

NRA202

AC-DC Power Supply

(Document Rev A04 11/01/2015)



3 Phase "Y" 60Hz 120/208Vac Input Triple Output, 4500W Max Total

Market: Military Cots

Application: Shipboard Radar Electronic Equipment Rack

Features

- 3 Phase "Y" 120/208Vac input.
- Triple Outputs @ 4500W total.
- Designed to meet portions of Mil-Std-810F environmental specs.*
- Designed to meet portions of Mil-Std-461F EMI specifications.*

* Contact AEGIS Power Systems for specific details.

Table 1: Maximum Ratings

Parameter	Rating	Unit	Notes
Vin	120/208	Vac	3 Phase "Y" Input
Temperature range	-20 to +70	°C	Operating Range
Output power	4500	W	
Input power	5625	W	
+28Vdc output (V1)	2700	W	
+28Vdc output (V2)	900	W	
+28Vdc output (V3)	900	W	

Product Highlights

This ruggedized military commercial off the shelf (Mil-Cots) ac-dc filtered 3 phase "Y" 120/208Vac input power supply has three +28Vdc outputs available with a total output capacity of 4500W. This COTS solution works well for Mil-cots and is designed to meet portions of MIL-STD-810F vibration and shock, and designed to meet portions of MIL-STD-461F EMI requirements. In comparison to other power supplies using conventional technology, this package provides its users with higher efficiency (80% typical), higher power factor (0.99), less weight and higher power output. This power supply incorporates a configured array of AEGIS Power System's cutting edge proprietary high reliability and high density 1PH60 power assemblies, leading the Mil-COTS industry in power density and technical performance.

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.)

Input voltage:	Three Phase "Y", 120/208Vac, 47Hz - 63Hz.
Input current:	5.45A @ per phase @ 120/208Vac, Nominal.
Input power:	5625W (5682VA) Nominal, all three phases combined.
Power factor:	0.99 typical.
Output power:	4500W Maximum all outputs combined.
Output voltages:	See table 2 for details.
Over voltage:	117% typical. Recycle input power to reset.
Efficiency:	80% Nominal.
Output ripple:	See table 2 for details.
Current Limit:	Short circuit protected with automatic recovery.
Start up time:	700 msec. Maximum (After being enabled).
Voltage set point:	± 2.5%.
Line regulation:	± 2.5%.
Load regulation:	± 2.5%.
Temperature regulation:	± 0.02% / °C.
Temperature:	-20°C to +70°C Operating. -55°C to +100°C Non-Operating.
Cooling:	Conduction through cold plate
Package:	Chassis mounted enclosed metal case.
Dimensions:	8.5" H x 9.75" W x 14.75" L (see mechanical drawing).
Weight:	38 lbs. Typical.
Connector:	AC Input Connector: ITT Cannon; PN CA3102R24-22PF80. DC Output Connector: Nextek; PN HPR1754705Z10.
Vibration:	Designed to meet MIL-STD-810F, Method 514.5, Procedure I. 4-15 Hz @ 0.030"; 16-25 Hz @ 0.020"; 26-33Hz @ 0.010".
Shock:	Designed to meet MIL-STD-810F, Method 516.5, Procedure I. 40G, 11mSec half sine pulse.
Humidity:	0 – 95% non-condensing.
EMI:	Designed to meet MIL-STD-461F (CE101, CE102 and CS101).
Status:	DC OK Signal, Opto Isolated, Opto on = DC OK.
Enable:	Apply power to enable outputs, Opto Isolated.

Specifications subject to change without notice.

Table 2: Voltage Outputs

AG123-001	V1	V2	V3
Voltage	+28Vdc	+28Vdc	+28Vdc
Current	96.4A	32A	32A
Power	2700W	900W	900W
Ripple	150mVpk-pk	150mVpk-pk	150mVpk-pk
Maximum total output power is 4500W (all DC outputs combined).			

