

VPX283UC300-XX

VPX DC-DC

**3U x 5HP x 168.49mm
Power Converter Card**

(Document Rev A02, 11/05/19)



**28Vdc Input
6 Output, 300W Max Combined Output**

Features

- 28Vdc per MIL-STD-704F
- 6 Output Voltages, 300W
- MIL-STD-461E EMI *
- Single Slot VPX Power Card
- IPMI monitoring available

Table 1: Maximum Ratings

Parameter	Rating	Unit	Notes
Vin max range	18 to 36	Vdc	28V Nominal
Temperature	-55 to +85	°C	Baseplate @ wedgelocks
Input power	363	W	@ 300W out (28VDC input)
Combined output power	300	W	See Table 2 for DC output variations
Efficiency	88	%	Typical @ nominal conditions

* Designed to meet applicable portions of the standard. Contact Aegis Power for details.

Product Highlights

This single slot thin (5HP) filtered 28Vdc VPX283UC300-XX power card with six outputs at 300W maximum power, is a COTS military power supply solution designed to meet applicable portions of MIL-STD-810F vibration and shock requirements and MIL-STD-461E EMI requirements. When compared to VPX power supplies using conventional technology, this single-slot power card provides users with higher efficiency (up to 90%), and higher power (up to 300W). It also has alignment keys that offer keying options when using multiple power supplies in one chassis. IPMI monitoring is available for output voltage, current, and temperature.

AEGIS Power Systems, Inc. specializes in the front-end design, development, and manufacture of Rapid Response Custom Switching Power Supplies for defense, industrial, telecommunication, electric powered vehicle and Mil-Cots military power supply applications. Contact Aegis Power Systems for details on Mil-Specs that this product is designed to meet.

SPECIFICATIONS

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

DC input voltage:	Designed to meet MIL-STD-704F (Figure 13), continuous operation 18Vdc to 36Vdc, 28 Vdc nominal. (50Vdc transient/overvoltage)
DC input line current:	20.2A max @ 18Vdc; 13.0A typical @ 28Vdc input (300W out).
Input power:	363W max @ 300W out
Output power:	300W max. all outputs combined.
Output voltages:	See table 2.
Efficiency:	86% minimum, 88% typical, 90% max
Start up time:	2 second maximum.
Voltage set point/ Line/Load regulation:	+/- 5% Vout nominal (for any combination).
Output ripple:	50mV pk-pk Max. (20 MHz BW) all except; +/-12 Vdc 120mV pk-pk Max.
Current Limit:	Short circuit protected with automatic recovery.
Temperature:	-55°C to +85°C Operating baseplate @ wedge locks 300W. -55°C to +105°C Non-operating.
Cooling:	Conduction cooling through wedgelocks attached to customer rack.
Package:	Single slot pluggable slide in rack card.
Dimension:	3U x 5hp x 168.49mm (see mechanical drawing page).
Weight:	1.75 lbs. (typical)
Connector:	1ea TE Connectivity 6450849-7 or equivalent (see pin assignments page).
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).

Table 2: Voltage Outputs

	V1	V2	V3	V4	V5	V6
VPX283UC300-01	+12VDC	+3.3VDC	+5VDC	-12VDC_AUX	3.3VDC_AUX	+12VDC_AUX
Output Power @ 85°C*	300W	82W	150W	18W	3.3W	18W
Max Output Power	300W	82W	150W	18W	3.3W	18W
VPX283UC300-02	Same outputs as -01 version with IPMI output voltage, current and temperature monitoring.					
<p>* Temperature measured on the unit's baseplate @ wedge locks</p> <ul style="list-style-type: none"> V1-V6 output power levels indicate maximum power available per output. Total combined power of all outputs on VPX283UC300-XX cannot exceed 300W @ 85°C 						

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

VPX283UC300-XX Connector Pin Out Assignment

TE Connectivity Connector 6450849-7 or equivalent

Pin Number	Rated Current (A)	Pin Name
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
C3	<1A	(NC)
D3	<1A	(NC)
A4	<1.5A	3.3V_AUX
B4	<1.5A	3.3V_AUX
C4	<1.5A	3.3V_AUX
D4	<1.5A	3.3V_AUX
A5	<1A	(NC)
B5	<1A	(NC)
C5	<1A	SM0 (Temperature I2C, SCL)
D5	<1A	SM1 (Temperature I2C, SDA)
A6	<1A	(NC)
B6	<1A	(NC)
C6	<1.5A	-12V_AUX
D6	<1A	(NC)
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 (5V)
P4	50A	POWER_RETURN (Common)
P5	50A	POWER_RETURN (Common)
LP2	30A	PO2 (3.3V)
P6	50A	PO1 (12V)

* 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)