

## HY2714A

### DC-DC Converter Power Supply

(Document Rev A03, 12/12/15)



**+28Vdc Input  
Multiple Outputs at 1679W Max Total**

**Market: Mil-Cots, Industrial**

**Application: Electronic Equipment Rack**

#### Features

- +28Vdc Input designed to meet Mil-Std-704F.\*
- Multiple Outputs, 1379W total, including Fan Power at 300W.
- Designed to meet MIL-STD-810F Environmental. \*
- Designed to meet MIL-STD-461E EMI specifications.\*
- Metallic enclosed dc-dc power converter mil-cots power supply.

\* Designed to meet portions of this particular standard. Contact AEGIS Power Systems for specific details.

**Table 1: Maximum Ratings**

Parameter	Rating	Unit	Notes
Vin max range	22 to 29	Vdc	
Temperature	-20 to +50 -40 to +85	°C	Operating Non-Operating
Output Power	1679	W	
Input power	2239	W	
+5Vdc output	800	W	Refer Table 2 (Outputs)
+3.3Vdc output	231	W	
+12Vdc output	84	W	
-12Vdc output	12	W	
+24Vdc output	252	W	
+12Vdc	300	W	Fan Power Trimmed to 13V

#### Product Highlights

This filtered +28Vdc input dc-dc power converter has multiple outputs available. Five outputs for customer use and one output for cooling fan power. The six factory configured outputs are (+5Vdc, +3.3Vdc, +/-12Vdc, +24Vdc, and +12Vdc fan power). Total combined output power available is 1679W. This COTS solution works well for Mil-cots and Industrial applications and is designed to meet portions of Mil-Std-704F input requirements and MIL-STD-461E EMI requirements. This power supply was developed for military mil-cots aircraft VME electronics equipment racks.

**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, electric powered vehicle and military applications. Contact Aegis for specific details on what portions of a particular military standard is offered for this power converter power supply or what can be offered on your custom power supply you wish us to build.

## **SPECIFICATIONS**

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

<b>Input voltage:</b>	+28Vdc Nominal, Range 22 - 29Vdc. Designed to meet Mil-Std-704F.
<b>Input current:</b>	80 Amps typical at 28Vdc input.
<b>Input power:</b>	2239 Watts typical.
<b>Power factor:</b>	N/A.
<b>Output power:</b>	1679W Max Output (1.68KW). See Table 2 (Output Specs).
<b>Holdup time:</b>	N/A.
<b>Output voltages:</b>	+5Vdc, +3.3Vdc, +/-12Vdc, +24Vdc, +12Vdc (fan power). See table 2 for details.
<b>Efficiency:</b>	75% minimum efficiency at full load.
<b>Output ripple:</b>	See Table 2 (Output Specs).
<b>Current Limit:</b>	Over current protected.
<b>Start up time:</b>	Contact Aegis.
<b>Voltage set point:</b>	See Table 2 (Output Specs).
<b>Line regulation:</b>	See Table 2 (Output Specs).
<b>Load regulation:</b>	See Table 2 (Output Specs).
<b>Temperature regulation:</b>	±0.02%/°C.
<b>Temperature:</b>	-20°C to +50°C Operating and -40°C to +85°C Non-Operating.
<b>Cooling:</b>	Convection cooled with internal fan forced air flow.
<b>Package:</b>	Frame mounted inside customer equipment rack.
<b>Dimensions:</b>	3.2" H x 10.7" W x 15.9" L. (W=11.14 Measured with Bus Bar Connector.)
<b>Weight:</b>	15 lbs. Typical.
<b>Connector:</b>	See Table 3 and mechanical drawing.
<b>Vibration:</b>	Designed to meet portions of Mil-Std-810F. Call for details.
<b>Shock:</b>	Designed to meet portions of Mil-Std-810F. Call for details.
<b>Humidity:</b>	3-95% non-condensing.
<b>EMI:</b>	Designed to meet portions of MIL-STD-461E. (CE101, CE102, and CS101). Call for details.

Specifications subject to change without notice.

**Table 2: Voltage Outputs**

<b>Parameters</b>	<b>V1</b>	<b>V2</b>	<b>V3</b>	<b>V4</b>	<b>V5</b>	<b>V6 (Fan)<sup>(1)</sup></b>
Voltage	+5Vdc	+3.3Vdc	+12Vdc	-12Vdc	+24Vdc	+12Vdc
Current	160A	70A	7A	1A	10.5A	25A
Power	800W	231W	84W	12W	252W	300
Ripple	50mVpk-pk	50mVpk-pk	150mVpk-pk	150mVpk-pk	240mVpkpk	150mVpk-pk
Range	4.9 - 5.1	3.24 - 3.37	11.4 - 12.6	11.4 - 12.6	23.8 - 25.2	12.5 - 13.5
Regulation	≤0.1Vdc	≤0.066Vdc	≤0.6Vdc	≤0.6Vdc	≤1.2Vdc	≤0.6Vdc

