

**HWS300/PV**

## SPECIFICATIONS

A231-01-01/PV-A

ITEMS		MODEL	HWS300 -12/PV	HWS300 -15/PV	HWS300 -24/PV	HWS300 -48/PV	
1	Nominal Output Voltage (*1)	V	12	15	24	48	
2	Maximum Output Current (*2)	A	27	22	14(16.5)	7	
3	Maximum Output Power	W	324	330	336	336	
4	Efficiency (Typ) (*3)	100VAC	%	80	80	82	82
		200VAC	%	83	83	85	85
5	Input Voltage Range (*4)	-	85 - 265VAC (47 - 63Hz) or 120 - 330VDC				
6	Input Current (100/200VAC) (Typ) (*3)	A	4.1/2.1				
7	Inrush Current (Typ) (*5)	-	20A at 100VAC, 40A at 200VAC				
8	PFHC	-	Design to meet IEC61000-3-2				
9	Power Factor (100/200VAC) (Typ) (*3)	-	0.99/0.95				
10	Output Voltage Range (*6)	V	2.4 - 14.4	3.0 - 18.0	4.8 - 28.8	9.6 - 52.8	
11	Maximum Ripple & Noise (*7)	0≤Ta<70°C	mV	180	180	180	420
		-10≤Ta<0°C	mV	240	240	240	480
12	Maximum Line Regulation (*8)	mV	48	60	96	192	
13	Maximum Load Regulation (*9)	mV	72	90	144	288	
14	Temperature Coefficient	-	Less than 0.02% / °C				
15	Over Current Protection (*10)	A	28.4 -	23.1 -	16.7 -	7.4 -	
16	Over Voltage Protection (*11)	V	15.0 - 17.4	18.8 - 21.8	30.0 - 34.8	55.2 - 64.8	
17	Hold-up Time (Typ) (*12)	-	20ms				
18	Leakage Current (*13)	-	Less than 0.75mA. 0.2mA(Typ) at 100VAC / 0.44mA(Typ) at 230VAC				
19	Remote Sensing	-	Possible				
20	Remote ON/OFF control	-	Possible				
21	Monitoring Signal	-	PF (Open Collector Output)				
22	Parallel Operation	-	Possible				
23	Series Operation	-	Possible				
24	Operating Temperature (*14)	-	-10 - +70°C (-10 - +50°C : 100%, +70°C : 50%)				
25	Operating Humidity	-	10 - 90%RH (No dewdrop)				
26	Storage Temperature	-	-30 - +85°C				
27	Storage Humidity	-	10 - 95%RH (No dewdrop)				
28	Cooling	-	Forced Air By Blower Fan				
29	Withstand Voltage	-	Input - FG : 2.5kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (100mA), Output - CNT : 100VAC (100mA) for 1min				
30	Isolation Resistance	-	More than 100MΩ Output - FG : 500VDC More than 10MΩ Output - CNT : 100VDC at 25°C and 70%RH				
31	Vibration	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.				
32	Shock (In package)	-	Less than 196.1m/s <sup>2</sup>				
33	Safety (*15)	-	Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1 (Expire date of 60950-1 : 20/12/2020), EN50178. Designed to meet DENAN				
34	Line DIP	-	Designed to meet SEMI-F47 (200VAC Line only)				
35	Conducted Emission	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B				
36	Radiated Emission	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B				
37	Immunity	-	Designed to meet IEC61000-4-2(Level 2,3), -3(Level 3), -4(Level 3), -5(Level 3,4), -6(Level 3), -8(Level 4), -11				
38	Weight (Typ.)	-	1.0kg				
39	Size (W x H x D)	mm	61 x 82 x 165 ( Refer to Outline Drawing )				

\*Read instruction manual carefully, before using the power supply unit.

