PRODUCT GUIDE

VPS-601 6U VPX Power Supply ›



The Molex VPS-601 6U VPX Power Supply is a rugged, reliable DC-to-DC switch-mode unit built for high-performance defense and aerospace applications.

The VPX-601 power supply is a VITA 62- and OpenVPX-compliant 6U power supply, offering models with inputs of 270V DC in accordance with MIL-STD-704, 270V DC. The output power level reaches up to 2,300W.

The VPS-601 power supply has no minimum load requirement and features programmable output current regulation as well as over-current and thermal protection. Molex VPX power supply modules are designed to withstand the demands of mission-critical airborne, shipboard, vehicle, mobile and aerospace applications.

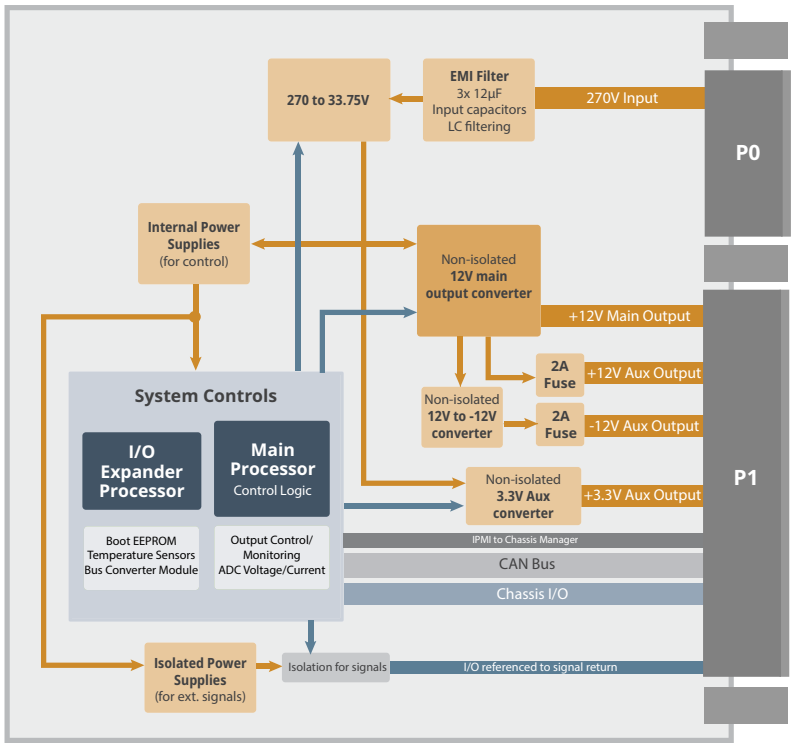
FEATURES AND ADVANTAGES

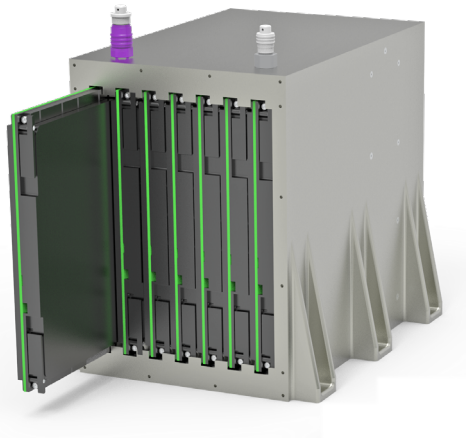
Ultra-clean high-power DC output
Minimal noise and ripple support a wide range of highly sensitive loads.

2,300W of power with up to 95% efficiency
The increased power output is enabled by hassle-free thermal management and exceptional reliability.

Low noise, open architecture switching
Switching frequency can be tailored with minimal emissions and efficiency impact.

Clean EMI/EMC emissions performance
The design passes CE101 and CE102 standards at full load with no external filter.





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SPECIFICATIONS

Absolute Maximum Ratings

Parameter	Notes	Min.	Max.	Units
Input Voltage		210	400	V
Maximum Continuous Operating Power	Card cage rail @ 55°C		2,289	W
	Card cage rail @ 85°C		1,228	W
Operating Temperature	Measured at card cage rail	-40[1]	85	°C
Storage Temperature		-55	105	°C
Isolation Voltage	Input to output		3,000	V
Isolation Voltage	Input to case		3,000	V
Isolation Voltage	Output to case		500	V

Input Characteristics

Parameter	Notes	Min.	Typical	Max.	Units
Nominal Operating Input Voltage		250	270	280	V
Turn-On Threshold				200	V
Turn-Off Threshold			160		
Input No Load Current	Enable asserted (input on) and inhibit de-asserted (output on)			35	W
Inrush Capacitance	Low input capacitance options available			40	µF

[1]Powered on at -40°C. Self-heating increased card cage rail temperature during test.

Output Characteristics; +12V DC/180.0A Output

Parameter	Notes	Min.	Typical	Max.	Units
Voltage Set Point	100% output load	11.88	12.00	12.12	V
Line Regulation			0	±0.5	%
Load Regulation	0 To 100% output load		0.10	±2	%
Ripple/Noise (peak-to-peak)[2]			25	50	mVp-p
Ext. Load Capacitance	Testing to higher values available upon request	0		19,000	µF
Load Current Range		0		180	A
Overvoltage Protection	Optional crowbar set to 13.87V DC	14.67	15.44	16.21	V
Overcurrent Protection	Programmable regulated current limit and over-load threshold			186	A
Transient Response	See figure below				

[2]Ripple and noise measured at backplane; no external capacitors, using Tektronix probe TPR1000 and 20 MHz bandwidth.

