Military-Grade VPX Power Supply

≫Product Technical Specification≪

1000W 6U VPX 8HP AC Input Power Supply

VPX-P1000A6

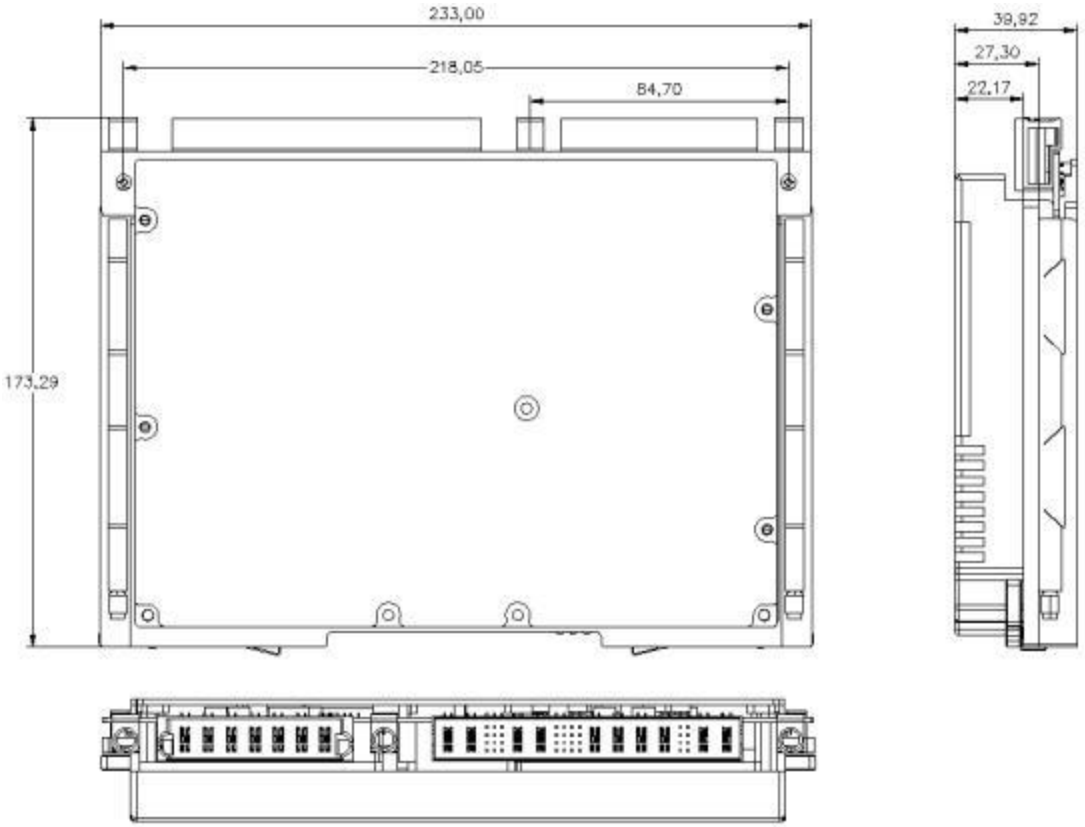
Product Overview

This standard 6U VPX 8HP AC input power supply is fully compliant with VITA 62 standards. It supports both air-cooled and conduction-cooled configurations. The product features a wide input voltage range, high efficiency, and high reliability, making it suitable for harsh environments such as vehicular, naval, and airborne applications.

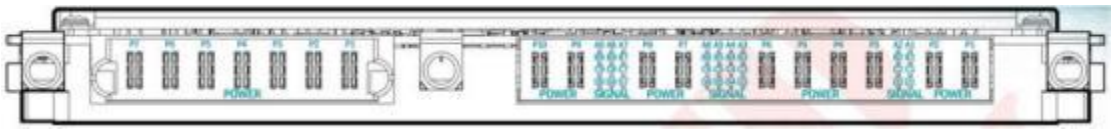
Product Technical Specifications

Input	Input Voltage	Range: 100–265 VAC; Nominal: 220 VAC		
	Input Frequency	47～63Hz， 50/60Hz typ.		
	Input Current	≤6.8A(Vin=220VAC, full load)		
	Power Factor	≥0.95(Vin=220VAC, full load)		
	Input Inrush Current	≤20A（Vin=220V, full load）		
Output	Output Voltage	VS1/VS2:12V	VS3:5V	3.3V_AUX:3.3V
	Maximum Output Current	84A	25A	30A
	Ripple and Noise	200mV	50mV	50mV
	Maximum Output Power	1000W (total output power)		
	Efficiency	83% typ.（Vin=220VAC）		
	Output Current Sharing	√		
	N+1 Redundancy	√		
	Hot-Swappable	√		
	Protection	Over-voltage, over-current, short-circuit, and over-temperature protection		
Other Features	Status Indicators	√		
	MTBF	≥50,000 hours @25℃		
Isolation	Insulation withstand voltage	Input to Output: 2000 VAC Input to Case: 1500 VAC Output to Case: 500 VDC		
Mechanical and Environmental Characteristics	Dimensions	Standard 6U 8HP*233mm*160mm (H×W×D), compatible with air-cooled and conduction-cooled configurations		
	Cooling Method	Supports air cooling or conduction cooling		
	Weight	Less than 2.5 kg (including heat sink)		
	Operating Temperature	-40℃-85℃		
	Storage Temperature	-40℃-85℃		
	Relative Humidity	5-95%RH(non-condensing)		
	Altitude	Suitable for operation at altitudes up to 3500 meters		
	Vibration & Shock	Meets GJB150-2009 standard		

Dimensions



Interface Signal Definitions



6U P0 Interface Definitions

Pin	Function	Description
P7	AC_L	AC Input Live Wire
P6		
P5	AC_N	AC Input Neutral Wire
P4		
P3	NC	Not Connected
P2	NC	Not Connected

