



V·INFINITY

VPM-S500 Switching Power Supply

Rev. 12-2006

Features

- Built-in active PFC function
- Short Circuit, overload, over voltage, over temperature protected
- Forced air cooling by built-in DC fan
- Current Sharing (Available)
- Current Monitoring
- Power Good Signal
- Built-in Remote Inhibit
- Built-in Remote Sense
- Extended temperature range: -40 ~ +75 °C available



Model ¹	Preset Voltage	Output ^{2, 3, 4}	Output Current		Max. Power ⁵	Ripple & Noise ^{6, 7}	
			Minimum	Maximum		Regulation ⁶	(Vpp)
VPM-S500-03R(I)	3.3V	2 - 3.3 V	0 A	80 A	264 W	+/- 1%	50 mV
VPM-S500-05R(I)	5V	5 - 6 V	0 A	80 A	400 W	+/- 1%	50 mV
VPM-S500-12R(I)	12V	12 - 15 V	0 A	41.67 A	500 W	+/- 1%	1%
VPM-S500-16R(I)	16V	16 - 21 V	0 A	31.25 A	500 W	+/- 1%	1%
VPM-S500-24R(I)	24V	22 - 30 V	0 A	22.73 A	500 W	+/- 1%	1%
VPM-S500-36R(I)	36V	31 - 47 V	0 A	16.13 A	500 W	+/- 1%	1%
VPM-S500-48R(I)	48V	48 - 56 V	0 A	10.42 A	500 W	+/- 1%	1%

Notes:

- 1 Adding "I" Indicates Current sharing model.
- 2 Customer must specify output voltage.
- 3 Output is fully isolated.
- 4 Output voltage is measured at output power connector.
- 5 Provides peak power of 900 W within 500 μ S for all models. For longer duty duration please contact us.
- 6 1% minimum load is required to maintain the ripple and regulation.
- 7 Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1 μ F ceramic capacitor and a 22 μ F electrolytic capacitor in parallel.

Input

Parameter	Conditions/Description	Min	Nom	Max	Units
Input Frequency		47		63	Hz
Input Voltage		90		264	VAC
Input Current	At 90-264 VAC			8	A
Inrush Current	Peak measured at 230 VAC at full load, cold start			70	A
Power Factor	Active power factor correction meets EN61000-3-2 class D				

Output

Parameter	Conditions/Description	Min	Nom	Max	Units
Transient response	Output voltage returns to within 1% in less than 2.5 mS for a 50% load change. Peak transient does not exceed 5%.				
Overshoot	Turn-on and turn-off overshoot shall not exceed 5% over nominal voltage.				
Efficiency	Measured at 230 V and full load 12 V model: 80% All other models: 82%				
Turn on delay	At 120 VAC			1	second
Hold up time	At 120 VAC and 80% of rated maximim load	20			mS
Adjustability	Adjustable with built-in trim pot.	+/- 5%			
Remote sense	Designated as RS+ and RS- on the CN3. Total voltage compensation for cable losses with respect to the main output. (NOT available for current sharing models.)				
Remote Inhibit	Designated as RSW on the CN3. Requires a low signal to inhibit the output.				
LED display (LED 1)	Green - the power supply is operating normally. Orange - when any protection occurs or when Remote Inhibit is in effect.				
Power Good	Designated as PG on the CN3. This signal goes high 100-500 mS after the output reaches regulation. It goes low at least 1 mS before loss of regulation.				
Current Sharing	Designated as CSH on (CN3), use in parallel for forced current sharing function. Accuracy of shared current with up to 4 parallel units is within 10% at full load.				
Current Monitor	Disignated as CMN on (CN3) for current sense purpose. CMN is a 0.5 to 3VDC output voltage to represent a linear 0% to 100% output current.				

