

# 1PH400

## Overview

AC-DC Power Supply Card  
 Single Phase 400Hz 115/220Vac Input  
 One Output, 650W Max

## Market(s)

Military, Industrial

## Typical Application(s)

Electronic Equipment Rack



## Product Highlights

This single slot 5HP wide 6U high filtered ac-dc power supply converter card has a single output available from three possible factory configured output selections (+12Vdc, +28Vdc, or +48Vdc) with 600W or 650W available depending on the output voltage. This Military MIL-COTS power supply solution is designed to meet applicable portions of MIL-STD-704F input requirements, designed to meet applicable portions of MIL-STD-810F vibration and shock requirements and applicable portions of the MIL-STD-461E EMI requirements. When compared to VME power supplies using conventional technology, this single slot conduction cooled ac-dc power supply converter provides users with higher efficiency (83%), lower weight (3.2 lbs.), and higher power (up to 650W).

## Features

- 115/220Vac per MIL-STD-704F\*
- Single Output, 600/650W
- 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	650	W	28Vdc Output
Input power	783	W	115Vac 400Hz Input
Max +12Vdc power	600	W	50A
Max +28Vdc power	650	W	23.21A
Max +48Vdc power	600	W	12.5A

## 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	95Vac - 250Vac, 360Hz - 440Hz. Transient 70Vac to 270Vac, 100mSec. Designed to meet MIL-STD-704F Normal and Abnormal Range.
Input 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 @ 360Hz - 440Hz.
Output Power	600/650W Max. See Table 2. See Figure 1 for output power derating.
Holdup Time	2ms Typical.
Output Voltages	+12Vdc, +28Vdc, +48Vdc. 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	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	3.2 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).

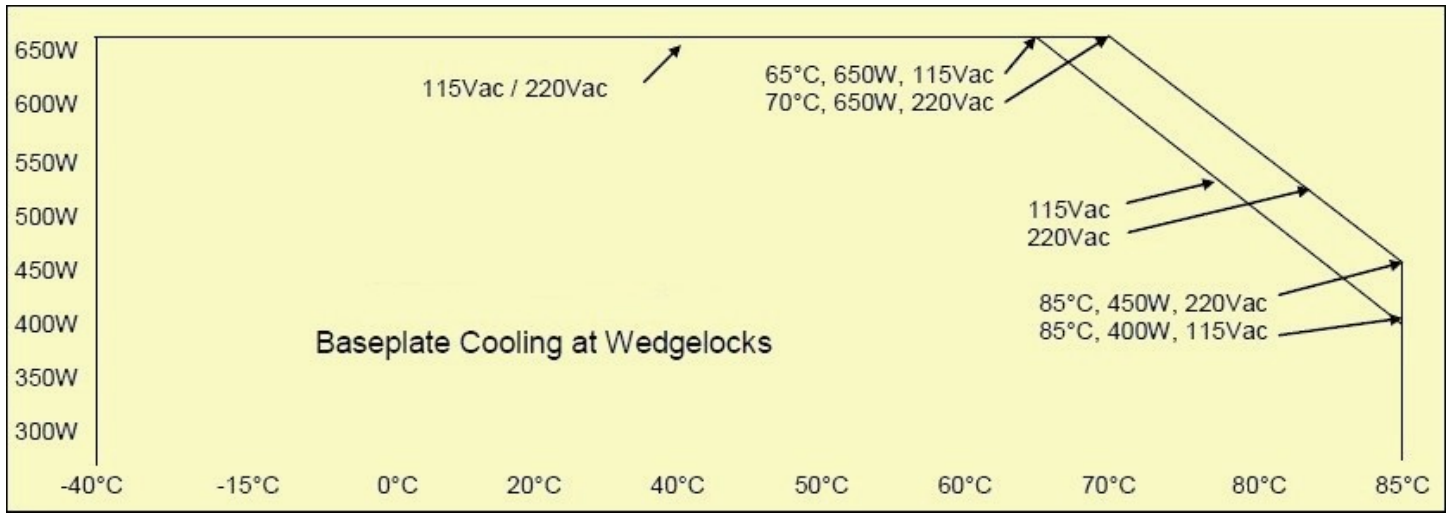
*Specifications subject to change without notice.*

**Table 2: Voltage Output (Nominal)**

	1PH400-001	1PH400-002	1PH400-003
<b>Voltage</b>	+28Vdc	+48Vdc	+50.0Vdc
<b>Current</b>	23.2A	12.5A	1A
<b>Power</b>	650W	600W	600W
<b>Ripple</b>	300mVpk-pk*	480mVpk-pk*	200mVpk-pk*

\* 20MHz Bandwidth Limited.

