

VPX 3U DC VITA62 Power Supply 400W

Hartmann Electronic VPX power supplies are commercial off-the-shelf (COTS), conduction cooled single stage converters according to the ANSI/VITA 62.0 specification. They can be used to power a VPX chassis and will fit into the standard envelope defined by VITA 48.0 specifications.

Using state of the art switching power technology a wide input range voltage range as well as high overall efficiency is achieved. The 400W VPX Power Supply part number D575.00720 is designed and tested to be in compliance with MIL STD 461, 704 and 1275 as per VITA 62. An embedded microprocessor allows monitoring and control via I²C bus and USB.

The VPX power supply mechanical dimensions are 3U x 4HP (0.80" slot). It is outfitted with connectors, keying and alignment mechanism as per VITA 62.



VPX 3U DC VITA62 Power Supply 400W



Main Features

- Compliant to VITA 62 specification
- Up to 400 W maximum power,
- 3U size, 0.8"
- 6 independent output voltages VS1 (12V), VS2 (3.3V), VS3 (5V), Vaux1(+12V), Vaux2(-12V), Vaux3 (3.3V)
- up to 90% peak efficiency, 87% at full load of 400W
- 28V DC input voltage, wide input range 15 V ... 40 V

Power Supply Features

- Compliant to VITA 62 specification
- High efficiency up to up to 90%, 87% at full load of 400W
- Wide input voltage range: 15 V ... 40 V DC, reverse polarity protection
- Voltage sense controlled, Over Voltage, Under Voltage, Over Current, Over Temperature protection
- Microprocessor controlled, with I²C bus communication for monitoring (status, input and 6 output voltages and currents, temperatures), micro-USB connector for communication and firmware updates
- No electrolytic capacitors
- MIL-STD-461, MIL-STD-704, MIL-STD-1275 compliance tested (as per VITA 62, par. 3.2.1)
- Ruggedized to MIL STD 810, with standard conformal coating (other on request)
- Dimensions: 100.0 mm x 170.0 mm x 20.3 mm (3.9" x 6.69" x 0.8")
- Weight 0.60kg (1.3lbs)

400W VITA62 VPX Power Supply

High efficiency, conduction cooled power supply according to VITA62 specification.

Power supply	Input	VS1 [+12V]	VS2 [+3.3V]	VS3 [+5V]	Vaux1 [+12V]	Vaux2 [-12V]	Vaux3 [+3.3V]
D575.00720	28 V DC	15 A	20 A	40 A	1 A	1 A	4 A

Technical Details (Rev 7.1)

Form Factor	3U VPX CC
Pitch	4 HP / 0.8 inch
Weight	0.6 kg / 1.3 Lbs
Operating Temperature (at wedge lock)	-40 °C to 85 °C (derate max power from 400 W to 200 W (linear) for 60 °C to 85 °C operation)
Storage Temperature	-55 °C to 105 °C
Input to Output Isolation	1500 V
Input to Case Ground Isolation	500 V
Output to Case Ground Isolation	500 V
Case Ground to Safety Ground Resistance	< 10 mΩ
Maximum Output Power	400 W
Maximum Input Power	~450W
Maximum Dissipated Power @ max. Power	~50 W
Nominal Input Voltage	28 V
Minimum Turn ON Voltage	14 V
Minimum Turn OFF Voltage	11 V


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Maximum Continuous/Peak Input Voltage	40 V / \pm 250 V (<1 ms spike)
Input Overvoltage Protection:	Outputs disable if input voltage exceeds 42 VDC for > 600 ms (10 second auto-restart)
Maximum Internal Working Temperatures	125 °C
Temperature Protection Sensing Point (internal)	125 °C (Outputs disable when internal PCB temperature exceeds threshold)
Main Power VS1 / VS2 / VS3	
Maximum Currents 12V / 3V3 / 5V	15 A / 20 A / 40 A
Fixed Switching Frequencies 12V / 3V3 / 5V	300 kHz / 220 kHz / 410 kHz
Peak Efficiencies 12V / 3V3 / 5V	90% / 90% / 90%
Max. Output Ripple and Noise: 12V / 3V3 / 5V	40 mVrms / 10 mVrms / 20 mVrms
(0-20 MHz Bandwidth)	< 120 mVpp / < 50 mVpp / < 50 mVpp
Line Regulation: 12V / 3V3 / 5V.	10 mV / 10 mV / 50 mV
V _{in} =V _{in,min} to V _{in,max} , I _o and T _c fixed	< 0.1%
Load Regulation: 12V / 3V3 / 5V	10 mV / 10 mV / 10 mV
Overvoltage Protection +/-12V / 3V3 / 5V: Maximum Output Voltage (Sense Lines Open)	12.1 V / 3.4 V / 5.2 V
Load Transient Recovery Time (no load to full load change condition)	1 ms
Auxiliary Power Vaux-12V / Vaux+12V, Vaux+3.3V	
Maximum Current	1 A / 1 A / 4 A
Load Dependent Switching Frequency	600 Hz ... 130 kHz
Efficiency	80%


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Max. Output Ripple and Noise (0-20 MHz Bandwidth)	< 120 mVpp / < 50 mVpp / < 50 mVpp
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Load Transient Recovery Time (no load to full load change condition)	1 ms
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MIL
Standard
Compliance as per VITA 62 specification

MIL-STD461F (EMI) Compliance	Designed & tested in compliance with sections CE102, CS101, CS114, CS115, CS116. Compliance tests performed by 3rd party and reports available upon request. See user manual for more details.
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Additionally a pre-compliance test according to section CE101 of MIL-STD-461F was conducted and passed successfully.

MIL-STD-704F Compliance	Designed & tested in compliance for normal transients (LDC105), abnormal transients (LDC302) and distortion spectrum (LDC103). External hold-up circuit optional. Compliance tests performed by 3rd party and reports available upon request. See user manual for more details.
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MIL-STD-1275D Compliance	Designed & tested in compliance for MIL-STD-1275D 5.3.2.2 Exported Voltage Spikes, MIL-STD-1275D 5.3.2.3 Imported Voltage Spikes (Normal Mode & Generator Mode), MIL-STD-1275D 5.3.2.4 Imported Voltage Surges (Normal Mode & Generator Mode) and MIL-STD-1275D 5.3.2.5 Imported Ripple Voltage. Compliance tests performed by 3rd party and reports available upon request. See user manual for more details.
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Compatibility / Environmental

Compatibility	VDE 0805, IEC 950
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Designed to meet MIL-STD-810G (Environmental)	With standard acrylic conformal coating to withstand sand, dust and salt atmosphere.
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All data is for information purposes only and not guaranteed for legal purposes. Information has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Specifications are subject to change without notice.