P1	CHASSIS	Chassis Ground

6U P1 Interface Definitions

Pin	Function	Description	Notes
P10	PO1	+12V(VS1/VS2) Power Output	
P9	PO2		
A9	PO1_SENSE	+12V(VS1/VS2)Remote Voltage Compensation Positive	
B9	PO2_SENSE		
C9	PO3_SENSE	+5V(VS3)Remote Voltage Compensation Positive	
D9	PSU_Run-	Power Status Indicator Signal	
A8	PO1_SENSE_RTN	+12V(VS1/VS2)Remote Voltage Compensation Negative	
B8	PO2_SENSE_RTN		
C8	PO3_SENSE_RTN	+5V(VS3)Current Sharing Signal	
D8	TEMP_ALERT-	Temperature Alert Signal	Optional, not supported by default
A7	PO1_SHARE	+12V(VS1/VS2)Current Sharing Signal	
B7	PO2_SHARE		
C7	PO3_SHARE	+5V(VS3)Current Sharing Signal	
D7	SIGNAL_RETURN	GND	Power Ground
P8	POWER_RETURN	GND	Power Ground
P7	POWER_RETURN		
A6	SCL2	I2C Clock Signal 2	Optional, not supported by default
B6	SDA2	I2C Clock Signal 2	Optional, not supported by default

Pin	Function	Description	Notes
C6	NC	Not Connected	
D6	SYSRESET*	System Reset Signal	Reserved function (not supported by default), input signal
A5	GAP*	GAP Address	
B5	GA4*	GA4 Address	
C5	SCL1	I2C Clock Signal 1	Optional, not supported by default
D5	SDA1	I2C Clock Signal 1	Optional, not supported by default
A4	GA3*	GA3 Address	
B4	GA2*	GA2 Address	
C4	GA1*	GA1 Address	
D4	GA0*	GA0 Address	
A3	NC	Not Connected	
B3	NC	Not Connected	
C3	SWDIO	MCU SWD Interface Data	Reserved function, not supported by default
D3	NC	Not Connected	
P6	PO3	+5V(VS3)Power Output	
P5	PO3		
P4	POWER_RETURN	GND	Power Ground
P3	POWER_RETURN		
A2	NC	Not Connected	
B2	FAIL*	Power Fault Indicator Signal	Optional, not supported by default
C2	INHIBIT*	INHIBIT*Power Control Signal	Internally pulled to 3.3V

Pin	Function	Description	Notes
D2	ENABLE*	ENABLE*Power Control Signal	Internally pulled to 3.3V
A1	+3.3V_AUXSHARE	+3.3V_AUX Current Sharing Signal	
B1	SWCLK	MCU SWD Interface Clock	Optional (not supported by default). This pin can also be used as +3.3V_AUX Output Positive Remote Voltage Compensation Signal (+3.3V_AUX SENSE)
C1	COM_RXD	MCU Serial Port Receive	Optional (not supported by default), RS232 level
D1	COM_TXD	MCU Serial Port Transmit	Optional (not supported by default), RS232 level
P2	3.3V_AUX	+3.3V_AUX Power Output	
P1	POWER_RETURN	GND	Power Ground

Signal Descriptions

1. FAIL*Signal：Power fault indicator signal. This signal outputs a low level when any output voltage fails; otherwise, it outputs a high level (3.3V). The signal is internally pulled up to 3.3V. This signal is optional and requires configuration before shipment.

2. SYSRESET*Signal：External reset input signal used to reset the MCU within the power module of the chassis. This signal is optional and requires configuration before shipment.

3.User-Defined Signals

PSU_Run-：Power output normal operation indicator signal. When the power output is normal, this signal outputs a low level; otherwise, it outputs a high level (3.3V). The signal is internally pulled up to 3.3V and can be used as an external power status indicator. This signal is optional and requires configuration before shipment.

TEMP_ALERT-：Temperature alert signal, 3.3V TTL level. When the chassis temperature exceeds 100°C, this signal outputs a low level (referenced to signal return); otherwise, it outputs a high level. This signal is optional and requires configuration before shipment.

SWCLK/SWDIO： Reserved debugging interface for the power management MCU, 3.3V TTL level signal (optional).

COM_TXD/COM_RXD：MCU RS232 serial port transmit/receive signals. Can optionally be used as a power data monitoring port (optional).

+3.3V_AUXSHARE： +3.3V_AUX Current Sharing Signal. Note: To support the +3.3V_AUX current sharing function, this pin must be connected on the backplane.

+3.3V_AUX SENSE： +3.3V_AUX Output Positive Remote Voltage Compensation Signal (optional).

Power Control Status

By default, this power supply uses the ENABLE* signal to control the power on or off, with a low level being active. The control logic is as follows:

ENABLE*	+3.3Vaux	+12V、+5V
HIGH	ON	OFF
LOW	ON	ON

The power module can also be optionally configured for combination control using VITA62 defined ENABLE* and INHIBIT* signals. The control logic is as follows:

ENABLE*	INHIBIT*	+3.3Vaux	+12V、+5V
HIGH	HIGH	OFF	OFF
LOW	HIGH	ON	ON
HIGH	LOW	OFF	OFF
LOW	LOW	ON	OFF

Precautions

To ensure the correct use of this power supply, please observe the following:

- Operating the power supply beyond the maximum input voltage range can cause irreversible damage.
- Long-term operation under overload conditions can cause irreversible damage.
- For prolonged or high current operation, adequate heat dissipation measures must be implemented to ensure the module temperature does not exceed 85°C.
- It is recommended to add a fuse and EMI filter at the external AC input of the power supply to ensure long-term reliable operation.