**Figure 1: 1PH400 Power De-rating for Temperature and Input Voltage per below graph**



**Table 3: 1PH400-XXX Connector Specifications**

**30 Pin Positronic Connector - P/N PCIM30W15M400A1 or Equivalent**

Contact Designation	Conductor Circuit
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.

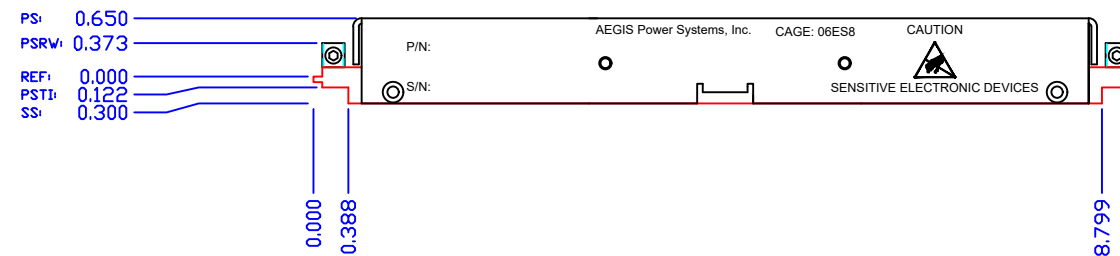
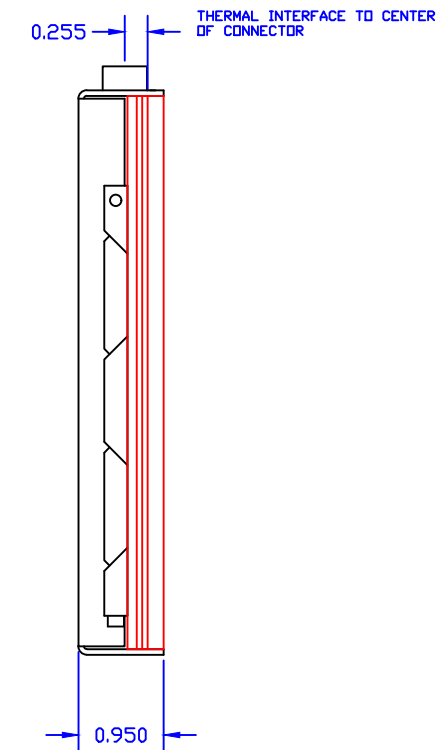
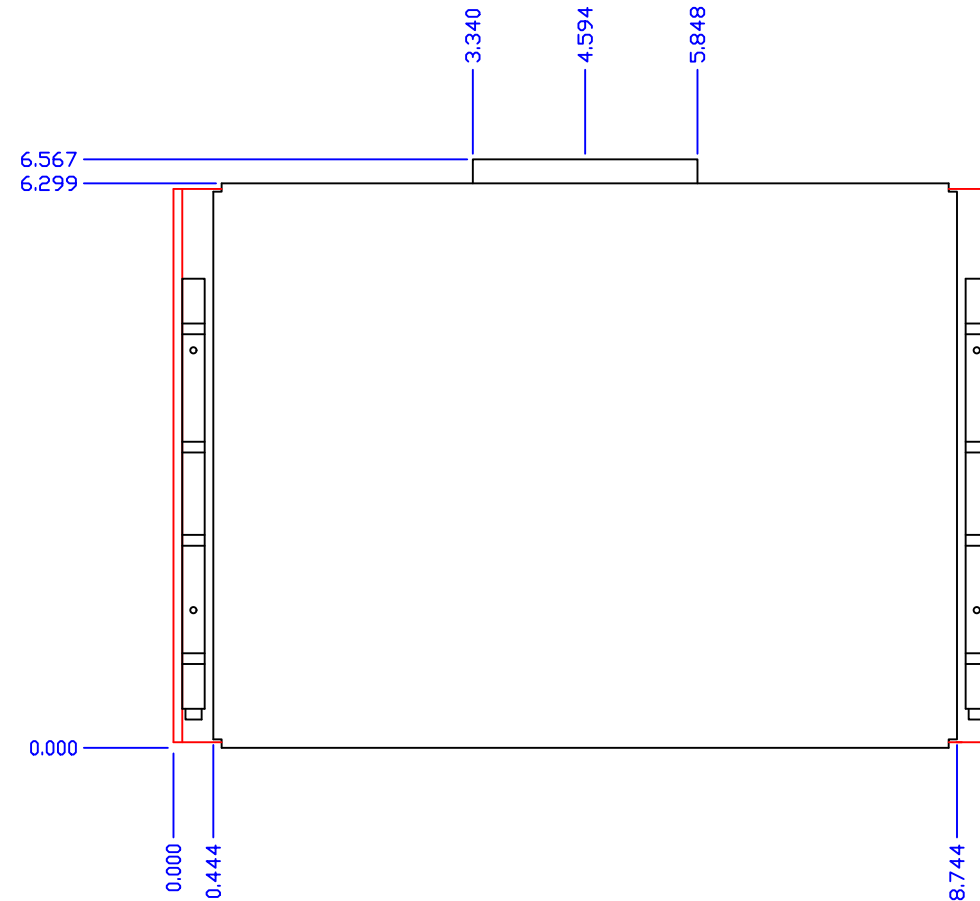
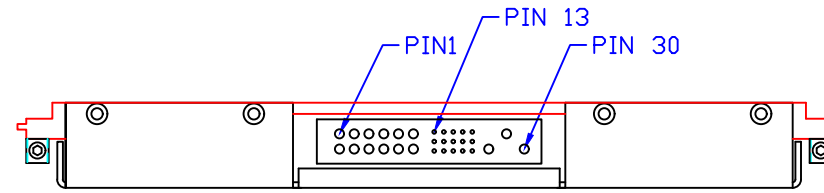
DVG NO.		SH	REV	REVISIONS	
ZONE	REV	DESCRIPTION	DATE	APPROVED	
	A01	INITIAL RELEASE	09/24/09	MVM	
	A02	REV A02 BASEPLATE	09/30/09	MVM	
	A03	MOVED WEDGE LOCATION	10/06/09	MVM	

