

## HVP600 SERIES



### 600 Watt 53V or 56V / 12VDC Dual Output Model

- 10.24 x 3.23 x 1.57" Hot-Swap Package

#### Features:

- Universal AC Input Range (90-264 VAC)
- Active Power Factor Correction (0.98 PF Typical)
- Hot-Swap / N+1 Redundant Operation
- Analog / I<sup>2</sup>C / PMBus Interface for Status & Control
- Front Panel LED Indicators
- Class B Emissions
- 2 Year Warranty

#### INPUT:

Input Voltage	90~264 VAC (Universal AC Input)
Input Frequency	47-63Hz
Inrush Current	35.2Arms @ 230 VAC Cold Start
Input Current	5.8 / 2.8A @ 115 / 230 VAC
Input Protection	Single Fuse
Hold-Up Time	10ms Minimum @ 115 VAC Minimum
Leakage Current	<1000 $\mu$ A @ 230 VAC Maximum
Power Factor	EN61000-3-2 (0.99 PF Typical)
No Load power	9 Watt Typical

#### GENERAL:

Efficiency	Up to 92% (see 80 Plus test, page 3)
Operating Temperature	-10-70°C, derate linearly to 60% load at 50-70°C
Storage Temperature	-40°C to +85°C
Over-Temp Protection	Auto-Recovery
Cooling	Internal Ball Bearing Fans
Operating Humidity	5-90% RH, Non-Condensing
Vibration	5 ~ 50 Hz, acceleration 7.35 m/s*s on X,Y and Z Axis
MTBF	>100k Hrs (according to MIL-HBK-217F) at 30°C

#### OUTPUT:

Adjustment Range	Via I <sup>2</sup> C / PMBus Interface
Minimum Load	none required
Line Regulation	$\pm$ 1%
Load Regulation	$\pm$ 2% (5VSB = $\pm$ 5%)
Ripple & Noise	$\pm$ 1% pk-pk @ 20MHz
Overload Protection	120-135% of max power (Foldback)
Over Voltage	Latching before 130% of nominal
Short Circuit Protection	Trip without damage & auto-recovery
Transient Response	recovers <2ms following a 25% load change
Switching Frequency	55KHz

#### EMC:

Electrostatic Discharge	EN61000-4-2, $\pm$ 4KV Contact / $\pm$ 8KV Air Discharge
Radiated Susceptibility	EN61000-4-3, 26-1000MHz, 10V/M, 80% AM
EFT / Bursts	EN61000-4-4, $\pm$ 2KV
Surges	EN61000-4-5, $\pm$ 2KV Line-Earth, $\pm$ 1KV Line-Line
Conducted Immunity	EN61000-4-6, 0.15-800MHz, 10V, 80% AM
Voltage Dips	EN61000-4-10, 95% Dip & 10ms, 30% Dip & 500ms
Voltage Interruptions	EN61000-4-11, 95% reduction, 5s
Fluctuations & Flicker	EN61000-3-3

#### STATUS / CONTROL:

5VSB	500mA (Always present and on)
DC Okay	Active Low
Fan Fail	Active Low
Enable	Active Low
P/S Present	Pull to Low
Current Share	V1 Only
AC Fail	Active Low

#### APPROVALS:

Emissions	EN55022 "B", FCC Part 15 Subject J Class B
Safety Approvals	IEC 60950-1 Class I

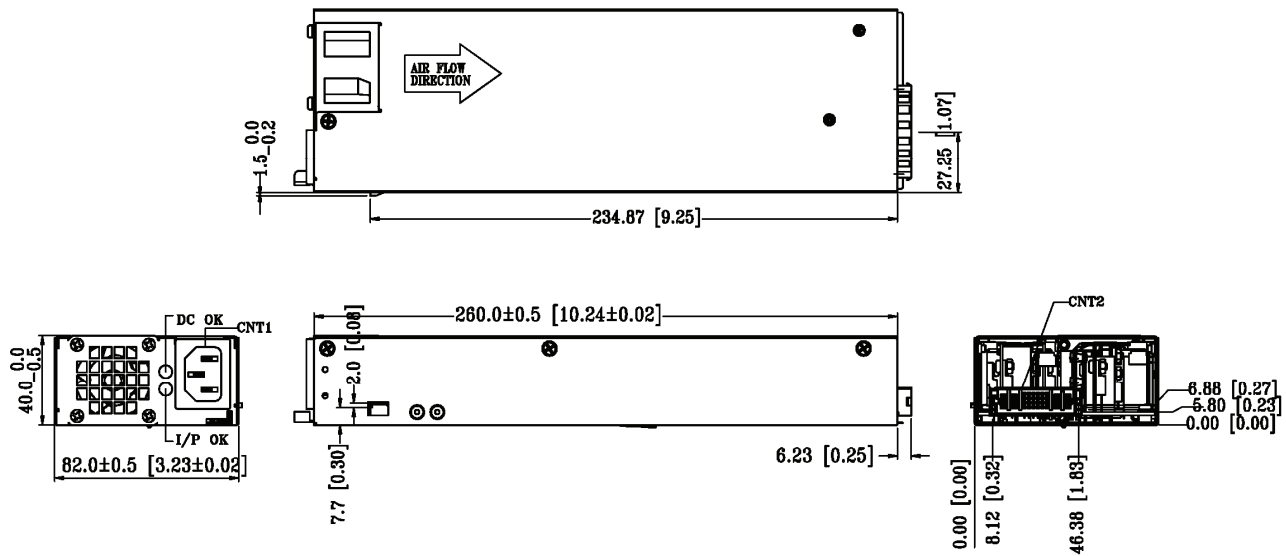
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### Output Specifications:

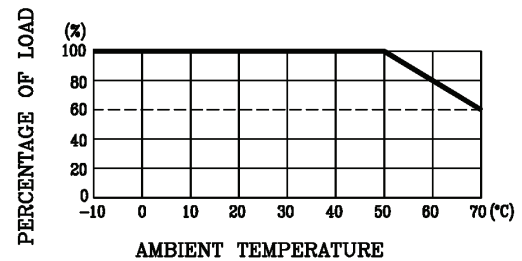
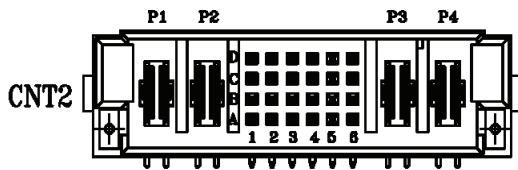
Model:	V1	I <sub>out</sub>	V2	I <sub>out</sub>	V3	I <sub>out</sub>
HVP600-D530I	+53V	7.55A	+12V	16.6A	5Vsb	500mA
HVP600-D560I	+56V	7.20A	+12V	16.6A	5Vsb	500mA

\* Maximum Output Power ≤600 Watts

### Mechanical Dimensions:



### DERATING CHART



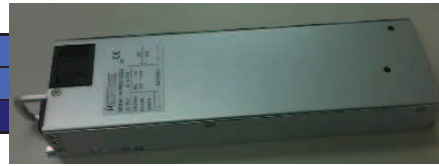
### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

CNT1			CNT2						P3	P4		
L	N	G	P1	P2	D1	D2	D3	D4			D5	D6
LINE	NEUTRAL	GND	VO2	COM	Albet	A2	DGND	5VSB	N/A	53V_CS	VO1 RTN	VO1
					C1	C2	C3	C4	C5	C6		
					PS PRNT	A1	PS EN IN	DCOK 12V L	N/A	N/A		
					B1	B2	B3	B4	B5	B6		
					12V_CS	A0	PS EN OUT	DCOK 53V L	N/A	N/A		
					A1	A2	A3	A4	A5	A6		
SCL	SDA	AC FAIL	FAN FAL	N/A	N/A							

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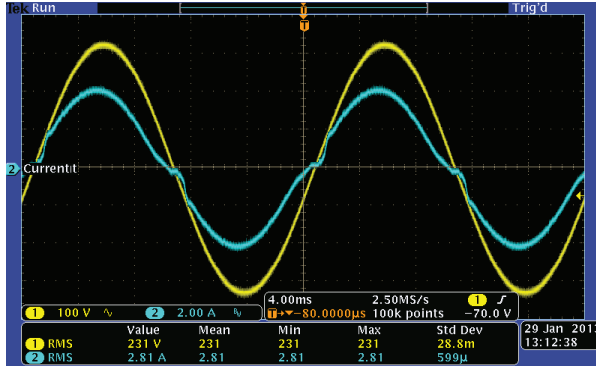
### 80 PLUS Verification and Testing Report

TYPICAL EFFICIENCY (50% Load):	92.90%
AVERAGE EFFICIENCY:	91.65%
80 PLUS COMPLIANT:	YES



Input Current and Voltage Waveforms

Manufacturer	HiTRON Electronic Corporation
Model Number	HVP600-D5301
Serial Number	N/A
Year	2013
Type	1U
Test Date	30-Jan-13



Input AC current Waveform (I<sub>inD</sub> = 8.1% , 100% Load)

Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current		Amps
Input Frequency	50-60	Hz
Rated Output Power	599.35	Watts

Note: All measurements were taken with input voltage at 230V nominal and 50 Hz

I RMS A	PF	I THD %	Load %	Fraction of Load	Input Watts	Interbal Fan Power (W)	DC Terminal Voltage(V) / DC Load Current (A)					Output Watts	Efficiency %
							56V	12V	N/A	N/A	N/A		
0.3936	0.8272	17.87	*10%	Low	74.93	0.549	53 / 0.76	12 / 1.66			60.958	82.09%	
0.6456	0.9198	14.76	20%	Light	136.68	0.549	53 / 1.51	12 / 3.32			120.74	88.74%	
1.4571	0.9691	12.49	50%	Typical	324.17	0.549	53 / 3.78	12 / 8.3			300.6	92.90%	
2.8472	0.9833	8.1	100%	Full	644.38	1.548	53 / 7.55	12 / 16.6			599.8	93.32%	

\* 10% load results are for informative purposes only and not included in certification requirements.

\*\* Fan power should be recorded if Fan exists, but is not included in the efficiency calculations.