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Output Characteristics; +3.3V DC AUX/40.0A Output

Parameter	Notes	Min.	Typical	Max.	Units
Voltage Set Point	100% output load	3.267	3.30	3.333	V
Line Regulation			0	±0.5	%
Load Regulation	0 to 100% output load		0.10	±2	%
Ripple/Noise (peak-to-peak)[3]			40	50	mVp-p
Ext. Capacitive Load	Testing to higher values available upon request	0		19,000	µF
Load Current Range		0		40	A (DC)
Overvoltage Protection	Optional crowbar set to 4.02V DC	4.11	4.33	4.55	V (DC)
Overcurrent Protection	Programmable regulated current limit and overload threshold			45	A (DC)
Transient Response	See figure below				

[3]Ripple and noise measured at backplane, no external capacitors, using Tektronix probe TPR1000 and 20 MHz bandwidth.

General Characteristics

Parameter[4]	Notes	Units
Efficiency	See figures below	%
Humidity	VITA 47.2 (non-condensing)	% relative humidity (RH)
Vibration	VITA 47.2, Class V2	
Shock	VITA 47.2, Class OS1, sawtooth	
Altitude	VITA 47.2	ft
ESD[5]	VITA 47.2 (150pF + 330 Ohms)	kV

[4] Custom testing available.
[5] Testing not complete.

Indicators

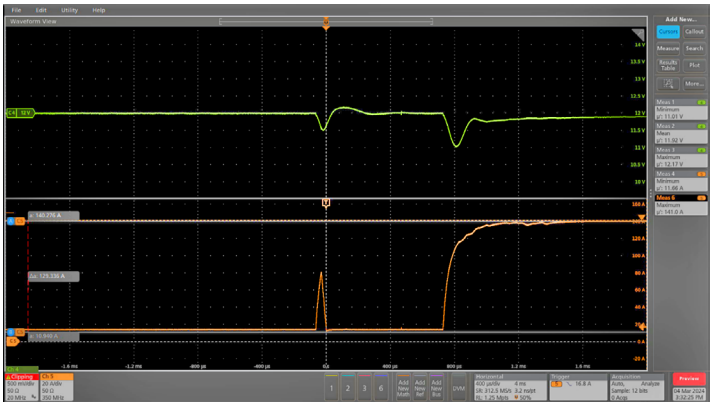
Indicator Name	Description
Input OK (Green LED)	Indicates input power is within specification
3.3V Output OK (Green LED)	Indicates 3.3V output is enabled and within specification
12V Output OK (Green LED)	Indicates +12V output is enabled and within specification
Over Temperature (Red LED)	Indicates power supply is nearing over temperature point

Alignment Keys

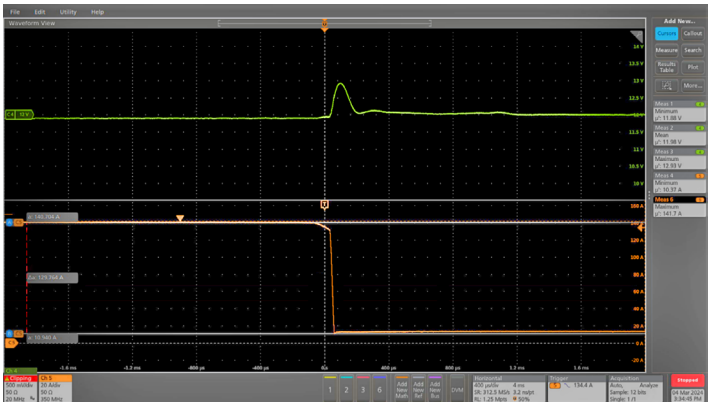
- Key 1: 315 degrees
- Key 2: 0 degrees
- Key 3: 45 degrees

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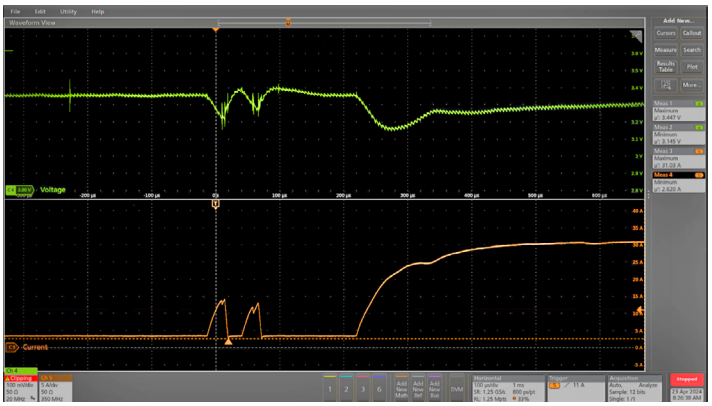
12V Output Transient Response; Turn ON; 142.0A



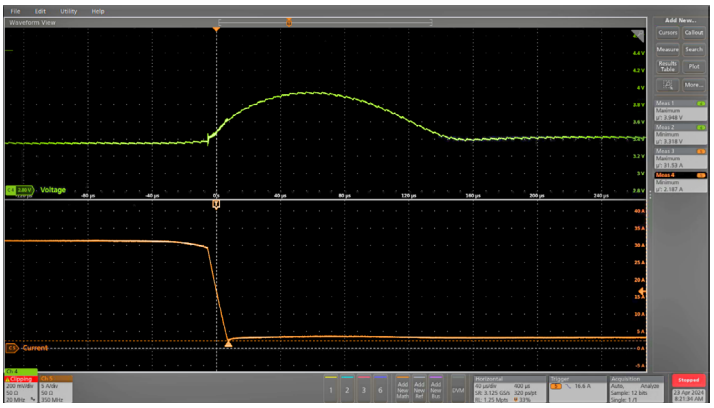
12V Output Transient Response; Turn OFF; 142.0A



