

**Custom Product**

**CWA103**

**AC-DC  
Power Supply**

(Document Rev A02, 12/10/14)

**Single Phase 50/60Hz 220Vac Input  
Multiple Output, 315.5W Max Total**

**Market: Military**

**Application: VME power**

**Features**

- 220Vac +/- 10%, Single Phase, 50/60 Hz +/- 5% input power. Designed to meet portions of MIL-STD-704 and of MIL-STD-1399 \*
- Designed to meet portions of Mil-Std-810F environmental specs.\*
- Designed to meet portions of Mil-Std-461F.\*
- VME Power.

**Table 1: Maximum Ratings**

Parameter	Rating	Unit	Notes
Vin max range	198 to 242	Vac	
Temperature range	+4.4 to +29.4	°C	Up to 15,000ft MSL
Output power	315.5	W	
+5Vdc output	27.5	W	On when enabled
+12Vdc output	144	W	On when enabled
+12Vdc output	144	W	On when power applied

\* Contact AEGIS Power Systems for specific details.

**Product Highlights**

This chassis mount open frame filtered ac-dc power converter has multiple outputs available with N+1 redundancy. This COTS solution works well for Mil-cots and is designed to meet portions of Mil-Std-704 input, of MIL-STD-1399, MIL-STD-810F vibration and shock, and MIL-STD-461E EMI requirements. When compared to VME power supplies using conventional technology, this chassis mount forced air cooled ac-dc power supply converter provides users with higher efficiency (80%), lower weight (10 lbs), and higher power (up to 315.5W, N+1 redundant).

**AEGIS Power Systems, Inc.** specializes in the front end design, development, and manufacture of Rapid Response Custom Switching Power Supplies for defense, industry, telecomm, aircraft, shipboard, rack mount, electric powered vehicle, and Mil-Cots military power supply applications. Contact Aegis for specific details on what can be designed for your particular military power supply application and what portions of a particular military standard can be offered for that power supply.

## **SPECIFICATIONS**

**(Typical at 25°C, nominal line and 100% load, unless otherwise specified.)**

<b><u>Input voltage:</u></b>	Single Phase, 192Vac - 242.5Vac, 57Hz - 63Hz.
<b><u>Input current:</u></b>	1.8A @ 220Vac, typical.
<b><u>Input power:</u></b>	394W @ 220Vac, typical.
<b><u>Power factor:</u></b>	0.99 typical 57Hz - 63Hz.
<b><u>Output power:</u></b>	315.5W Maximum. (N+1 redundant)
<b><u>Output voltages:</u></b>	See table 2 for details.
<b><u>Efficiency:</u></b>	80% Typical, 75% Minimum.
<b><u>Output ripple:</u></b>	See table 2 for details.
<b><u>Current Limit:</u></b>	Short circuit protected with automatic recovery.
<b><u>Start up time:</u></b>	1 Sec. Maximum.
<b><u>Voltage set point:</u></b>	± 2.5%.
<b><u>Line regulation:</u></b>	± 2.5%.
<b><u>Load regulation:</u></b>	± 2.5%.
<b><u>Temperature regulation:</u></b>	± 0.02% / °C.
<b><u>Temperature:</u></b>	4.4°C to +29.4°C Operating. -40°C to +70°C Non-Operating.
<b><u>Cooling:</u></b>	Internal fan, forced fan cooling across internal Heatsink.
<b><u>Package:</u></b>	Chassis mounted open frame with FR4 covers over PWB.
<b><u>Dimensions:</u></b>	3 "H x 7.25"W x 11.75" L (see mechanical drawing).
<b><u>Weight:</u></b>	10 lbs. Typical.
<b><u>Connector:</u></b>	(see mechanical drawing).
<b><u>Vibration:</u></b>	Designed to meet MIL-STD-810F, Method 514.5, Procedure I.
<b><u>Shock:</u></b>	Designed to meet MIL-STD-810F, Method 516.5, Procedure I.
<b><u>Humidity:</u></b>	0 – 95% non-condensing.
<b><u>EMI:</u></b>	Designed to meet MIL-STD-461E (CE101,CE102 and CS101).