Table 3: Input Connector Pin-Out Assignment

Pin A	Phase A input power
Pin B	Phase B input power
Pin C	Phase C input power
Pin D	Power Ground

Table 4: Status/Enable Connector Pin-Out Assignment

1	+Sense Output 1
2	- Sense Output 1
3	+Sense Output 2
4	- Sense Output 2
5	+Sense Output 3
6	- Sense Output 3
7	Enable Output 1 Anode
8	Enable Output 1 Cathode
9	Enable Output 2 Anode
10	Enable Output 2 Cathode
11	Enable Output 3 Anode
12	Enable Output 3 Cathode
13	Status Output 1 Collector
14	Status Output 1 Emitter
15	Status Output 2 Collector
16	Status Output 2 Emitter
17	Status Output 3 Collector
18	Status Output 3 Emitter
19	No Connection

- NOTES: UNLESS OTHERWISE SPECIFIED
- INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.
 - MATERIAL: ALUMINUM ALLOY
 - FINISH: CHEMICAL FILM PER MIL-DTL-5541F, CLASS 3, TYPE II, COLOR CLEAR
 - INPUT POWER CONNECTOR (ITT CANNON P/MCA3102R24-22PF80)
 - PHASE A
 - PHASE B
 - PHASE C
 - CHASSIS GND (TIED TO BASE)
 - STATUS/ENABLE - SIGNAL CONNECTOR LEMO PNEG.2M.319.XLM
 - +SENSE-OUTPUT 1
 - SENSE-OUTPUT 1
 - +SENSE-OUTPUT 2
 - SENSE-OUTPUT 2
 - +SENSE-OUTPUT 3
 - SENSE-OUTPUT 3
 - ENABLE-OUTPUT 1 - ANNODE
 - ENABLE-OUTPUT 1 - CATHODE
 - ENABLE-OUTPUT 2 - ANNODE
 - ENABLE-OUTPUT 2 - CATHODE
 - ENABLE-OUTPUT 3 - ANNODE
 - ENABLE-OUTPUT 3 - CATHODE
 - STATUS-OUTPUT 1 - COLLECTOR
 - STATUS-OUTPUT 1 - EMITTER
 - STATUS-OUTPUT 2 - COLLECTOR
 - STATUS-OUTPUT 2 - EMITTER
 - STATUS-OUTPUT 3 - COLLECTOR
 - STATUS-OUTPUT 3 - EMITTER
 - NO CONNECTION

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A01	INITIAL RELEASE	XXXXXX	XXX
	A02	ADDED BLOCKS AROUND BASE	1/2/13	MVM
	B01	BASE PLATE WITH PEM HARDWARE	6/17/13	MVM

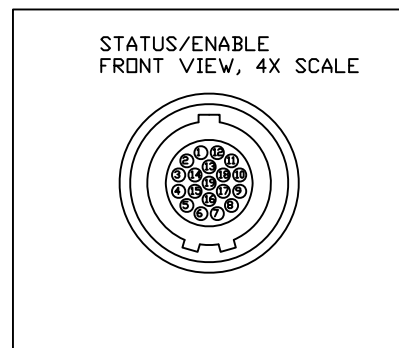
CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