3.3V Output Transient Response; Turn ON; 32.0A

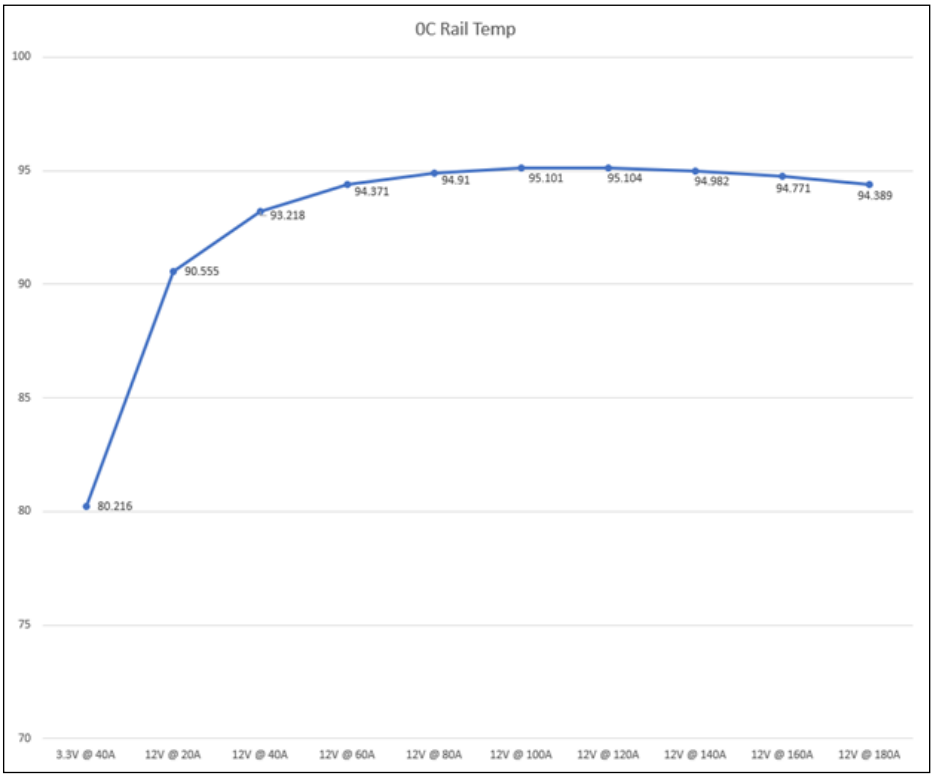


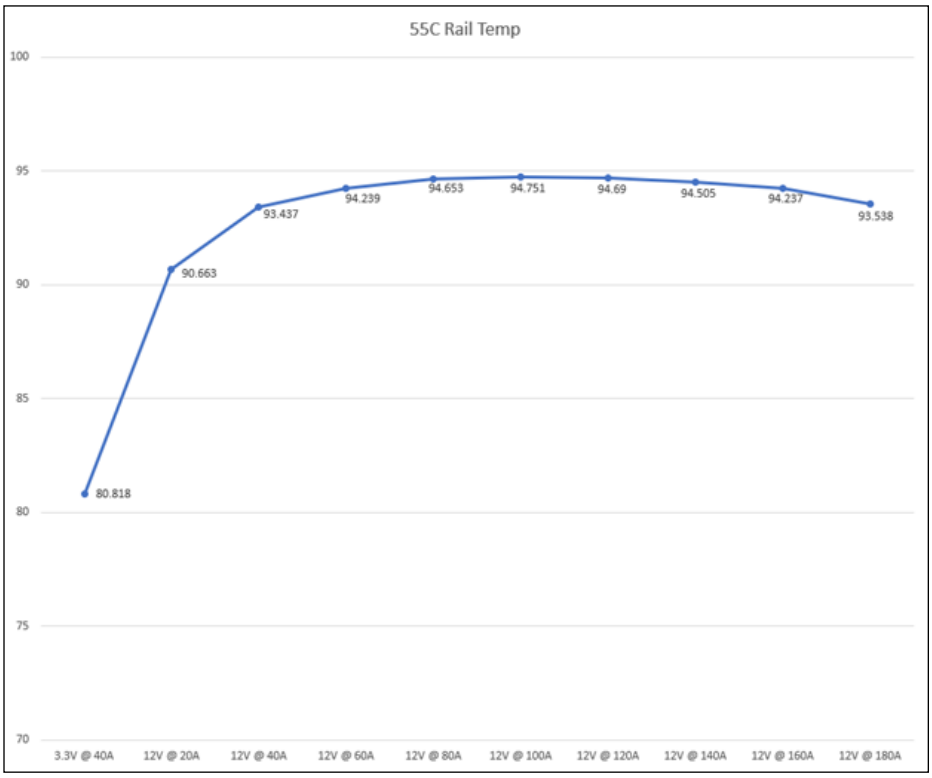
3.3V Output Transient Response; Turn OFF; 32.0A



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EFFICIENCY CHARTS

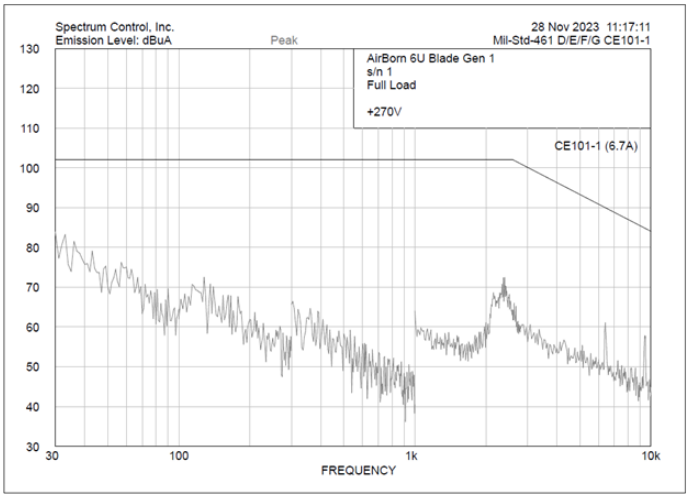




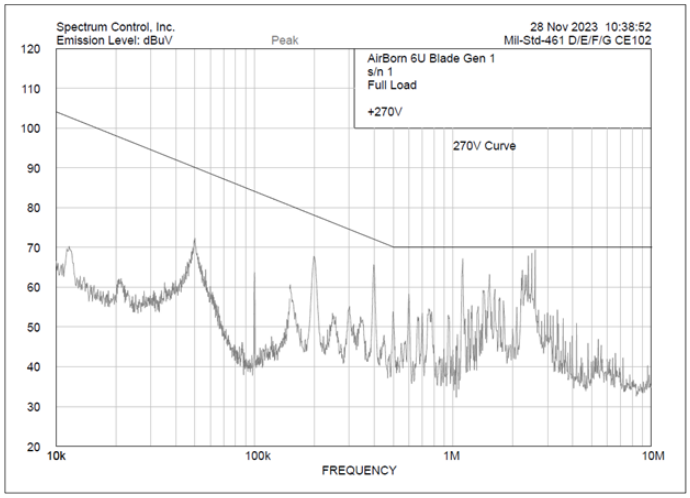
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COMPLIANCE