Specifications subject to change without notice.

### **Table 2: Voltage Outputs**

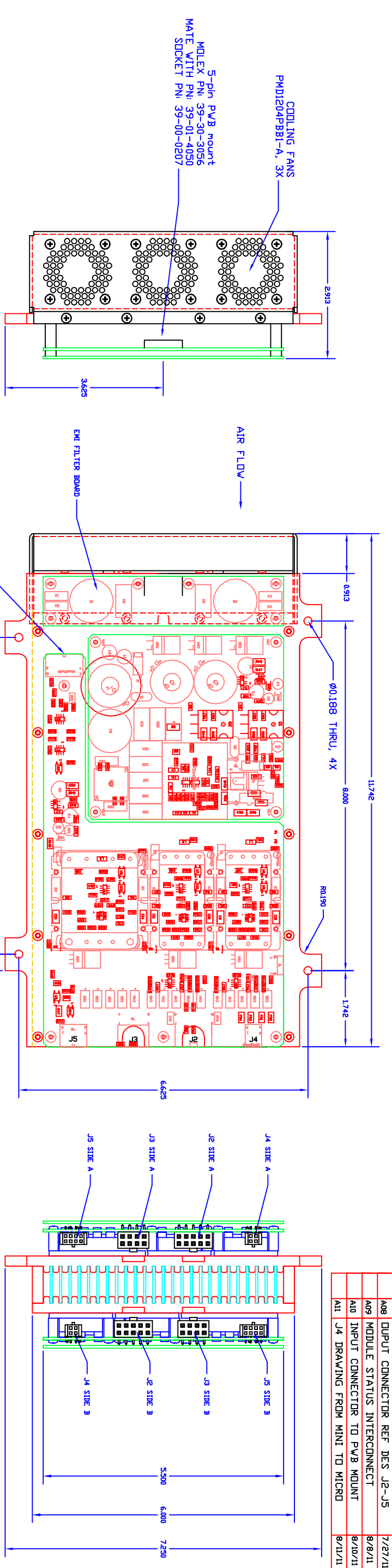
<b>CWA103</b>	<b>V1</b>	<b>V2</b>	<b>V3</b>
Voltage	+5Vdc	+12Vdc	+12Vdc
Current	5.5A	12A	12A
Power	27.5W	144W	144W
Ripple	50mVpk-pk	50mVpk-pk	100mVpk-pk
Maximum total output power is 315.5W (all DC outputs combined).			

NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.
2. MATERIAL: TUCKER 8404
3. FINISH: CHEMICAL FILM PER MIL-DTL-5541F, CLASS 3, TYPE II, COLOR CLEAR

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

ZONE	REV	DESCRIPTION	DATE	APPROVED
A01	XXX		XXX	XXX
A02	L-EP500026-S148		6/20/11	NVM
A03	INPUT CONNECTOR TO 6-PIN PANEL		6/28/11	NVM
A04	PFC BOARD SIZE REDUCTION		7/12/11	NVM
A05	PER CW DRAWING REV 02		7/14/11	NVM
A06	INPUT CONNECTOR TYPE, MINI FIT SR		7/15/11	NVM
A07	INPUT CONNECTOR 39-01-4053		7/22/11	NVM
A08	DUPUT CONNECTOR REF DES J2-J5		7/27/11	NVM
A09	MODULE STATUS INTERCONNECT		8/8/11	NVM
A10	INPUT CONNECTOR TO PWB MOUNT		8/20/11	NVM
A11	J4 DRAWING FROM MINI TO MICRO		8/11/11	NVM



MINI-FIT SR 39-01-4053

CONNECTION	FUNCTION
J1:1	Line-1
J1:2	Neutral-1
J1:3	Chassis GND
J1:4	Neutral-2
J1:5	Line-2