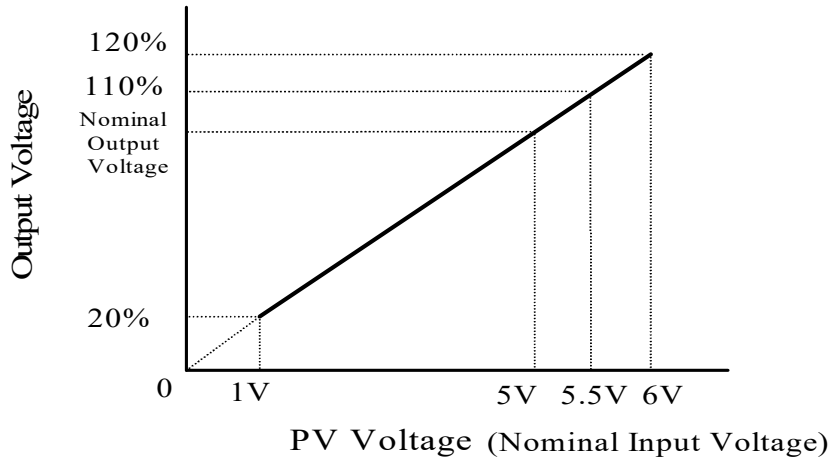
=NOTES=

- \*1. At apply 4.7 - 5.3VDC between "PV" and "COM" terminal.
- \*2. ( ) : Peak output current at 200VAC. Operating time at peak output is less than 10sec, duty is less than 35%.
- \*3. At 100/200VAC, Ta=25°C and maximum output power.
- \*4. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC (50/60Hz).
- \*5. Not applicable for the inrush current to Noise Filter for less than 0.2ms.
- \*6. Output voltage can be changed by adjusting applied voltage at "PV" and "COM" terminal (Refer to A231-01-80/PV- ).
- \*7. Measure with JEITA RC-9131A probe, Bandwidth of scope : 100MHZ.
- \*8. 85 - 265VAC, constant load.
- \*9. No load-Full load, constant input voltage.
- \*10. Constant current limit with automatic recovery.  
Avoid to operate at over load or short circuit condition for more than 30seconds.
- \*11. OVP circuit will shut the output down, manual reset (CNT reset or Re power on).
- \*12. At 100/200VAC, nominal output voltage and maximum output current.
- \*13. Measured by the each measuring method of UL,CSA,EN and DENAN(at 60Hz), Ta=25°C.
- \*14. Ratings - Derating at standard mounting. Refer to output derating curve (A231-01-02\_ ).  
- Load (%) is percent of maximum output power or maximum output current, whichever is greater.
- \*15. As for DENAN, designed to meet at 100VAC.

**HWS300/PV**

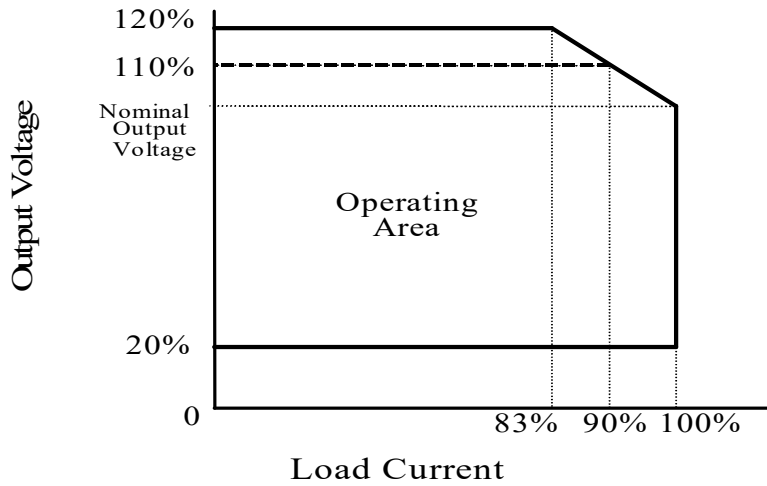
A231-01-80/PV

**Output Voltage - PV Voltage**



\* FOR 48V MODEL ONLY, SPECS BELOW MUST BE FOLLOWED.  
 LIMIT OUTPUT VOLTAGE VARIATION RANGE AT 20% - 110%  
 AT PV VOLTAGE VARIATION 1V-5.5V.

**Output Voltage - Load Current**



\* FOR 48V MODEL ONLY, SPECS BELOW MUST BE FOLLOWED.  
 LIMIT MAXIMUM OUTPUT VOLTAGE TO 110% AT 90% LOAD.  
 LIMIT MAXIMUM OUTPUT VOLTAGE TO NORMAL OUTPUT VOLTAGE AT 100% LOAD.