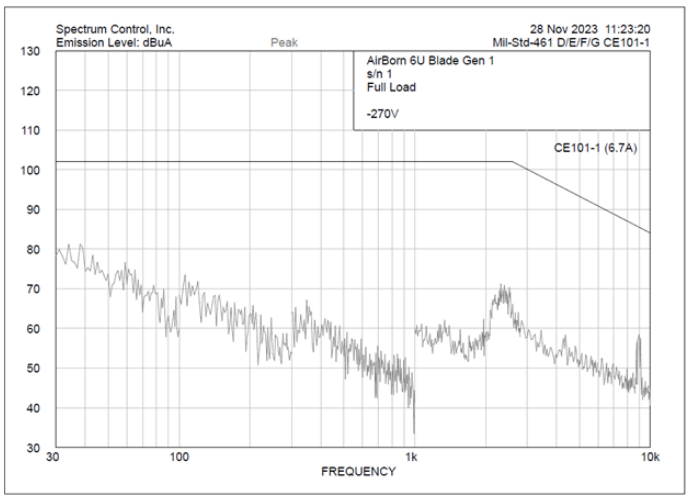
Compliance CE101 Positive Rail; 160.0A load on 12V DC; 30.0A load on 3.3V DC



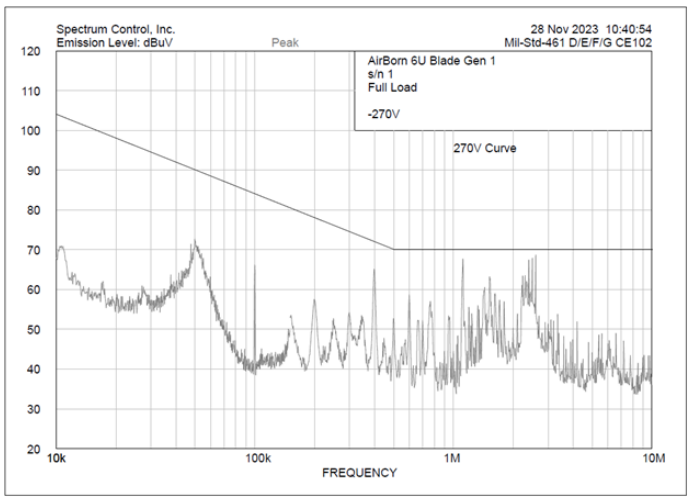
Compliance CE102 Positive Rail; 160.0A load on 12V DC; 30.0A load on 3.3V DC



Compliance CE101 Negative Rail; 160.0A load on 12V DC; 30.0A load on 3.3V DC



Compliance CE102 Negative Rail; 160.0A load on 12V DC; 30.0A load on 3.3V DC



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CONNECTOR PINOUTS

6U P0 Connector Pinout

Pin Number	DC Input	Description
P7	+DCIN	Positive DC input
P6	+DCIN	Positive DC input
P5	-DCIN	DC input return
P4	-DCIN	DC input return
P3	N/C	N/A
P2	N/C	N/A
P1	CHASSIS	CHASSIS

E: 2364867-1 connector with TE: 2313445-1 spacers installed on power supply.
[1] DC input return is bonded to POWER_RETURN on P1 output connectors in 48V input voltage option. It is isolated in 270V and 375V input voltage options.

6U P1 Connector Pinout

Pin Number	Pin Name	Signal	Description
P10	PO1	+12V DC (Vs1, Vs2)	+12V in VPX output systems
P9	PO2	+12V DC (Vs1, Vs2)	+12V in VPX output systems
A9	PO1_SENSE	SENSE, +12V DC	Main output voltage sense; Consult Molex
B9			Not Used
C9			Not Used
D9			Not Used
A8	PO1_SENSE_RTN	SENSE_RTN, +12V DC	Return for main output voltage sense; Consult Molex
B8			Not Used
C8			Not Used
D8			Not Used
A7	PO1_SHARE	SHARE_1	CAN BUS HIGH – 120 Ohm differential signal used for signaling between cards. To be terminated with 120 Ohm resistor to B7 on backplane in two locations near pins A7 and B7 pins at power supply locations on geographical ends of backplane
B7	PO2_SHARE	SHARE_2	CAN BUS LOW – 120 Ohm differential signal used for signaling between cards. To be terminated with 120 Ohm resistor to A7 on backplane in two locations near pins A7 and B7 pins at power supply locations on geographical ends of backplane
C7			Not Used
D7	SIGNAL_RETURN	SIGNAL_RETURN	Reference for backplane control IO, including IPMI, Discrete IO and CAN BUS
P8	POWER_RETURN	POWER_RETURN	Return for main output and aux output power
P7	POWER_RETURN	POWER_RETURN	Return for main output and aux output power
A6	SM2	SM2	IPMB_SCL
B6	SM3	SM3	IPMB_SDA
C6	-12V_AUX	-12V_AUX	-12V_AUX Output
D6	SYSRESET*	SYSRESET*	System Reset, held low to SIGNAL_RETURN until 3.3V_AUX is powered. Driving low externally will initiate a reset
A5	GAP*	GAP*	Geographic address parity

**TE: 2314578-1 connector on power supply.*

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6U P1 Connector Pin Out (Continued)

