

VPX 3U DC VITA62 Power Supply 360W

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 voltage range as well as high overall efficiency is achieved. Further each individual main converter is oversized for maximum current which allows different power supply configurations having either a stronger 12V or a more evenly distributed power over the 3 main output channels.

The new series is designed in compliance with MILSTD-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 360W



Main Features

- Compliant to VITA 62 specification
- Up to 360 W maximum power, flexible design allows different high current outputs / power configurations
- 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 360W
- 28V DC input voltage, wide input range 15V ... 40V

Power Supply Features

- Compliant to VITA 62 specification
- High efficiency up to up to 90%, 87% at full load of 360W
- 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 liquid / wet / aluminum electrolytic capacitors
- MIL-STD-461, MIL-STD-704, MIL-STD-1275 compliance (to be 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)

Item	Description						
On request	360W 3U VITA 62 VPX power supply Standard Version , MIL-STD-461, -704,-1275 compliant, with standard acrylic conformal coating						
	Input	VS1 [+12V]	VS2 [+3.3V]	VS3 [+5V]	Vaux1 [+12V]	Vaux2 [-12V]	Vaux3 [+3.3V]
	28 V DC	15 A	20 A	30 A	1 A	1 A	6 A
D575.00730	360W 3U VITA 62 VPX power supply - Max 12V Version , MIL-STD-461, -704,-1275 compliant, with acrylic conformal coating						
	Input	VS1 [+12V]	VS2 [+3.3V]	VS3 [+5V]	Vaux1 [+12V]	Vaux2 [-12V]	Vaux3 [+3.3V]
	28 V DC	20 A	20 A	20 A	1 A	1 A	6 A
On request	360W VITA 62 VPX power supply - Max 5V Version , MIL-STD-461, -704,-1275 compliant, with acrylic conformal coating						
	Input	VS1 [+12V]	VS2 [+3.3V]	VS3 [+5V]	Vaux1 [+12V]	Vaux2 [-12V]	Vaux3 [+3.3V]
	28 V DC	10 A	10 A	40 A	1 A	1 A	6 A
On request	306W VPX power supply - SOSA aligned Version , MIL-STD-461, -704,-1275 compliant, with acrylic conformal coating						
	Input	VS1 [+12V]	VS2 [+3.3V]	VS3 [+5V]	Vaux1 [+12V]	Vaux2 [-12V]	Vaux3 [+3.3V]
	28 V DC	20 A	20 A	-	-	-	-

Technical Details (Rev 0)

360W VITA62 VPX Power Supply

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 360 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	360 W
Maximum Input Power	~400W
Maximum Dissipated Power @ max. Power	~40 W
Nominal Input Voltage	28 V
Minimum Turn ON Voltage	14 V
Minimum Turn OFF Voltage	11 V
Maximum Continuous/Peak Input Voltage	40 V / ± 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	see tables in "Ordering Information" for different power configurations
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 (0-20 MHz Bandwidth)	40 mVrms / 10 mVrms / 20 mVrms < 120 mVpp / < 50 mVpp / < 50 mVpp
Line Regulation: 12V / 3V3 / 5V.	<10 mV / <10 mV / <10 mV
Vin=Vin,min to Vin,max, Io and Tc 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 / 6 A
Load Dependent Switching Frequency	140 kHz / 210 kHz / 170 kHz
Efficiency	80%
Max. Output Ripple and Noise (0-20 MHz Bandwidth)	< 120 mVpp / < 50 mVpp / < 50 mVpp
Load Transient Recovery Time (no load to full load change condition)	1 ms

MIL Standard Compliance

as per VITA 62 specification

MIL-STD461F (EMI) Compliance	Designed (to be tested) in compliance with sections CE102, CS101, CS114, CS115, CS116. See user manual for more details.
MIL-STD-704F Compliance	Designed (to be tested) in compliance for normal transients (LDC105), abnormal transients (LDC302) and distortion spectrum (LDC103). External hold-up circuit optional. See user manual for more details.
MIL-STD-1275D Compliance	Designed (to be tested) in compliance for MIL-STD-1275D 5.3.2.2 Exported Voltage Spikes, MILSTD-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. See user manual for more details.

Compatibility / Environmental

Compatibility	VDE 0805, IEC 950
Designed to meet MIL-STD-810G (Environmental)	With standard acrylic conformal coating to withstand sand, dust and salt atmosphere.

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.