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(Document Rev A06, 4/8/24)

LBA801

Overview
CPCI DC-DC Power Converter Card
28Vdc Input, 4 Outputs
550W Max Combined Output

Market(s)
MIL-COTS

Typical Application(s)
Electronic Equipment Rack

Product Highlights
This dual slot filtered 28Vdc LBA801 power card with four outputs at 550W maximum power, is a COTS military power supply solution designed to meet portions of MIL-STD-810F vibration and shock requirements and designed to meet portions of MIL-STD-461E EMI requirements. When compared to VME power supplies using conventional technology, the dual-slot LBA801 provides users with higher efficiency (87%), lower weight (4.14 pounds), and higher power (up to 550W). It also has a keyed connector that offers keying options when using multiple power supplies in one chassis.

Features

- 28Vdc per MIL-STD-704A-F * and MIL-STD-1275A/B/D *
- 4 Output Voltages, 550W
- MIL-STD-810F Environmental *
- MIL-STD-461E EMI *
- Dual Slot VME/CPCI Power Card
- CE Marked (Low Voltage Directive 2014/35/EU)

***** 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	18 to 36	Vdc	
Temperature	–40 to +85	°C	Ambient air temperature
Input power	640	W	@ 550W out (28VDC input)
Combined output power	550	W	See Table 2 for DC output variations

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 450W load, unless otherwise specified.)

Parameter	Notes
Input Voltage	Designed to meet MIL-STD-704A-F & MIL-STD-1275A/B/D, continuous operation 22Vdc to 33Vdc, 28Vdc nominal. 100Vdc 50ms transient (see Figure 1).
Input Current	29.1A max @ 22Vdc; 22.85A typical @ 28Vdc input (550W out).
Input Power	524W max @ 450W out, 640W max @ 550W out.
Output power	550W max. output. (All outputs combined).
Output Voltages	See table 2.
Efficiency	86% minimum, 88% typical.
Start-Up Time	500 milliseconds maximum.
Voltage Set Point	+/– 2% Vout nominal (for any combination).
Line/ Load regulation	+/– 2% Vout nominal (for any combination).
Temperature Regulation	+/– 0.01% / °C.
Output Ripple	50mV pk-pk Max. (20 MHz BW) all except; +/-12 Vdc 100mV pk-pk Max.
Current Limit	Short circuit protected with automatic recovery.
Temperature	–40°C to +85°C Ambient air temperature 550W. –55°C to +100°C Non-operating.
Cooling	Convection. Customer provided 1000lfm air flow across attached cooling fins.
Package	Dual slot pluggable slide in rack card.
Dimensions	6U x 8hp x 160mm (see mechanical drawing).
Weight	4.14 lb. Typical.
Connector	1ea Positronics PCIH47M400A1 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 (CE101, CE102, and CS101).
Safety Approvals	CE Mark (Low Voltage Directive 2014/35/EU).
MTBF	257,060 hrs GB @ 25C (Ground Benign)

Specifications subject to change without notice.

Table 2: Voltage Output (Nominal)

LBA801	V1	V2	V3	V4
Voltage	+5Vdc @	+3.3Vdc @	+12Vdc @	-12Vdc @
Power	360W	120W	120W	120W

* V1-V4 output power levels indicate maximum power available per output. Total combined power of all outputs on LBA801 cannot exceed 550W
** Output voltage variants possible. LBA801 can be configured with one to four outputs (one can be negative) (-48VDC to +48VDC)
Contact AEGIS sales for details.

LBA801-01	V1	V2	V3	V4
Voltage	+5.1Vdc @	+3.3Vdc @	+12Vdc @	-12Vdc @
Power	360W	120W	120W	120W

V4 output power levels indicate maximum power available per output. Total combined power of all outputs on LBA801 cannot exceed 550W
** Output voltage variants possible. LBA801 can be configured with one to four outputs (one can be negative) (-48VDC to +48VDC)
Contact AEGIS sales for details.