Pin Number	Pin Name	Signal	Description
B5	GA4*	GA4*	Geographic address 4
C5	SM0	SM0	IPMA_SCL
D5	SM1	SM1	IPMA_SDA
A4	GA3*	GA3*	Geographic address 3
B4	GA2*	GA2*	Geographic address 2
C4	GA1*	GA1*	Geographic address 1
D4	GA0*	GA0*	Geographic address 0
A3	UD2	NVMRO	Tie to SIGNAL_RETURN to allow EEPROM writes
B3	+12V_AUX	+12V_AUX	+12V AUX in VPX output systems
C3	NED	NED	Crowbar 12V logic signal referenced to POWER_RETURN. Tie together when operating with outputs in parallel
D3			Not used
P6	PO3	+12V DC, (Vs1, Vs2) OR N/C	Main 12V output in VPX output systems
P5	PO3	+12V DC, (Vs1, Vs2) OR N/C	Main 12V output in VPX output systems
P4	POWER_RETURN	POWER_RETURN	Return for main output and auxiliary output power
P3	POWER_RETURN	POWER_RETURN	Return for main output and auxiliary output power
A2	VBAT	VBAT	Not connected with default configuration
B2	FAIL*	FAIL*	Driven low when a PSU module failure has occurred
C2	INHIBIT*	INHIBIT*	Tie to SIGNAL_RETURN to disable all outputs other than 3.3V_AUX
D2	ENABLE*	ENABLE*	Tie to SIGNAL_RETURN to allow operation, including auxiliary supplies
A1			Not used
B1			Not used
C1	UD5	3.3V_AUX SENSE (UD5)	3.3V_AUX output voltage sense; Consult Molex
D1	UD6	3.3V_AUX_SENSE_RTN (UD6)	Return for 3.3V_AUX output voltage sense. Consult Molex
P2	3.3V_AUX	3.3V_AUX	3.3V_AUX output voltage
P1	POWER_RETURN	POWER_RETURN	Return for 3.3V_AUX output voltage

**TE: 2314578-1 connector on power supply.*

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THERMAL DERATES, PROTECTIONS AND SHUTDOWNS

Thermal Derate

Testing has demonstrated performance at chassis rail temperature per the Maximum Continuous Operating Power specification, tested at typical input voltage. This testing was performed with insulation applied to the primary and secondary surfaces of the VPX power module to reflect heat transfer predominantly through the side rail of the VPX module into the card cage rail. Note that the VPX module rail temperatures were higher at these operating points due to temperature drop in the dry interface between the VPX module and the card cage rail during testing. Depending on the surface temperatures of devices next to the VPX module, there may be influence on the thermal performance.

Input Voltage Derate

Performance has been validated with operation in the Nominal Operating Input Voltage range specified, as well as during transients tested per the handbook for MIL-STD-704F without holdup. Please contact Molex for applications with operation outside of the MIL-STD-704F operating conditions.

Software Monitored Shutdowns

- PCB and internal power module over temp (configured to be 105°C for PCB measured in three locations, and 120°C for each internal power module). This is checked in a 100ms control loop.
- Undervolt comparator on an internal bus held to 1/8th of the input voltage. Software shutdown should be under 1µs with interrupt driven control when the bus is below 20V and be cleared above 25V.
- Crowbar trigger. (Nominal thresholds: 4.02V on the 3.3V aux output, 13.87V on the 12V main output). Crowbar trigger is set in hardware and monitored in software. Software shutdown should be under 1µs with interrupt driven control.
- Output overcurrent shutdown. (Can be configured on/off). If current is above X amps for Y amount of time software triggers a shutdown. X and Y are configurable, and Y is a multiple of 100ms.
- Output undervoltage shutdown. (Can be configured on/off). If output voltage is below X volts for Y amount of time software triggers a shutdown. X and Y are configurable, and Y is in multiples of 100ms.

The FAIL* Signal is asserted for the above conditions. For recovery of the software monitored shutdowns, toggle enable line off and on with a pulse at least 100ms long (assuming fault conditions are cleared). Optional automatic recovery options are available.

Hardware Only Shutdowns

Internal power module protections for:

- Input Over Voltage (sets above 420V DC, clears below 405V DC)
- Input Under Voltage (shutdown below 140V DC, clears above 150V DC)
- Output Over Current, per each of three internal power modules (sets above 36.0A on an internal bus with a voltage of 1/8th of the input voltage)
- Internal Over Temperature (sets above 125°C, recovers below 105°C)
- 12V output over voltage disable (sets in the range of 14.27 to 16.21V)
- 3.3V output over voltage disable (sets in the range of 4.11 to 4.55V)

Remote Sensing

Provisions for remote sensing are provided per the VITA 62 specification on the remote sense lines (PO1_SENSE, PO1_SENSE_RTN, 3.3V_AUX SENSE, 3.3V_AUX_SENSE_RTN), and are reserved for special circumstances. When they are floating, there is an internal 10 Ohm resistor inside the VPX power module that terminates each sense line to the corresponding outputs local to corresponding power pins on the P01 connector.

Should the remote sense lines be terminated external to the VPX power module in a system, any steady state voltage drop will be compensated for within stability limits of the power supply. While it may be desired for a DC steady state correction, under dynamic conditions, such a correction may be detrimental. As an external voltage drop being compensated for is typically load dependent, the VPX power module output will be modulated as a function of output load. In a typical system, this will result in an increase in the amplitude of output voltage transients for a given load change compared to the amplitude of transient in the output voltage should remote sensing not be connected.