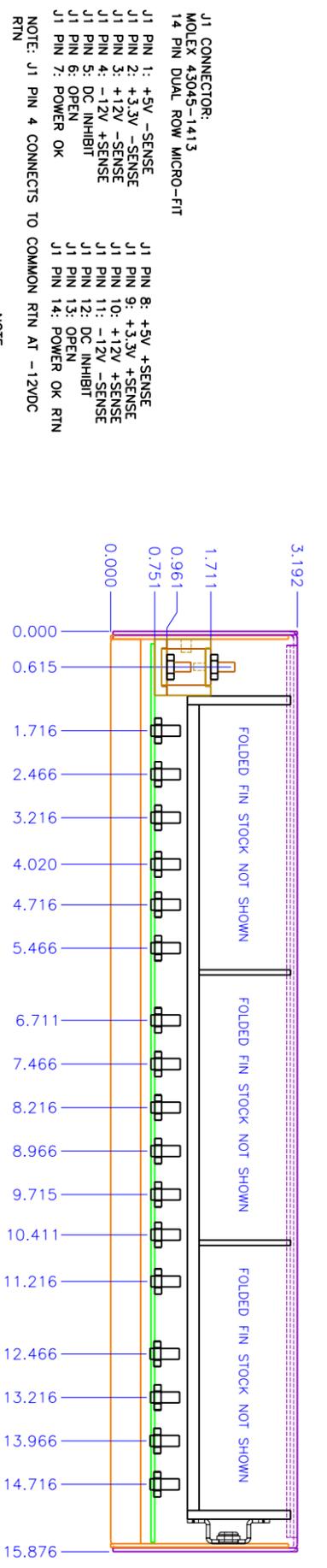
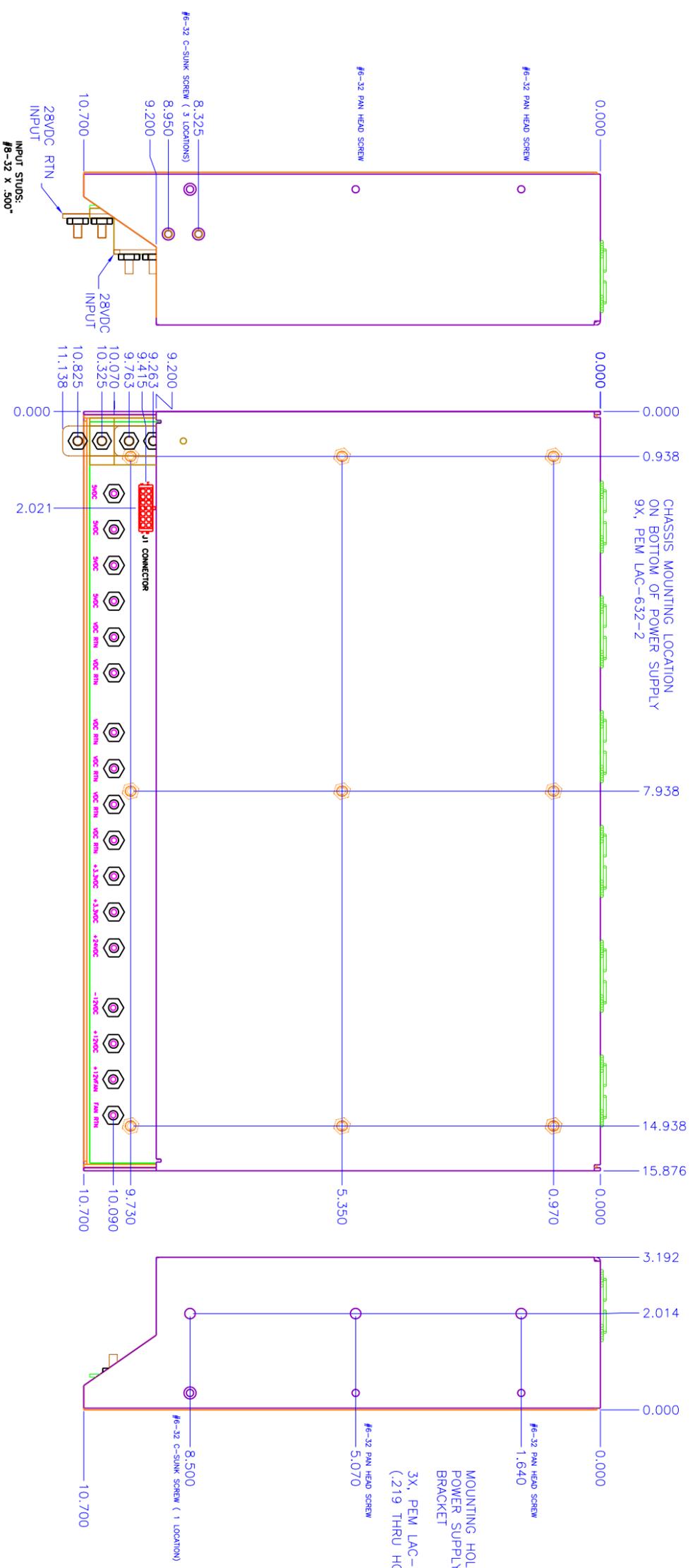
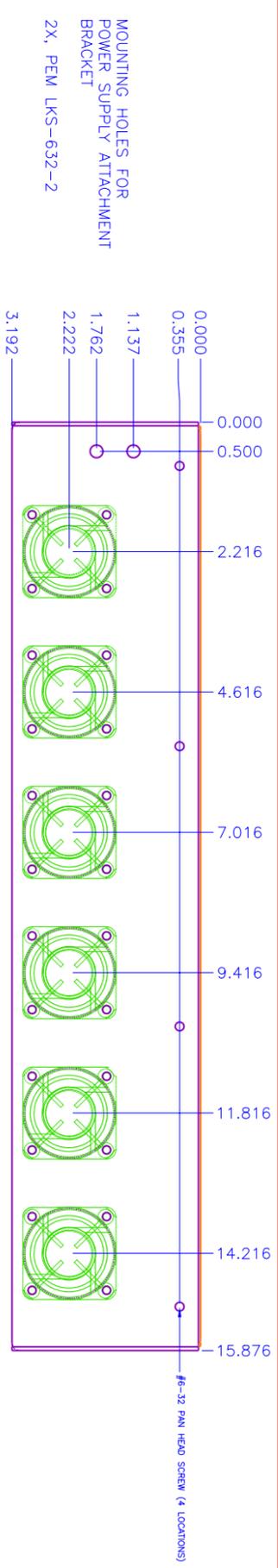
(1) Fan voltage trimmed to 13.0Vdc.