HANDLE MFR. BUD INDUSTRIES
PNH-9112-B, 2X

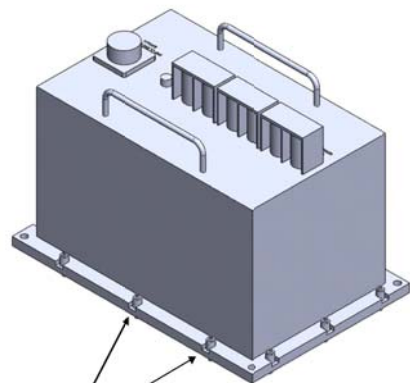
ADDED BLOCKS FOR SIDE STABILITY, 4X

A= $\varnothing 0.375' +0.007 -0.000$, 4X

B= PFC2P-032-94 PER DRAWING DN 6/17/13, 12X



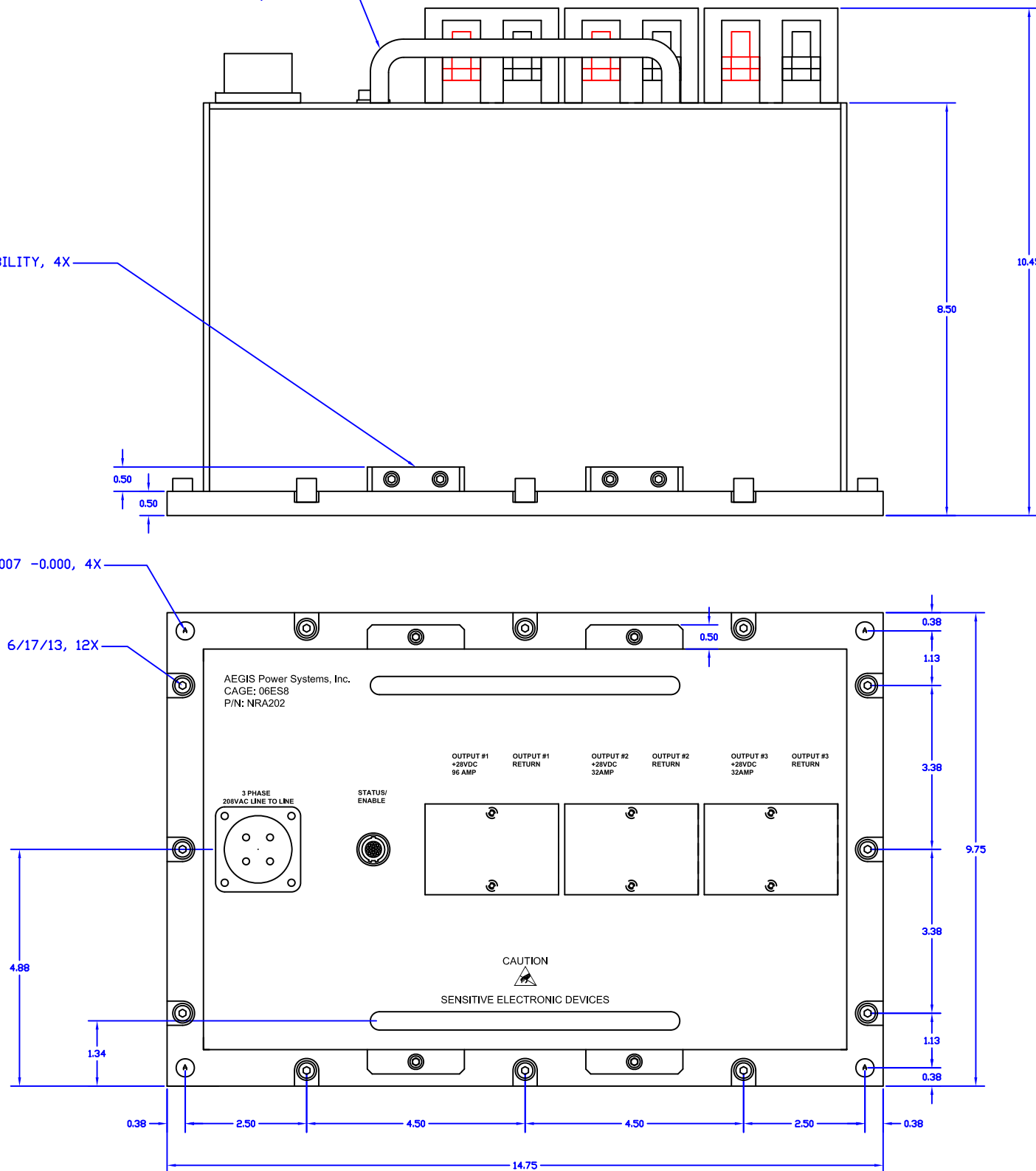
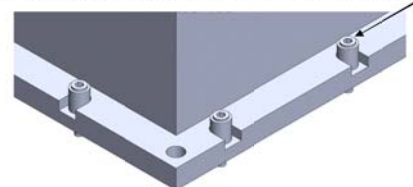
- OUTPUT 1
- OUTPUT 1, RETURN
- OUTPUT 2
- OUTPUT 2, RETURN
- OUTPUT 3
- OUTPUT 3, RETURN



Hardware Change

#10 clearance holes on baseplate are being replaced with captive hardware:

- Hole locations do not move.
- Pocket milled for captive hardware.
 - Baseplate needs to be thinned from .500" to .275" remaining.
 - Full runout of .218" diameter suggested.
- Captive hardware installed.
 - Resize holes and install PEM insert, PN: PFC2P-032-94.
 - Customer replaces screw from insert with custom structural screw shown.



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	
MVM	11/27/12	THREE PHASE 4500W MECHANICAL OUTLINE AEGIS P/N: NRA202	
DRAWN		SIZE	FSCM NO.
CHECKED		D	06ES8
PROJ. ENG.		DWG NO.	NRA202-M01
MFG.		REV	B01
QUALITY		SCALE	1/1
SHEET 1 OF 1			