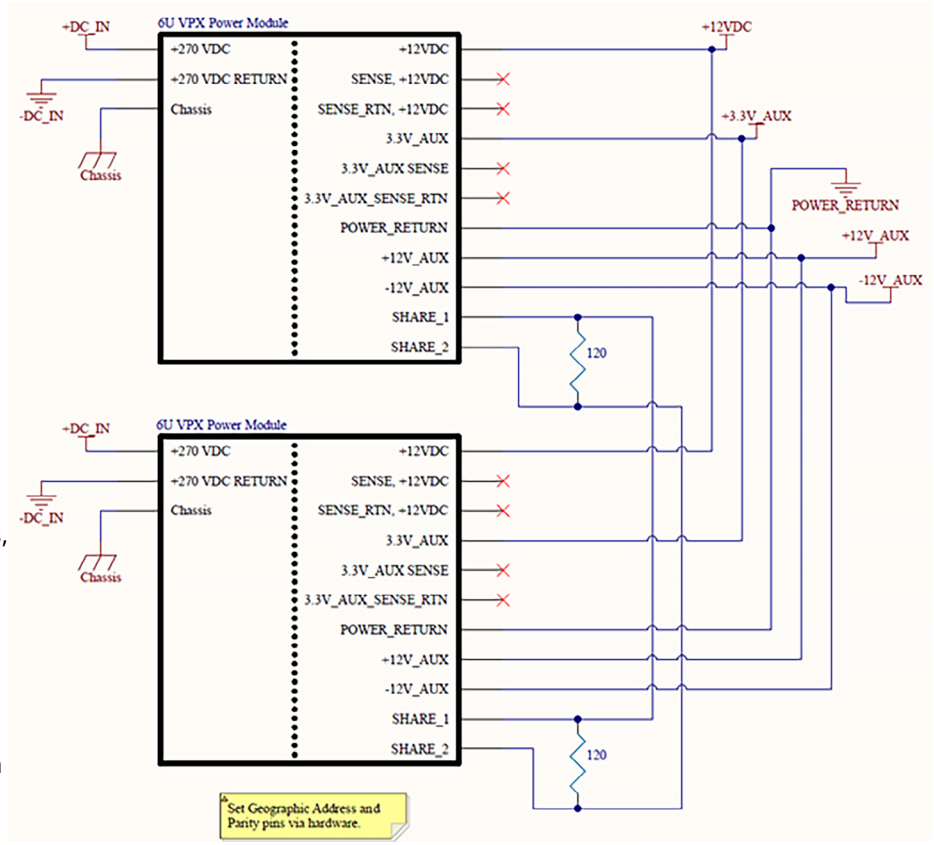
For a system with a single VPX power module, remote sensing may be used as long as the feedback location is electrically close from an AC stability perspective. Please contact Molex with system information for evaluation of remote sensing if desired.

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PARALLEL OPERATION

The VPX power module may be operated in parallel with other VPX power modules in a system given the following conditions:

- Remote sense lines (PO1_SENSE, PO1_SENSE_RTN, 3.3V_AUX SENSE, 3.3V_AUX_SENSE_RTN) are not connected to the system.
- The PO1_SHARE and PO2_SHARE lines are routed to all of the VPX power modules in the system with terminating resistors as specified.
- Each power supply is assigned a valid (correct Geographic Address Parity level), and unique geographic address, starting at GA = 01h.
- Molex is consulted prior to operating more than three VPX power modules in a system.



The VPX power modules each have a current regulator on the +12V and +3.3VDC_AUX outputs, and in the default configuration, reverse power flow from each output back to the input is blocked. This combination allows the +12V and +3.3VDC_AUX outputs to be bussed together even when uncoordinated without adverse effects other than potential unbalance up to the current limit(s) of modules that are operating in parallel. There is digital communication between VPX power modules using the PO1_SHARE and PO2_SHARE which facilitates a steady state power balance. Each VPX module adjusts its target output voltage in small increments to facilitate a balance in current between VPX modules in a system. This steady state adjustment takes advantage of local sensing combined with the voltage drop between the VPX module and the backplane where the power connections between VPX modules are bussed together.

Due to the regulated current limit and block of reverse power flow in each VPX module, the system is functional even in the event of a misconfiguration or loss of communication between VPX modules for any reason.

Should remote sense be used to a common point in the backplane, each VPX module will attempt to make adjustments to the voltage at the common point in order to balance their internally measured current. This will result in conflicting targets for the voltage at the common point and lead to a system which does not share current properly. Please contact Molex if there is a need for remote sensing with parallel operation to discuss options.

Note that the +12V_Aux output is derived from the +12V output, and will adjust with the +12V output. The adjustment range has a nominal maximum of no more than ± 1% for any given secondary VPX module, with the module with the lowest geographic address being primary and regulating to 12.00V.

It is intended that the loads on the +12V_Aux output are small such that even with an unbalance the output current from the +12V_Aux and -12V_Aux the loads stay below 1.5A each. Note that currents are able to circulate from one +12V_Aux output to another, and if the +12V_Aux outputs are used in parallel, a modest resistance between +12V_Aux outputs may be designed into the system, and/or diodes in the system on the 12V_Aux outputs, to reduce circulating currents between the +12V_Aux outputs to be below 1.5A including +12V_Aux loads.

ENABLE* and INHIBIT* Operation/Usage

The combination of both input signals controls the operation of the Molex VPX Power Module outputs. These input signals are active low and should use SIGNAL_RETURN as reference when pulled low. ENABLE* will disable all output voltages if in a high state.

While ENABLE* is in a low state the 3.3V_AUX output will remain on, and the remaining outputs will be controlled through INHIBIT*. In this state the remaining outputs will stay off if INHIBIT* is in a low state and will turn on if in a high state.

ENABLE*	INHIBIT*	3.3V_AUX	Remaining Outputs
LOW	HIGH	ON	ON
LOW	LOW	ON	OFF
HIGH	LOW/HIGH	OFF	OFF

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IPMI

The intelligent platform management interface (IPMI) as part of VITA 46.11 allows for monitoring sensors on the board and reading information about the power supply. To use the IPMB interface, use the SM0 and SM1 pins which are I2C SCL and SDA pins respectively. A pullup resistor is also required to 3.3V_AUX for both SM0 and SM1. To assign each power supply with a unique hardware I2C address, the geographic address pins need to be set (see Geographic Addressing below). The I2C bus operates as a multi master bus configuration as defined by IPMI 1.5 with a baud rate of 100 kHz.