NOTES: UNLESS OTHERWISE SPECIFIED

- TYPE 1, 6U PLUG-IN UNIT - PRIMARY SIDE RETAINER. 1.00 INCH PITCH.  
(FIGURE 10 OF VITA 48.2, 12/26/07)
- CONNECTOR POSITRONIC PCIM30W15M400A1
- PIN1-12 = 28AMP RATING, PIN13-27 = 3AMP RATING, PIN28,29 AND 30 = 40AMP RATING

- J11 - #1 RETURN
- J12 - #2 RETURN
- J13 - #1 RETURN
- J14 - #2 RETURN
- J15 - #1 RETURN
- J16 - #2 RETURN
- J17 - #1 +DUT
- J18 - #2 +DUT
- J19 - #1 +DUT
- J110 - #2 +DUT
- J111 - #1 +DUT
- J112 - #2 +DUT
- J113 - NC
- J114 - NC
- J115 - #1 +SENSE
- J116 - NC
- J117 - NC
- J118 - #1 -SENSE
- J119 - NC
- J120 - NC
- J121 - SHARE+
- J122 - NC
- J123 - NC
- J124 - SHARE-
- J125 - NC
- J126 - #2 -SENSE
- J127 - #2 +SENSE
- J128 - CHASSIS
- J129 - NEUTRAL
- J130 - LINE

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



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.

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

APPROVALS	DATE
DRAWN MVM	06/16/09
CHECKED	
PROJ. ENG.	
MFG.	
QUALITY	
NEXT ASSY	USED IN
APPLICATION	DO NOT SCALE DRAWING

CONTRACT NO.		AEGIS POWER SYSTEMS MURPHY, NORTH CAROLINA	
APPROVALS		DATE	
DRAWN MVM		06/16/09	
CHECKED			
PROJ. ENG.			
MFG.			
QUALITY			
SIZE D	FSCM NO. 06ES8	DVG NO. 1PH400-M00	REV A03
SCALE 1/1			SHEET 1 OF 1

D

D

C

C

B

B

A

A