1PH404-002**	V1	V2	V3
Voltage	+5Vdc	+3.3dc	+12dc
Current	40A	15.1A	10.4A
Power	200W	50W	125W
Ripple	50mVpk-pk*	50mVpk-pk*	150mVpk-pk*

* 20MHz Bandwidth Limited.

**Total combined output is 375W maximum.

Figure 1: 1PH404 Power De-rating for Temperature and Input Voltage per below graph

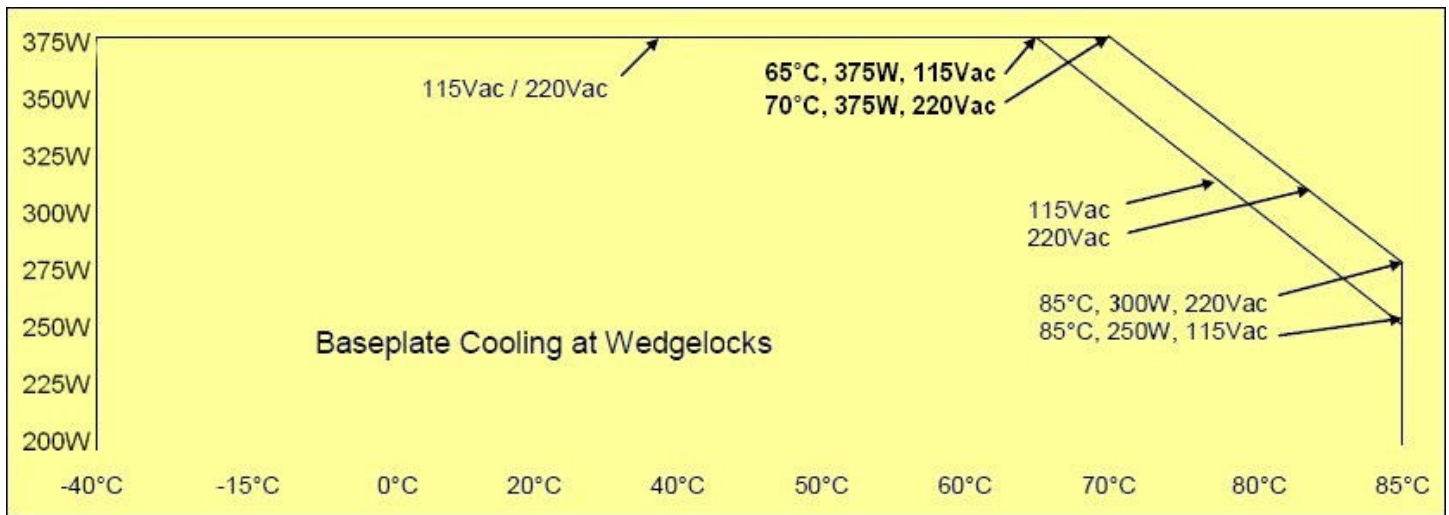


Table 3: 1PH404-XXX Connector Specifications

30 Pin Positronic Connector - P/N PCIM30W15M400A1 or Equivalent

Contact Designation	Conductor Circuit
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.

