HWS300/HD

SPECIFICATIONS

A231-01-01/HD-A

	ITEMS / MODEL			HWS300 -3/HD	HWS300 -5/HD	HWS300 -12/HD	HWS300 -15/HD	HWS300 -24/HD	HWS300 -48/HD
1	Nominal Output Voltage		V	3.3	5	12	15	24	48
2	Maximum Output Current (*1)		A	60	60	27	22	14(16.5)	7
3	Maximum Output Power		W	198	300	324	330	336	336
4	Efficiency (Typ) (*2)	100VAC	%	74	79	80	80	82	82
		200VAC	%	77	82	83	83	85	85
5	Input Voltage Range (*3)		-	85 - 265VAC (47 - 63Hz) or 120 - 330VDC					
6	Input Current (100/200VAC)(Typ) (*2		A	2.7/1.4	3.8/1.9	4.1/2.1			
7	Inrush Current(Typ) (*4)		-	20A at 100VAC, 40A at 200VAC					
8	PFHC		-	Designed to meet IEC61000-3-2					
9	Power Factor (100/200VAC)(Typ) (*2		-	0.99/0.95					
10	Output Voltage Range		V	2.64-3.96	4.0-6.0	9.6-14.4	12.0-18.0	19.2-28.8	38.4-52.8
11	Maximum Ripple & Noise	0≤Ta≤71°C	mV	120	120	150	150	150	350
	(*5)	-10≤Ta<0°C	mV	180	180	200	200	200	400
12	Maximum Line Regulation (*6)		mV	20	20	48	60	96	192
13	Maximum Load Regulation (*7)		mV	30	30	72	90	144	288
14	Temperature Coefficient		-	Less than 0.02% / °C					
15	Over Current Protection (*8)		A	63 ≤	63 ≤	28.4 ≤	23.1 ≤	16.7 ≤	7.4 ≤
16	Over Voltage Protection (*9)		V	4.13-4.95	6.25-7.25	15.0-17.4	18.8-21.8	30.0-34.8	55.2-64.8
17	Hold-up Time (Typ) (*10)		-	20ms					
18	Leakage Current (*11)		-	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 (*12,*13)		-	-10 to +71°C (-10 to +50°C:100%,+71°C:50%) Guarantee Start up at -40°C to -10°C					
25	Operating Humidity		-	10 to 90%RH (No dewdrop)					
26	Storage Temperature		-	-40 to +85°C					
27	Storage Humidity		-	10 to 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 (*14)		-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s^2 Constant, X,Y,Z 1hour each. Designed to meet MIL-STD-810F 514.5 Category 4,10					
32	Shock (In package)		-	Less than 196.1m/s^2 Designed to meet MIL-STD-810F 516.5 Procedure I, VI					
33	Safety (*15)		-	Approved by UL60950-1, CSA60950-1, EN60950-1, EN50178 Designed to meet DENAN					
34	Line DIP		-	Designed to meet SEMI-F47 (200VAC Line only)					
35	Conducted Emission		-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B					
36	Radiated Emission		-	Designed to meet EN55011/EN55022-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. ( ):Peak output current at 200VAC.Operaing time at peak output is less than 10sec, duty is less than 35%.
*2. At 100/200VAC, Ta=25°C and maximum output power.
*3. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC(50/60Hz).
*4. Not applicable for the in-rush current to Noise Filter for less than 0.2ms.
*5. Measure with JEITA RC-9131A probe, Bandwidth of scope :100MHz.
*6. 85 - 265VAC , constant load.
*7. No load-Full load, constant input voltage.
*8. 3.3, 5V model: Constant current limit and hiccup with automatic recovery.
12 - 48V model: Constant current limit with automatic recovery.
Avoid to operate at over load or short circuit condition for more than 30seconds.
*9. OVP circuit will shut the output down, manual reset (CNT reset or Re power on).
*10. At 100/200VAC , nominal output voltage and maximum output current.
*11. Measured by the each measuring method of UL,CSA,EN and DENAN(at 60Hz), Ta=25°C.
*12. Ratings - Derating at standard mounting. /Refer to output derating curve.(A231-01-02/HD-_)
- Load (%) is percent of maximum output power or maximum output current, whichever is greater.
*13. For -40°C - -10°C need 3minutes to stabilize the output voltage.
*14. Category 4 exposure levels : Truck transportation over U.S. highways, Composite two-wheeled trailer.
*15. As for DENAN, designed to meet at 100VAC.

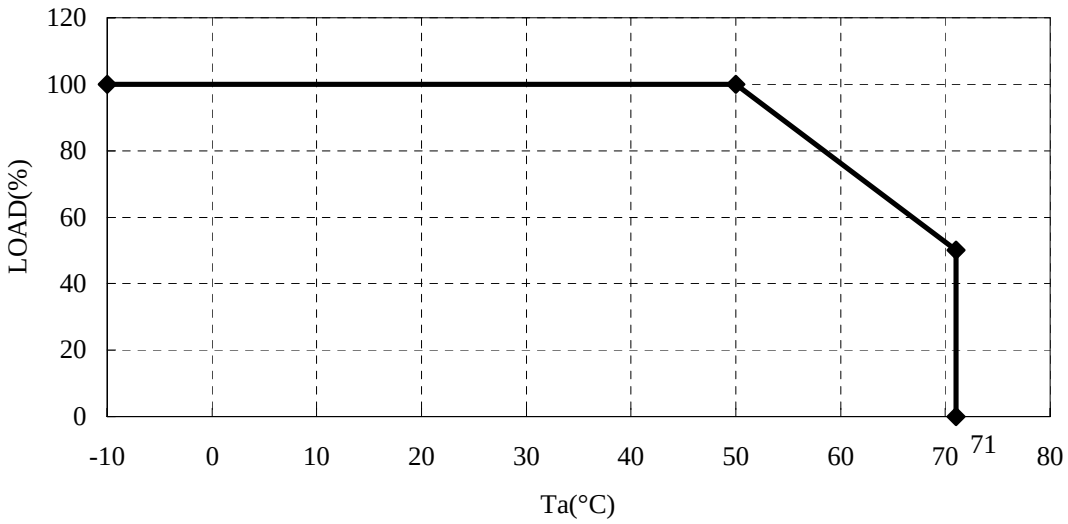
HWS300/HD

OUTPUT DERATING

A231-01-02/HD

Ta(°C)	LOAD(%)	
	MOUNTING A	MOUNTING B
-10 to +50	100	
71	50	

OUTPUT DERATING CURVE



MOUNTING A
(STANDARD MOUNTING)

MOUNTING B

DON'T USE