**Table 3: Connections (see attached drawing)**

<b>Pos Vdc Input</b>	#8-32 Threaded Stud
<b>Neg Vdc Input</b>	#8-32 Threaded Stud
<b>Pos Vdc Output</b>	#10-24 Threaded Stud
<b>Neg Vdc Output</b>	#10-24 Threaded Stud

ZONE	REV	DESCRIPTION	DATE	APPROVED
A01	INITIAL RELEASE - PDR		10/22/07	MRA

REVISIONS	
SH	REV



J1 CONNECTOR:  
MOLEX 43045-1413  
14 PIN DUAL ROW MICRO-FIT

J1 PIN 1: +5V -SENSE  
J1 PIN 2: +3.3V -SENSE  
J1 PIN 3: +12V -SENSE  
J1 PIN 4: -12V +SENSE  
J1 PIN 5: DC INHIBIT  
J1 PIN 6: OPEN  
J1 PIN 7: POWER OK  
RTN

J1 PIN 8: +5V +SENSE  
J1 PIN 9: +3.3V +SENSE  
J1 PIN 10: +12V +SENSE  
J1 PIN 11: -12V -SENSE  
J1 PIN 12: DC INHIBIT  
J1 PIN 13: OPEN  
J1 PIN 14: POWER OK RTN

NOTE: J1 PIN 4 CONNECTS TO COMMON RTN AT -12VDC  
RTN

NOTE: DC INHIBIT CIRCUIT OPEN = MODULES ENABLED  
CLOSED = MODULES DISABLED

NOTE: POWER OK CIRCUIT LOW = POWER OK  
OPEN COLLECTOR = POWER FAIL

NOTE: DC INHIBIT, POWER OK, AND REMOTE SENSE PROVIDED FOR: +5V, 160 AMP; +3.3V, 70 AMP; +12V, 7.0 AMP; AND -12V, 1.0 AMP OUTPUTS.

DC INHIBIT, POWER OK, AND REMOTE SENSE ARE NOT PROVIDED FOR +24V, 10.5AMP AND 12V FAN OUTPUT.

OUTPUTS:  
+5V, 160 AMP, 800W  
+3.3V, 70 AMP, 231W  
+12V, 7.0 AMP, 84W  
-12V, 1.0 AMP, 12W  
+24V, 10.5AMP, 252W  
+12V, 25 AMP, 300W (FAN OUTPUT TRIMMED TO 13V)

output studs:  
#10-32 x .500"

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

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. FRACTIONS DECIMALS ARE: DECIMALS	
xxx ± .005	± .5
xx ± .02	
xx ± .005	
SEE NOTE 2	
SEE NOTE 3	
DO NOT SCALE DRAWING	

CONTRACT NO.	APPROVALS	DATE	TITLE
	MRA	10/22/07	HY2714 MOUNTING DETAIL

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