I2C Interface

The I2C interface complies with ANSI/VITA 46.11-2022 System Management on VPX. The interface supports the requirements to be Tier 1 compliant. The VITA 46.11 specification is built upon the IPMI specification v1.5. The table below lists out the available IPMI messages supported, and the format for these messages can be found in the IPMI specification. There are also IPMI commands specific to VITA 46.11 found in the VITA specification.

Supported IPMI Commands

The following is a list of the supported IPMI commands.

Command	NetFn	CMD	Description
Global Commands			
Get Device ID	06h	01h	This command is used to retrieve the Intelligent Device's Hardware Revision, Firmware/ Software Revision, and Sensor and Event Interface Command specification revision information.
Get Self-Test Results	06h	04h	This command directs the device to return its self-test results, if any.
Sensor Commands			
Get Device SDR Info	04h	20h	This command returns general information about the collection of sensors in a Dynamic Sensor Device.
Get Device SDR	04h	21h	The 'Get Device SDR' command allows the SDR information so sensors for a Sensor Device can be returned.
Reserve Device SDR Repository	04h	22h	This command is used to obtain a reservation ID used to notify the Requester of changes during a multi-part read.
Get Sensor Reading	04h	2dh	This command returns the present reading for sensor.
FRU Device Commands			
Get FRU Inventory Area Info	0Ah	10h	Returns overall the size of the FRU Inventory Area in this device, in bytes.
Read FRU Data	0Ah	11h	The command returns the specified data from the FRU Inventory Info area.
Write FRU Data	0Ah	12h	The command writes data into the FRU Inventory Info area.
VITA 46.11 Defined Commands			
Get VSO Capabilities	2Ch	00h	Provides a mechanism for querying whether the IPMC supports VITA 46.11. Additionally, certain basic operating parameters and limits are returned.
Set IPMB State	2Ch	09h	This command allows management software to set the state of the IPMB.
Get Device Locator Record ID	2Ch	0Dh	This command is used to accelerate access to the individual FRU or Management Controller Device Locator Records.
Get F Address Info	2Ch	40h	This command is used to determine the FRU Device IDs of FRUs that are being repre-sented by a particular IPMC.
Get Mandatory Sensor Numbers	2Ch	44h	The command returns sensor numbers for the VITA 46.11 Mandatory sensors.
Get Power Supply Capabilities	2Ch	4Bh	Supports INHIBIT* and FAIL* reporting as well as Self Protect Bypass[1] (battleshort mode)
Get Power Supply Status	2Ch	4Ch	Supports INHIBIT* and FAIL* reporting as well as Self Protect Bypass[1] (battleshort mode)
Set Power Supply Status	2Ch	4Dh	Supports INHIBIT* and FAIL* reporting as well as Self Protect Bypass[1] (battleshort mode)

1. Self Protect Bypass does not persist over power cycle.

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Geographical Addressing

The GA0* through GA4* input pins make up the geographical address of the power supply. Each slot in the chassis should have a unique geographical address. This address determines the IPMB address as well. There is also a GAP* input pin which is a parity bit pin to ensure the geographical address is valid. The hardware address is a 7-bit address used by I2C, and the IPMB address is an 8-bit address used as part of the IPMI interface. The geographical addresses are defined in the table below as per VITA 46.11.

VPX Slot ID	Geographical Address						Hardware Address	IPMB Address
	GAP*	GA4*	GA3*	GA2*	GA1*	GA0*		
0	Geographical address of 0 is invalid.						NA	NA
1	U	U	U	U	U	G	21h	42h
2	U	U	U	U	G	U	22h	44h
3	G	U	U	U	G	G	23h	46h
4	U	U	U	G	U	U	24h	48h
5	G	U	U	G	U	G	25h	4Ah
6	G	U	U	G	G	U	26h	4Ch
7	U	U	U	G	G	G	27h	4Eh
8	U	U	G	U	U	U	NA	NA
9	G	U	G	U	U	G	NA	NA
10	G	U	G	U	G	U	NA	NA
11	U	U	G	U	G	G	NA	NA
12	G	U	G	G	U	U	NA	NA
13	U	U	G	G	U	G	NA	NA
14	U	U	G	G	G	U	NA	NA
15	G	U	G	G	G	G	NA	NA
16	U	G	U	U	U	U	NA	NA
17	G	G	U	U	U	G	NA	NA
18	G	G	U	U	G	U	NA	NA
19	U	G	U	U	G	G	NA	NA
20	G	G	U	G	U	U	NA	NA
21	U	G	U	G	U	G	NA	NA
22	U	G	U	G	G	U	NA	NA
23	G	G	U	G	G	G	NA	NA
24	G	G	G	U	U	U	NA	NA
25	U	G	G	U	U	G	NA	NA
26	U	G	G	U	G	U	NA	NA
27	G	G	G	U	G	G	NA	NA
28	U	G	G	G	U	U	NA	NA
29	G	G	G	G	U	G	NA	NA
30	G	G	G	G	G	U	NA	NA
31	U	G	G	G	G	G	NA	NA

U=Unconnected; signal is pulled-up on the module and results in a logic 0
G=Biased to ground on the backplane; results in a logical "1"
IPMB addresses labeled as NA are outside the VITA 46.11 IPMB attached power supply range 20 to 27h.

