

VPX2703UC400

Overview

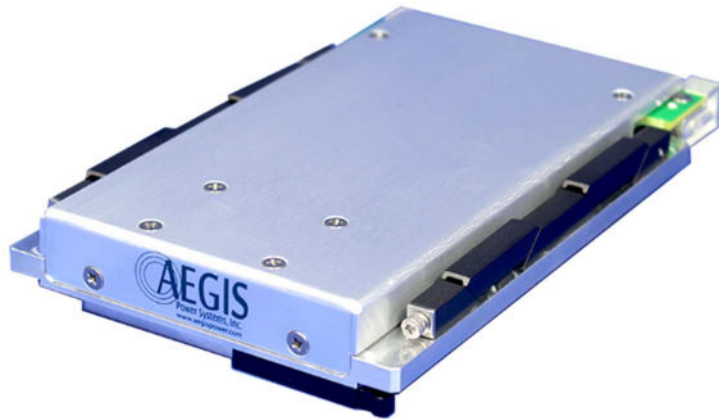
3U VPX DC-DC Power Converter Card
 270Vdc Input, 6 Outputs
 400W Max Combined Output

Market(s)

MIL-COTS

Typical Application(s)

Aircraft Electronics Equipment Rack



Product Highlights

This single slot thin (5HP) filtered 270Vdc VPX2703UC400 power card with six outputs at 400W 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 the MIL-STD-461E EMI requirements. When compared to VPX power supplies using conventional technology, the single-slot VPX2703UC400 provides users with higher efficiency (up to 90%), and higher power (up to 400W). It also has alignment keys that offer keying options when using multiple power supplies in one chassis.

Features

- 270Vdc per MIL-STD-704F
- 6 Output Voltages, 400W
- Single Slot VPX Power Card
- MIL-STD-461E EMI *
- VITA 46.11 IPMI I2C interface

* 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	200 to 320	Vdc	270V Nominal
Temperature	-40 to +85	°C	Baseplate @ wedgelocks *85C @ 300W total output
Input power	445	W	@ 400W out (270VDC input)
Combined output power	400	W	See Table 2 for DC output variations
Efficiency	90	%	Typical @ nominal conditions

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 100% load, unless otherwise specified.)

Parameter	Notes
Input Voltage	Designed to meet MIL-STD-704F (Figure 16), continuous operation 200Vdc to 320Vdc, 270 Vdc nominal.
Input Current	2.22A max @ 200Vdc, 1.65A typical @ 270Vdc input (400W out).
Input Power	445W max @ 400W out.
Total Output Power	400W max. all outputs combined.
Output Voltages	(see table 2).
Efficiency	88.5% minimum, 90% typical, 93% max.
Start-Up Time	2 second maximum.
Voltage Set Point	+/- 5% V Out nominal (for any combination).
Line/Load Regulation	+/- 5% V Out nominal (for any combination).
Output Ripple	50mVpk-pk Max. (20 MHz BW) all except; +/-12 Vdc 100mVpk-pk Max.
Current Limit	Short circuit protected with automatic recovery (110% - 130% of rated output).
Temperature	-55°C to +75°C Operating baseplate @ 400W output. (+85°C Operating baseplate @ 300W output) -55°C to +125°C Storage.
Cooling	Conduction cooling through wedgelocks attached to customer rack.
Package	Single slot pluggable slide in rack card.
Dimensions	3U x 5hp x 168.49mm (see mechanical drawing page).
Weight	1.33 lbs. (typical).
Connectors	1ea TE Connectivity 6450849-7 or equivalent (see Table 4).
Vibration	Designed to meet – ANSI/VITA 47-2005 (R2007), Section 4.4.3 Vibration Class V3. MIL-STD-810F, Method 514.5, Procedure I.
Shock:	Designed to meet - ANSI/VITA 47-2005 (R2007), Section 4.5.2 Operating Shock Class OS2 ANSI/VITA 47-2005 (R2007), Section 4.5.3 Bench Handling Shock. MIL-STD-810F, Method 516.5, Procedure I.
Humidity	0 – 95% non-condensing per ANSI/VITA 47-2005 (R2007), Section 4.6 Humidity.
EMI	Designed to meet MIL-STD-461F conducted emissions, when coupled with a front end filter that provides at least 80 dB of attenuation for frequencies greater than 10 kHz.
System Management	VITA 46.11 IPMI I2C interface with monitoring

Specifications subject to change without notice.