Figure 1: Transient Immunity

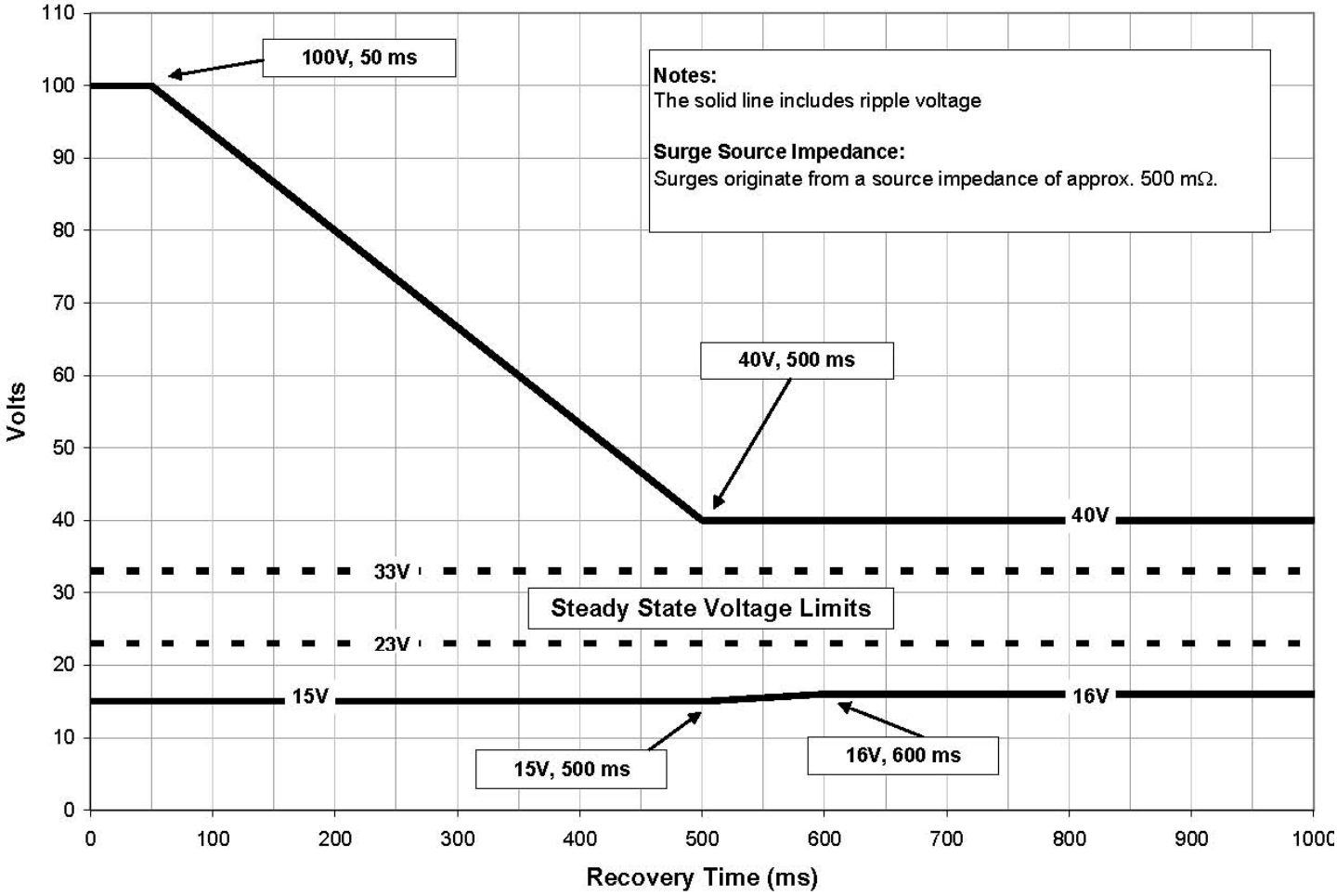


Table 3: LBA801 - Connector Specifications

Positronic Connector P/N PCIH47M400A1 or Equivalent

Contact Designation	Conductor Circuit
1- 4	V1 Output (+5 Vdc)
5-12	V1 & V2 Return (GND)
13-18	V2 Output (+3.3 Vdc)
19	V3 Return (GND)
20	V3 Output (+12 Vdc)
21	V4 Output (-12 Vdc)
22	Signal Return (GND)
23	NC
24	V4 Return (GND)
25-38	NC
39	Inhibit (Connect pin to negative input to disable)
40, 41	NC
42	Power OK, (Open collector = Fail)
43, 44	NC
45	Chassis Ground
46	Positive Input
47	Negative Input
48, 49	(Available for unique keying of supply)

** ALL PINS DESIGNATED NC SHOULD HAVE NO CONNECTION ON THE BACKPLANE

** ALL OUTPUT RTN PINS (COMMON) SHOULD BE TIED TOGETHER ON BACKPLANE

** ALL PINS OF THE SAME VOLTAGE SHOULD BE TIED TOGETHER ON THE BACKPLANE (i.e. ALL 4 OF THE +5V PINS SHOULD BE TIED TOGETHER)

** TO DISABLE ALL THE DC OUTPUTS FROM THIS CARD-CONNECT PIN 39 (INHIBIT) TO PIN 47 (NEGATIVE INPUT). THIS CAN BE ACCOMPLISHED USING A FET, TRANSISTOR, RELAY OR SWITCH THAT CAN SINK AT LEAST 15mA

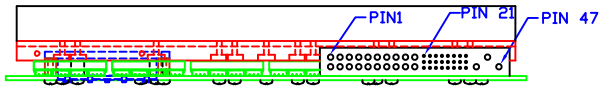
** POWER OK SIGNAL IS AN OPEN-COLLECTOR TRANSISTOR OUTPUT. IT WILL BE LOW WHEN ALL OUTPUT VOLTAGES ARE WITHIN THEIR REGULATION WINDOW – IF ANY VOLTAGE IS INCORRECT POWER OK WILL BE HIGH. THIS OUTPUT IS REFERENCED TO THE COMMON DC OUTPUT RETURN AND CAN BE PULLED UP TO ANY OF THE DC OUTPUT VOLTAGES. SELECT A PULL-UP RESISTOR TO LIMIT THE CURRENT THROUGH THE TRANSISTOR TO LESS THAN 50mA. (Example – use a 1K pull-up for 5mA of current when pulled up to +5V output.)