VPS-601 6U VPX Power Supply ›

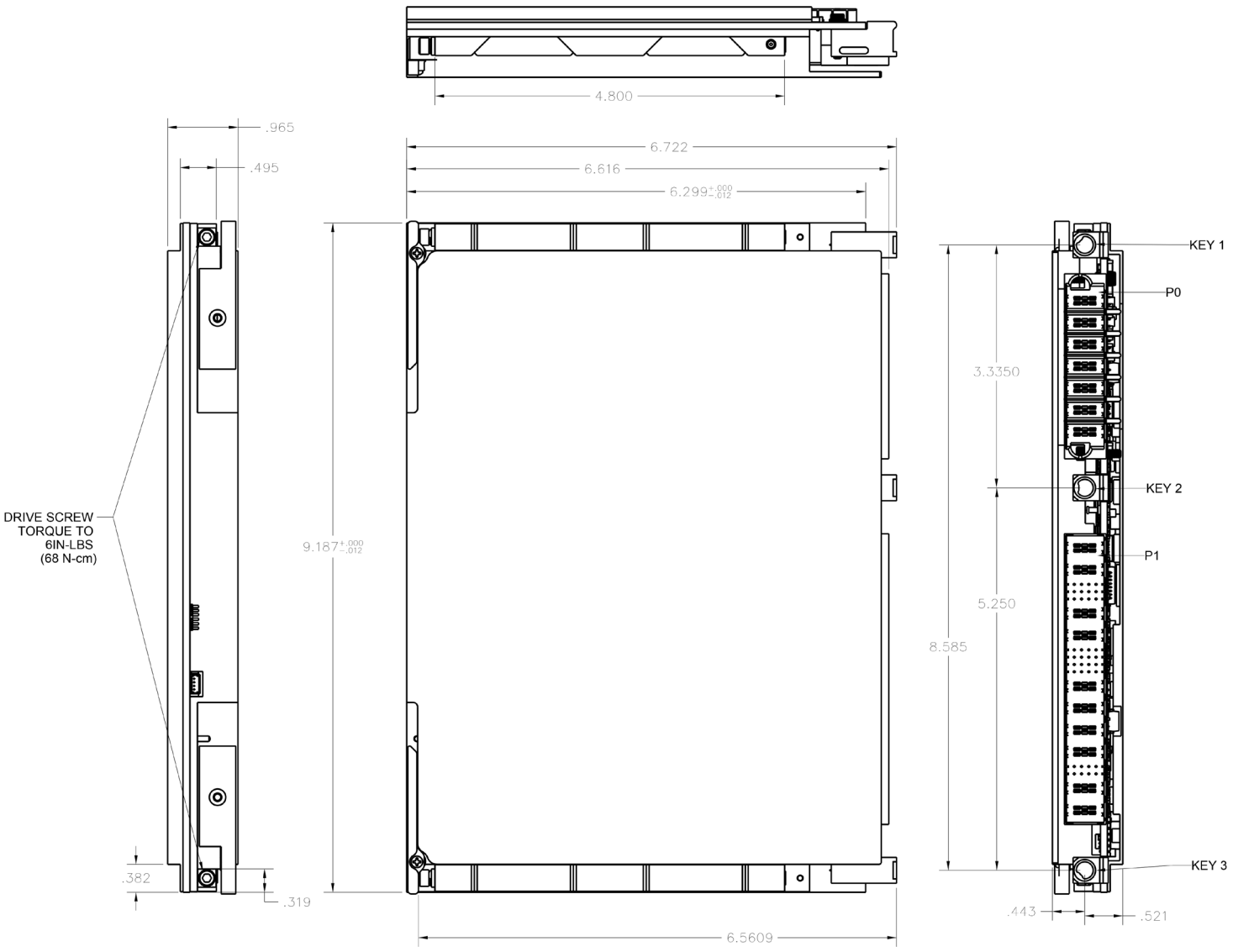
IPMI Sensor List

IPMI also supports implementation of custom sensors. Some sensors are described as part of the VITA 46.11 specification. The other sensors are VPX power supply specific and can read various voltages, temperatures and currents. The table below lists the sensors supported. The IPMI firmware revision listed in the table is the minimum firmware revision required to access the sensor. The IPMI firmware revision can be accessed via the Get Device ID command.

Sensor Number	Sensor Name	IPMI Firmware Revision	Notes
0	FRU state	1.0	VITA 46.11 mandatory
1	IPMB link	1.0	VITA 46.11 mandatory
2	FRU health	1.0	VITA 46.11 mandatory
3	Global voltage	1.0	VITA 46.11 mandatory
4	Global temp	1.0	VITA 46.11 mandatory
5	Payload test	1.0	VITA 46.11 mandatory
6	Payload test status	1.0	VITA 46.11 mandatory
7	Payload mode	1.0	
8	PCB top temp	1.0	
9	PCB bottom temp	1.0	
10	PCB center temp	1.0	
11	3.3V output voltage	1.0	Main voltage is 20V on VPX6U23S10-375-003
12	12V output voltage	1.0	
13	35V bus voltage	1.0	35V bus voltage for 270V input VPX 48V bus voltage for 48V input VPX and 375V input VPX
14	3.3V output current	1.0	
15	12V output current	1.0	
16	BCM1 voltage	1.0	N/A for 48V input
17	BCM1 temperature	1.0	N/A for 48V input
18	BCM2 voltage	1.0	N/A for 48V input
19	BCM2 temperature	1.0	N/A for 48V input
20	BCM3 voltage	1.0	N/A for 48V input
21	BCM3 temperature	1.0	N/A for 48V input
22	BCM1 input current	1.5	N/A for 48V input
23	BCM2 input current	1.5	N/A for 48V input
24	BCM3 input current	1.5	N/A for 48V input
25	12V AUX voltage	1.5	
26	12V AUX negative voltage	1.5	
27	NVMRO	1.5	Available on some models

VPS-601 6U VPX Power Supply ›

MECHANICAL DRAWING



Mechanical (1.0" pitch)

- **Dimensions:** 233.34 L by 170.68 W by 24.51mm H (9.187" L by 6.722" W by 0.965" H)
- **Input Connector:** P0- TE 2364867-1
- **Output Connector:** P1- TE 2314578-1

SALES PART NUMBERS

Molex Part Number	Legacy AirBorn Part Number	Descriptions
VPS-601-0001	VPX6U23S01-270-000	2,300W VITA 62, OpenVPX-compliant, 48.2 Conduction Cooled (CC) 6U power supply, 270V DC input, 12V DC Heavy + 3.3V Aux
VPS-601-0002	VPX6U23S01-270-004	2,300W VITA 62, OpenVPX-compliant, 48.4 Liquid Flow Through (LFT) 6U power supply, 270V DC input, 12V DC Heavy + 3.3V Aux

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