Table 2: Voltage Output (Nominal)

VPX2703UC400-XX	VS1	VS2	VS3	VS4	VS5	VS6
VPX2703UC400-01	+12VDC @ 400W	+3.3VDC @ 99W	+5VDC @ 150W	-12VDC_AUX @ 12W	3.3VDC_AUX @ 3.3W	+12VDC_AUX @ 12W
VPX2703UC400-02	Same outputs as -01 version with VITA 46.11 IPMI I2C interface providing: - (VS1-VS6) Output Voltage / (VS1-VS3) Current monitoring - On-board temperature monitoring - Power good status, PSU serial number & revision - Dynamic addressing (GA0 & GA1) allows up to four supplies on same I2C bus * (contact AEGIS for more details)					
VPX2703UC400-03	Same outputs as -01 version, no IPMI, (-40C to +85C operational and -40C to +125C storage)					
VPX2703UC400-04	Same outputs as -01 version, with IPMI, (-40C to +85C operational and -40C to +125C storage)					

VS1-VS6 output power levels indicate maximum power available per output. Total combined power of all outputs on VPX2703UC400 cannot exceed 400W @ 75°C / 300W @ 85°C
 * Temperature measured on the unit's baseplate @ wedge locks

Table 3: ENABLE / INHIBIT

Control Inputs		Power Outputs	
ENABLE	INHIBIT	3.3V_AUX	PO1, PO2, PO3, +12V_AUX, and -12V_AUX
High	High	Off	Off
High	Low	Off	Off
Low	High	On	On
Low	Low	On	Off

Table 4: Connector Specifications

TE Connectivity Connector 6450849-7 or equivalent

Contact Designation		Conductor Circuit
P1	50A	-DC_IN/ACN
P2	50A	+DC_IN/ACL
LP1	30A	CHASSIS
A1	<1A	(NC)
B1	<1A	(NC)
C1	<1A	(NC)
D1	<1A	(NC)
A2	<1A	(NC)
B2	<1A	FAIL*
C2	<1A	INHIBIT*
D2	<1A	ENABLE*
A3	<1A	(NC)
B3	<1.5A	+12V_AUX (VS6)
C3	<1A	(NC)
D3	<1A	(NC)
A4	<1.5A	3.3V_AUX (VS5)
B4	<1.5A	3.3V_AUX (VS5)
C4	<1.5A	3.3V_AUX (VS5)
D4	<1.5A	3.3V_AUX (VS5)
A5	<1A	GA0
B5	<1A	GA1
C5	<1A	SM0 (I2C/SCL)
D5	<1A	SM1 (I2C/SDA)
A6	<1A	(NC)
B6	<1A	(NC)
C6	<1.5A	-12V_AUX (VS4)
D6	<1A	SYSRESET*
A7	<1A	(NC)
B7	<1A	(NC)
C7	<1A	(NC)
D7	<1A	SIGNAL_RETURN (Common)
A8	<1A	PO1_SENSE
B8	<1A	PO2_SENSE
C8	<1A	PO3_SENSE
D8	<1A	SENSE_RETURN (Common)
P3	50A	PO3 (VS3)
P4	50A	POWER_RETURN (Common)
P5	50A	POWER_RETURN (Common)
LP2	30A	PO2 (VS2)
P6	50A	PO1 (VS1)

* Use of a trailing asterisk indicate a logic signal which is active when at the less positive level of its allowable range.