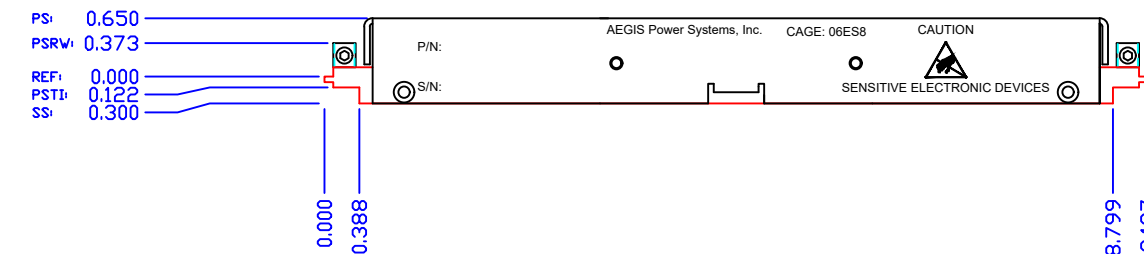
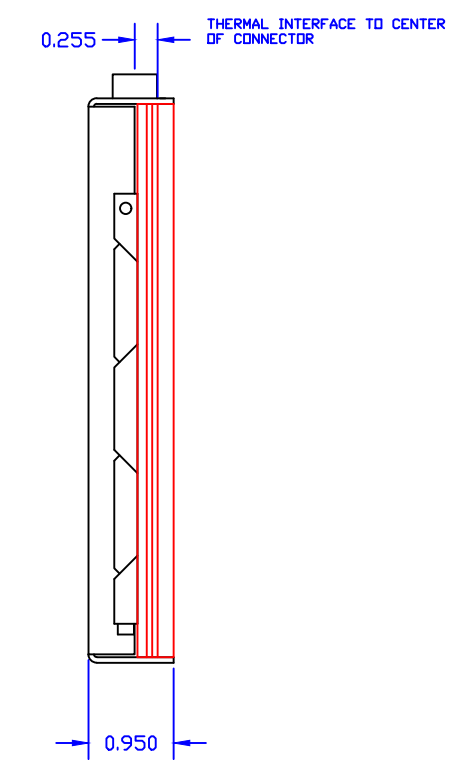
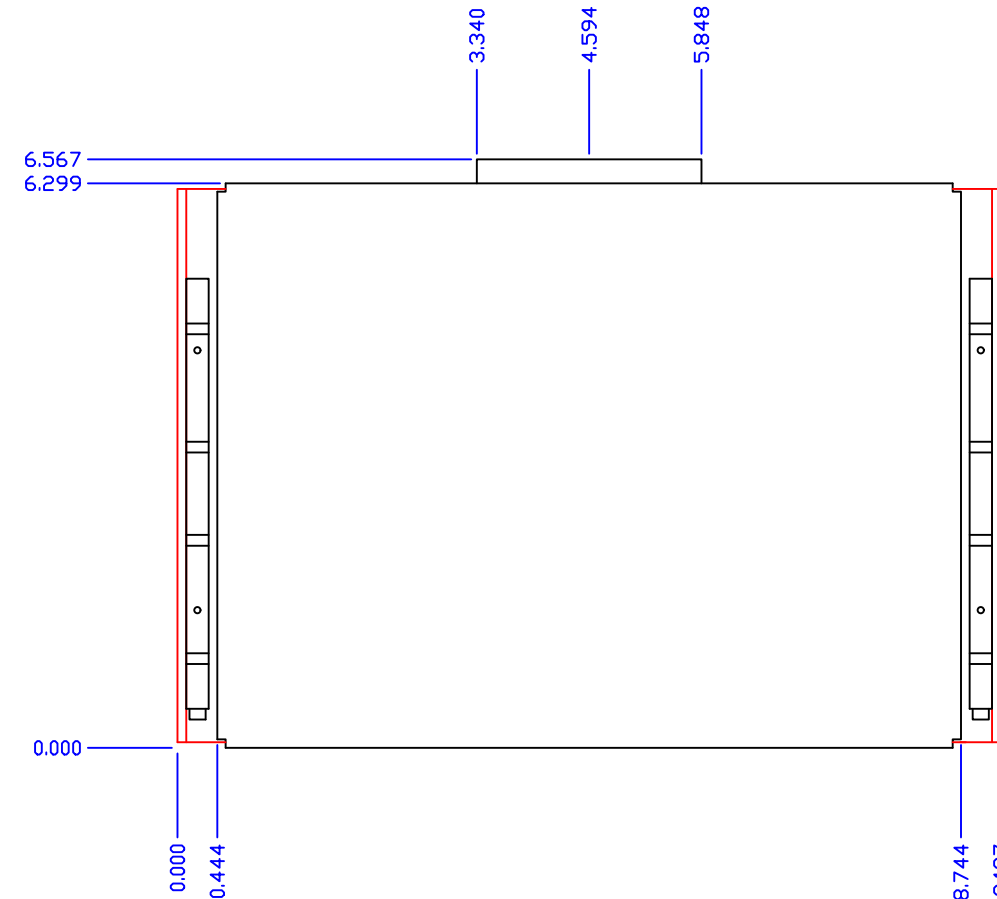
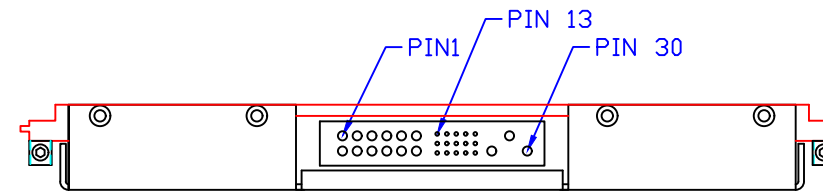
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A01	INITIAL RELEASE	09/24/09	MVM
	A02	REV A02 BASEPLATE	09/30/09	MVM
	A03	MOVED WEDGE LOCATION	10/06/09	MVM

NOTES: UNLESS OTHERWISE SPECIFIED

- TYPE 1, 6U PLUG-IN UNIT - PRIMARY SIDE RETAINER. 1.00 INCH PITCH.
- CONNECTOR POSITRONIC PCIM30W15M400A1
- 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 - V1 +OUT
- J18 - V2 +OUT
- J19 - V1 +OUT
- J110 - V2 +OUT
- J111 - V1 +OUT
- J112 - V3 +OUT
- J113 - V4 RETURN
- J114 - V4 +OUT
- J115 - V1 +SENSE
- J116 - V1 SHARE+
- J117 - V1 SHARE-
- J118 - V1 -SENSE
- J119 - V3 SHARE+
- J120 - V3 SHARE-
- J121 - NC
- J122 - V4 SHARE+
- J123 - V4 SHARE-
- J124 - V2 SHARE+
- J125 - V2 SHARE-
- J126 - V2 -SENSE
- J127 - V2 +SENSE
- J128 - CHASSIS
- J129 - NEUTRAL
- J130 - LINE

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.



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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES		
TOLERANCES ARE:		
FRACTIONS	DECIMALS	DEGREES
± N/A	.XX ± .02	± .5
	.XXX ± .005	

CONTRACT NO.		AEGIS POWER SYSTEMS MURPHY, NORTH CAROLINA	
APPROVALS	DATE	TITLE	
DRAWN MVM	06/16/09	VME SINLE PHASE PFC 375W MECHANICAL LAYOUT	
CHECKED		AEGIS P/N: 1PH404	
PROJ. ENG.		SIZE	FSCM NO.
MFG.		D	06ES8
QUALITY		DWG NO.	REV
		1PH404-M00	A03
SCALE 1/1		SHEET 1 OF 1	

APPLICATION	DO NOT SCALE DRAWING
NEXT ASSY	USED IN