Protection Circuit

Parameter	Conditions/Description
Input Fuse	Built-in ac fuse. A blown fuse usually indicates permanent damage to the power supply serviceable by factory only.
Input under-voltage	Power supply shuts down when ac input is under 80 VAC. When ac line reappears over 86 +/- 5 VAC, the power supply restarts automatically.
Overload	Current limiting starts at 110-140% of the rated output current and recovers automatically.
Short circuit	Short circuit can be continuous. Recovers automatically upon removal of short.
Output Over-voltage	Output is protected against overvoltage. Unit shuts down and latches when voltage at output terminals exceeds 130%. AC input needs to be reset to restart the power supply.
Over temp.	Power supply shuts down when temperature is in excess of 85 °C. Auto recovery.

General and Safety

Parameter	Conditions/Description	Min	Nom	Max	Units
Operating temp.	Derates linearly from 100% load at 50 °C to 50% load at 70 °C.	0		50	°C
Optional operating temp.	Derates linearly from 100% load at 50 °C to 37.5% load at 75 °C.	-40		75	°C
Storage temp.		-20		85	°C
Optional storage temp.		-40		85	°C
Operating humid.	Non-condensing	5%		90%	RH
Storage humid.	Non-condensing	5%		95%	RH
EMI	Pass FCC Part 15 Subject J Class B, CISPR 22 class B, CE Mark				
Safety	UL60950-1 (E222889), CSA C22.2 No. 950-95, TUV EN60950 and CB				
Leakage Current	at 264 VAC			3.5	mA
Isolation Voltage (HI-POT)	Applied for 3 seconds Primary to secondary: Primary to transformer core: Primary to earth ground:	3000 1500 1500			VAC VAC VAC
Grounding Test	Allowable resistance measured when 25 A current is applied from the ground pin of the three prong plug to the farthest earthed connection point.			0.1	Ohm
Warranty	Standard warranty length			2	years
MTBF	According to MIL-HDBK-217 at 30 °C	150,000			hours
Burn-in	Full load, at 45 +/- 5 °C, 230 VAC. Burn-in for up to 8 hours in early productions. Time reduced gradually as product matures.	1		8	hours

Note: Customer must specify extended temperature on PO.

Mechanical

Parameter	Conditions/Description	Min	Nom	Max	Units
Weight				1450	grams
Enclosure	9.17(L) x 4.25(W) x 2.5(H)				inches
Mounting holes	Two sets of 8 threaded mounting holes available on the enclosure B: 6-32, maximum insertion depth of 0.2 inches. C: M4, maximum insertion depth of 0.2 inches.				

Input Connector - (CN1)

Parameter	Conditions/Description
AC input (Option 1)	IEC320 socket or equivalent snap-in mounting type. Suggested mating plug: IEC320 powercord.
AC Input (Option 2)	DINKLE Terminal block Part No. DT-35-A02W-03 (3 pin, M3 Screw) 8.25mm spacing Suggested mating connector: Molex 19198-0016 or similar

Note: Input connector needs to be specified on the PO.

Output Connector - (CN2)

Parameter	Conditions/Description
Output (Option 1)	Molex Part No. 26-48-1201 or similar.(20 pin) Output pin assignment, VO+ (Pins 1-10), VO- (Pins 11-20) Suggested mating connector: Molex Part No. 09-91-2000, contact:08-50-0106 or similar.
Output (Option 2)	Howder Terminal block Part No. HD-121-8P (8 pin, M3.5 Screw) 9.5mm spacing Output pin assignment, VO+ (Pins 1-4), VO- (Pins 5-8) Suggested mating connector: Molex 19198-0045 or similar.

Note: Output connector needs to be specified on the PO.

Logic Connector - (CN3)

Parameter	Conditions/Description
Logic	JS B7B-XH-A Suggested mating connector: JST XHP-7 or equivalent , Contact: SXH-001T-P0.6.
Pin Assignments:	1. CMN - Current Monitoring 2. CSH - Current Sharing 3. RTN - Return / Output Ground 4. PG - Power Good Signal 5. RSW - (Remote On-Off / Remote Inhibit) 6. RS(-) - Remote Sense 7. RS(+) - Remote Sense
Fan	JST B2B-XH-A Suggested mating connector: JST XHP-2 or equivalent, Contact: SXH-001T-P0.6.

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AJR REV. 09-2005