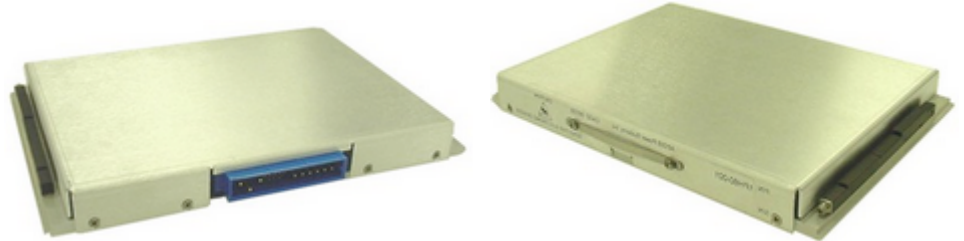


# 1PH402

## AC-DC VME Power Supply Card

(Document Rev A06, 09/01/2015)



**Single Phase 400Hz 115/220Vac Input  
Dual Output, 500W Max Combined Total**

**Market: Military, Industrial**

**Application: Electronic Equipment Rack**

### Features

- 115/220Vac per MIL-STD-704F\*
- Dual Output, 500W 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 to 250	Vac	360-440Hz
Temperature	+85	°C	Refer to Figure 1
Output Power	500	W	@ 65°C with 115Vac Input
Output Power	500	W	@ 70°C with 220Vac Input
Input power	610	W	@ 115Vac 400Hz Input
Input power	590	W	@ 220Vac 400Hz Input
+5Vdc output	200	W	
+12Vdc output	300	W	

### Product Highlights

This single slot 5HP (1.0") wide 6U high filtered ac-dc power supply converter card has dual outputs available of +5Vdc at 200W and +12Vdc at 300W. 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 single slot wedgelock conduction cooled ac-dc power supply converter provides users with higher efficiency (85% with 220Vac input), lower weight (3.5 lbs), and higher power (up to 500W).

**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.)**

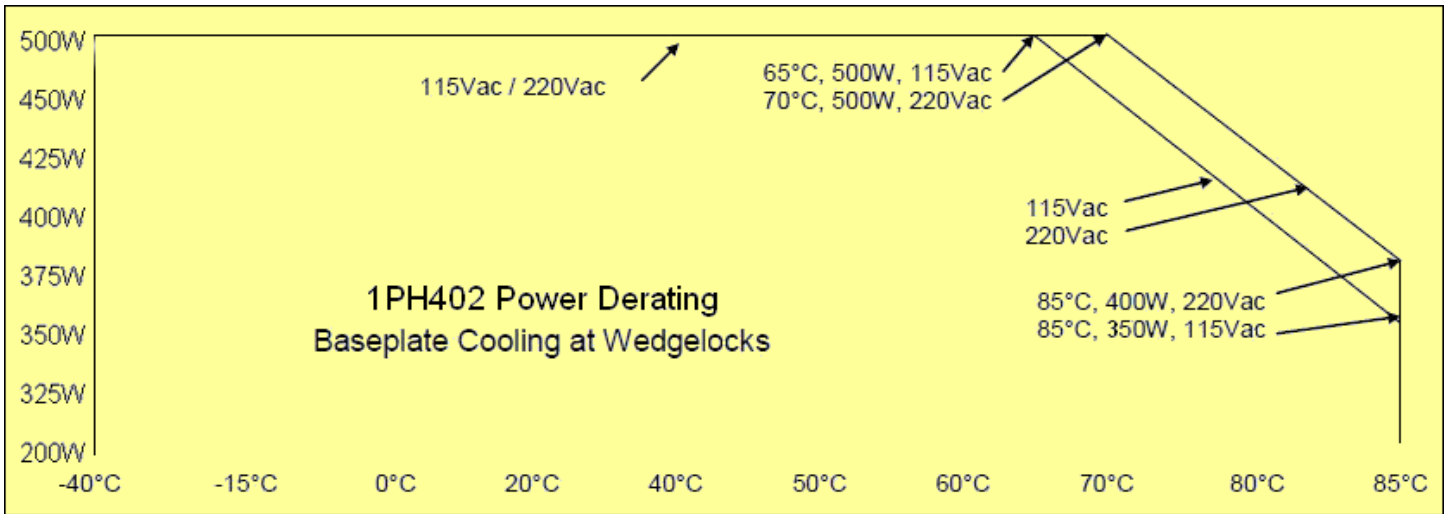
<b>Input voltage:</b>	95Vac - 250Vac, 360Hz - 440Hz. Transient 70Vac to 270Vac, 100mSec. Designed to meet MIL-STD-704F Normal and Abnormal Range.
<b>Input line current:</b>	5.42A @ 115Vac, 2.74A @ 220Vac.
<b>Input power:</b>	610W @ 115Vac, 590W @ 220Vac, Typical.
<b>Power Factor:</b>	0.99 Typical @ 360Hz - 440Hz.
<b>Output power:</b>	500W Max. See Table 2. See Figure 1 for output power derating.
<b>Holdup Time:</b>	2mSec Typical.
<b>Output voltages:</b>	+5Vdc & +12Vdc. See table 2. See Figure 1 for output power derating.
<b>Output ripple:</b>	See table 2.
<b>Current Limit:</b>	Short circuit protected with automatic recovery.
<b>Efficiency:</b>	82% /115VAC, 85% /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>	Conduction through baseplate wedgelocks attached to customer card rack.
<b>Package:</b>	Single slot pluggable slide-in card with attached baseplate.
<b>Dimensions:</b>	6U x 5HP (1.0") x 160mm (see mechanical drawing).
<b>Weight:</b>	3.5 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)
1PH402-001	+5V	200W	40A	50mVp-p
	+12V	300W	25A	120mVp-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	#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	#2 Current Monitor, Analog Output
Pin 14	#2 Temperature, Analog Output
Pin 15	#1 Pos Sense
Pin 16	#1 Current Monitor, Analog Output
Pin 17	#1 Temperature, Analog Output
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:

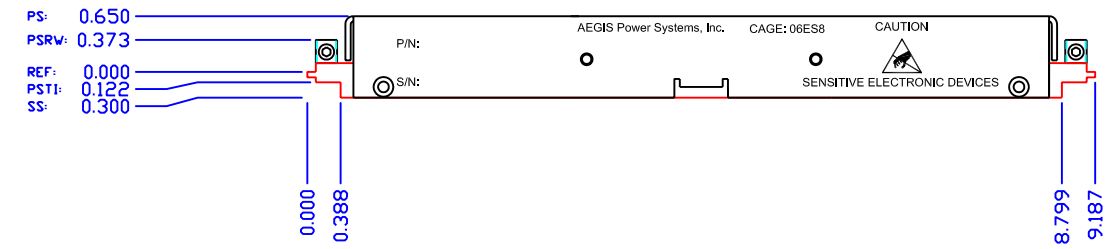
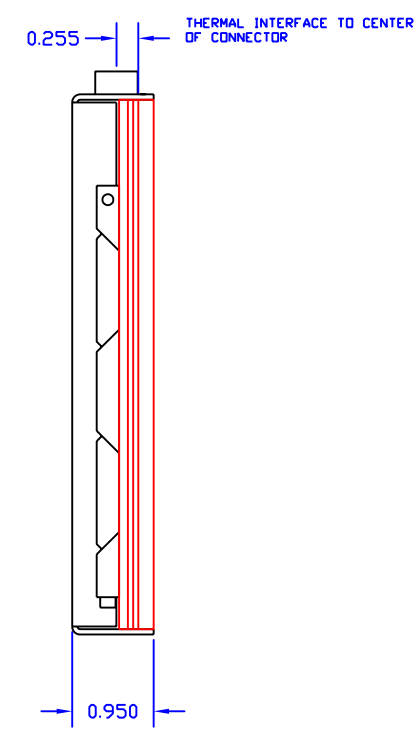
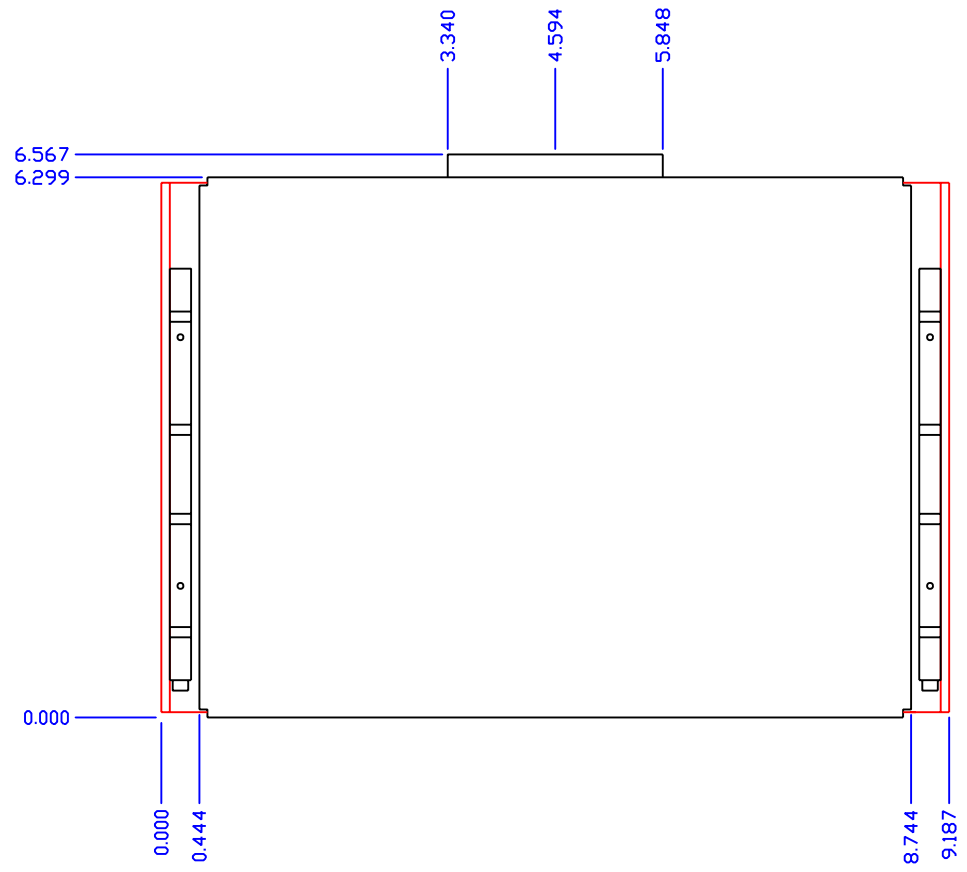
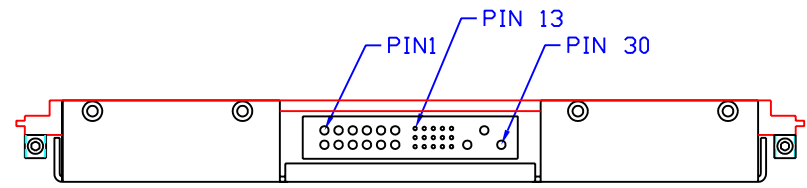
Contact AEGIS Power  
Systems before connecting  
power supply units in parallel  
or connecting the Share Pins.