MINI-FIT JR 39-30-0100

CONNECTION	FUNCTION
J2:1	5V Return
J2:6	5V
J2:2	5V Return
J2:7	5V
J2:3	12V Return
J2:8	12V
J2:4	12V Return
J2:9	12V
J2:5	12V Return
J2:10	12V

MICRO-FIT 43045-0400

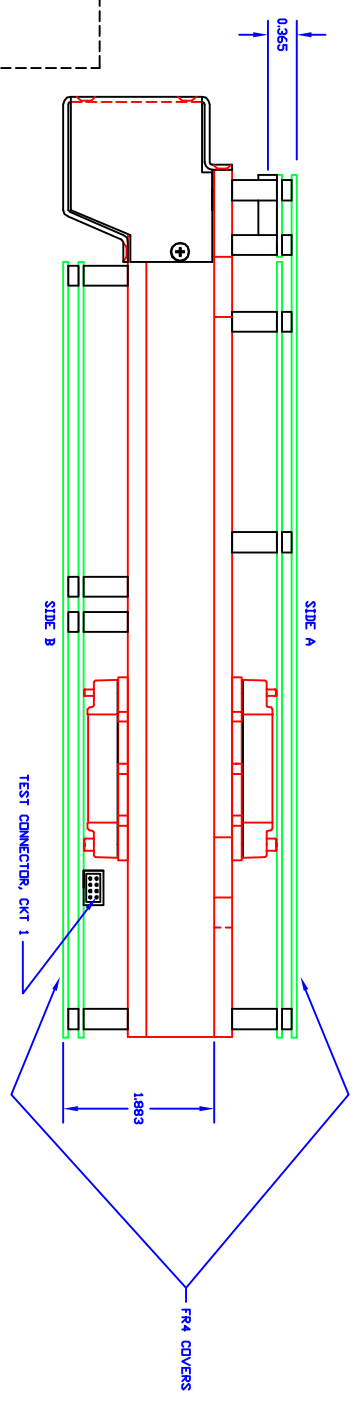
CONNECTION	FUNCTION
J4:1	5V Sense Rtn
J4:3	5V Sense
J4:2	12V Sense Rtn
J4:4	12V Sense

MINI-FIT JR 39-30-0080

CONNECTION	FUNCTION
J3:1	12V Return
J3:5	12V Return
J3:2	12V Return
J3:6	12V
J3:3	12V Return
J3:7	12V
J3:4	12V Return
J3:8	12V

MICRO-FIT 43045-0800

CONNECTION	FUNCTION
J5:1	DC Enable-A
J5:5	DC Enable-K
J5:2	Satus-E
J5:6	Satus-C
J5:3	12V N. Sw. Rtn
J5:7	12V Non Switch
J5:4	
J5:8	



MOLEX, 8733-0820 (TEST CONNECTOR)

CONNECTION	FUNCTION
PIN 1	N.C.
PIN 2	N.C.
PIN 3	12V N. SW. (SC)
PIN 4	12V N. SW. (RTN)
PIN 5	5V (SC)
PIN 6	5V (RTN)
PIN 7	12V (SC)
PIN 8	12V (RTN)

NOTE: THE MODULE STATUS CIRCUIT IS INTERCONNECTED FROM (SIDE A) TO (SIDE B) THRU THE J6 INTERCONNECT.

UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN PARENTHESES ARE IN DECIMALS AND INCHES
* N/A
XX * .02
XXX * .005
* .5

APPROVALS	DATE
BRAWN	6/20/11
CHECKED	
PROJ ENR	
WFG	
QUALITY	

CONTRACT NO.	TITLE
	CWA103 OUTLINE
	PER (L-EP500026-S148)
	AEGIS P/N: CWA103

FINISH	DO NOT SCALE DRAWING
SEE NOTE 2	
SEE NOTE 3	

APPLICATION	USED IN
NEXT ASSY	

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AEGIS POWER SYSTEMS  
MURPHY, NORTH CAROLINA

SIZE	FSCM NO.	DWG NO.	REV
D	06ES8	CWA103-M01	A15

SCALE 1/1

SHEET 1 OF 1