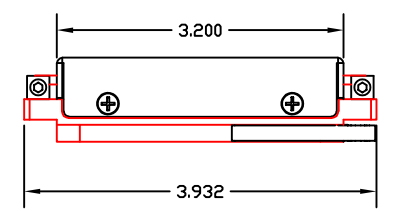
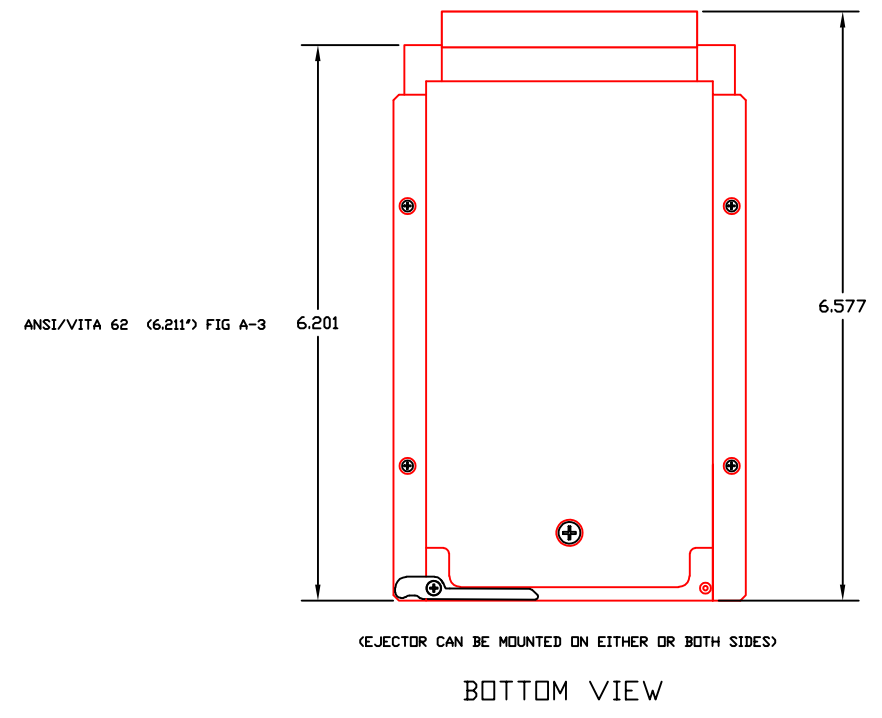
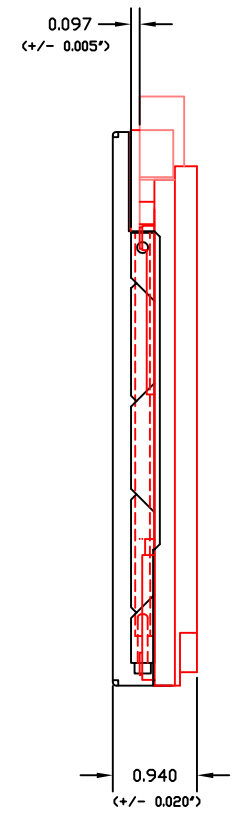
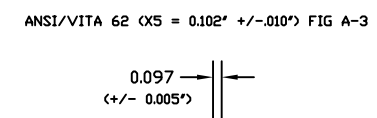
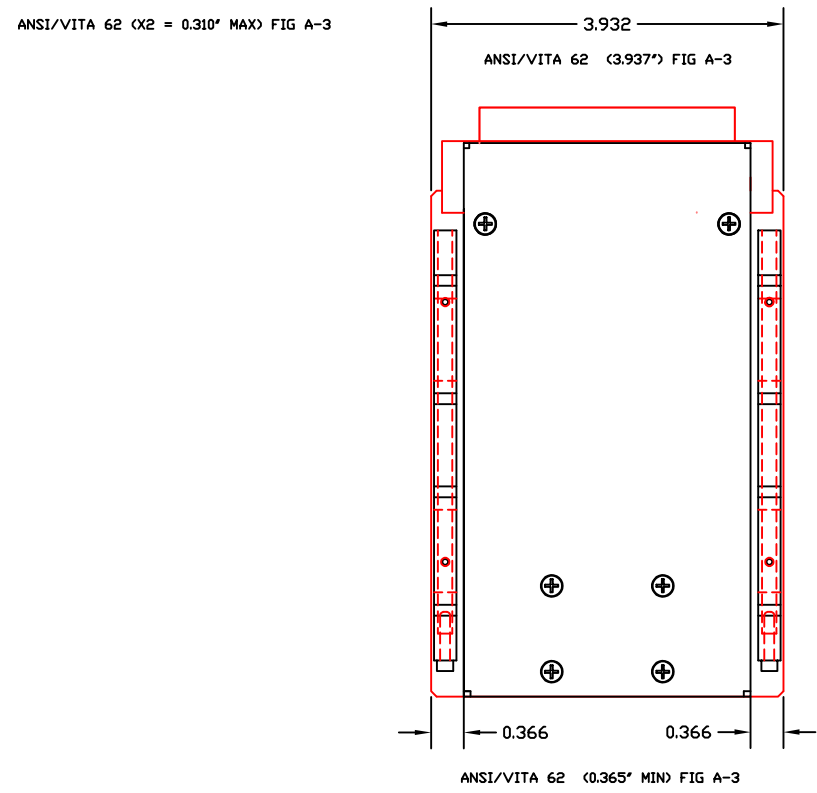
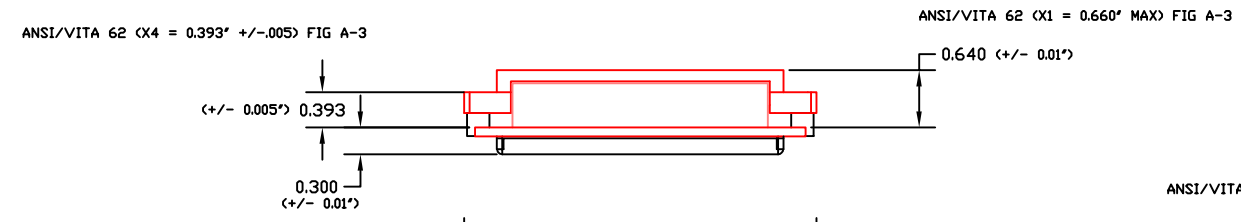
ALL PINS DESIGNATED NC SHOULD HAVE NO CONNECTION ON THE BACKPLANE

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 +3.3V_AUX PINS SHOULD BE TIED TOGETHER)

DWG NO.	SH	REV	1
REVISIONS			
ZONE	REV	DESCRIPTION	DATE
A06		UPDATED TO MATCH NEW PWB REV	5/3/20
			APPROVED MVS

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



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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES		
FRACTIONS	DECIMALS	DEGREES
± N/A	.XX ± .02	± .5
	.XXX ± .005	
MATERIAL	SEE NOTE 2	
FINISH	SEE NOTE 3	
DO NOT SCALE DRAWING		

CONTRACT NO.		AEGIS POWER SYSTEMS MURPHY, NORTH CAROLINA	
APPROVALS	DATE	TITLE	
DRAWN MVS	4/20/20	VPX2703UC400 MECHANICAL OUTLINE AEGIS P/N: VPX2703UC400	
CHECKED		SIZE	FSCM NO.
PROJ. ENG.		D	06ES8
MFG.		DWG NO.	VPX2703UC400-M00
QUALITY		REV	A06
APPLICATION	DO NOT SCALE DRAWING	SCALE	1/1
		SHEET 1 OF 1	