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  
 1. TYPE 1, 6U PLUG-IN UNIT - PRIMARY SIDE RETAINER. 100 INCH PITCH.  
 (FIGURE 10 OF VITA 48.2, 12/26/07)  
 2. CONNECTOR POSITRONIC PCIM30W15M400A1  
 3. PIN1-12 = 28AMP RATING, PIN13-27 = 3AMP RATING, PIN28,29 AND 30 = 40AMP RATING

- J1:1 - #1 RETURN
- J1:2 - #2 RETURN
- J1:3 - #1 RETURN
- J1:4 - #2 RETURN
- J1:5 - #1 RETURN
- J1:6 - #2 RETURN
- J1:7 - #1 +OUT
- J1:8 - #2 +OUT
- J1:9 - #1 +OUT
- J1:10 - #2 +OUT
- J1:11 - #1 +OUT
- J1:12 - #2 +OUT
- J1:13 - #2 I MONITOR, ANALOG OUT
- J1:14 - #2 TEMP, ANALOG OUT
- J1:15 - #1 +SENSE
- J1:16 - #1 I MONITOR, ANALOG OUT
- J1:17 - #1 TEMP, ANALOG OUT
- J1:18 - #1 -SENSE
- J1:19 - NC
- J1:20 - NC
- J1:21 - SHARE+
- J1:22 - NC
- J1:23 - NC
- J1:24 - SHARE-
- J1:25 - NC
- J1:26 - #2 -SENSE
- J1:27 - #2 +SENSE
- J1:28 - CHASSIS
- J1:29 - NEUTRAL
- J1:30 - LINE

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



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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		CONTRACT NO.		AEGIS POWER SYSTEMS MURPHY, NORTH CAROLINA	
FRACTIONS	DECIMALS	DEGREES	APPROVALS	DATE	TITLE
± N/A	.XX ± .02	± .5	MVM	06/16/09	VME SINLE PHASE PFC 650W MECHANICAL LAYOUT
	.XXX ± .005		CHECKED		AEGIS P/N: 1PH402
MATERIAL	SEE NOTE 2	FINISH	PROJ. ENG.		SIZE D
			MFG.		FSCM NO. 06ES8
NEXT ASSY	USED ON	APPLICATION	DO NOT SCALE DRAWING	DWG NO. 1PH402-M00	REV. A03
				SCALE 1/1	SHEET 1 OF 1