DWG NO.	SH	REV

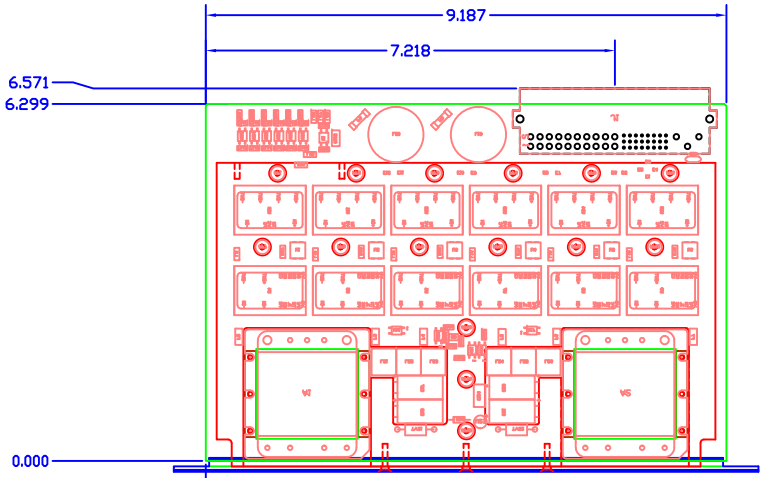
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A01	INITIAL RELEASE	03/20/18	MVS
	A02	ADDED 1/2HP OFFSET HANDLES	04/03/18	MVS

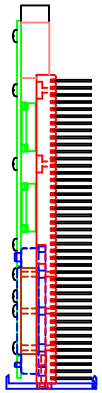
NOTES: UNLESS OTHERWISE SPECIFIED

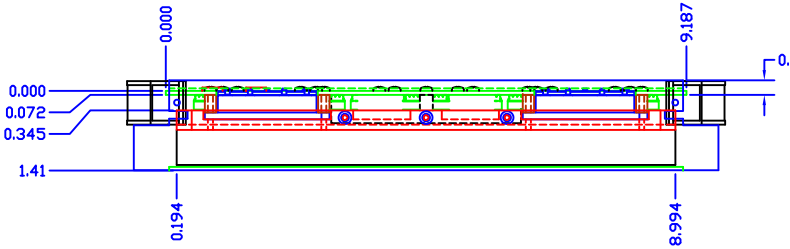
1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.



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







CONNECTOR POSITRONIC P/N PCIH47M400A1, OR EQ.

PINS 1, 2, 3, 4 - V1 OUTPUT (+5VDC)
PINS 5, 6, 7, 8 - V1 & V2 RETURN (GND)
PINS 9, 10, 11, 12 - V1 & V2 RETURN (GND)
PINS 13, 14, 15, 16, 17, 18 - V2 OUTPUT (+3.3VDC)
PIN 19 - V3 RETURN (GND)
PIN 20 - V3 OUTPUT (+12VDC)
PIN 21 - V4 OUTPUT (-12VDC)
PIN 22 - SIGNAL RETURN (GND)
PIN 23 - NC
PIN 24 - V4 RETURN (GND)
PINS (25 - 38) - NC
PIN 39 - INHIBIT (CONNECTED TO NEG INPUT = DISABLED)
PINS 40, 41 - NC
PIN 42 - FAIL SIGNAL, (LOW=OK HIGH(+5V)=FAIL)
PINS 43, 44 - NC
PIN 45 - CHASSIS GND
PIN 46 - POSITIVE INPUT
PIN 47 - NEGATIVE INPUT

NEXT ASSY	USED ON
APPLICATION	

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

MATERIAL: SEE NOTE 2

FINISH: SEE NOTE 3

DO NOT SCALE DRAWING

CONTRACT NO.		
APPROVALS		DATE
DRAWN	MVS	03/20/18
CHECKED		
PROJ. ENG.		
MFG.		
QUALITY		

AEGIS POWER SYSTEMS
MURPHY, NORTH CAROLINA

TITLE: LBA801 MECH LAYOUT
AEGIS P/N: LBA801

SIZE	FSCM NO.	DWG NO.	REV
D	06ES8	LBA801-M00	A02

SCALE 1/1 SHEET 1 OF 1