

## SPECIFICATIONS

DA032-01-01

MODEL		HWS1000	HWS1000	HWS1000	HWS1000	HWS1000	HWS1000	HWS1000	HWS1000	HWS1000	HWS1000		
ITEMS		-3	-5	-6	-7	-12	-15	-24	-36	-48	-60		
1	Nominal Output Voltage	V	3.3	5	6	7.5	12	15	24	36	48	60	
2	Maximum Output Current	A	200	200	167	134	88	70	46	30.7	23	18.4	
3	Peak output Current (*13)	at 200VAC	A	-	-	160	100	80	58.5	39	29.2	23.4	
4	Maximum Output Power	W	660	1000	1002	1005	1056	1050	1104	1104	1104	1104	
5	Peak Output Power (*13)	at 200VAC	W	-	-	1200	1200	1200	1404	1404	1404	1404	
6	Efficiency (Typ) (*1)	at 100VAC	%	71	76	79	80	82	85	85	86	85	
		at 200VAC	%	73	78	81	82	85	85	87	88	88	
7	Input Voltage Range (*2)	-	85 ~ 265VAC (47 ~ 63Hz) or 120 ~ 330VDC										
8	Input Current (100/200VAC)(Typ) (*1)	A	9.6/5.0	13.5/7.0									
9	Inrush Current (100/200VAC)(Typ) (*3)	A	20/40										
10	PFHC	-	Built to meet IEC61000-3-2										
11	Power Factor (100/200VAC)(Typ) (*1)	-	0.98/0.95										
12	Output Voltage Range	V	2.64~3.96	4.0~6.0	4.8~7.2	6.0~9.0	9.6~14.4	12.0~18.0	19.2~28.8	28.8~43.2	38.4~52.8	48.0~66.0	
13	Maximum Ripple & Noise (*4)	0 ~ +71°C	mV	120	120	150	150	150	150	150	200	200	400
		-10 ~ 0°C	mV	160	160	180	180	180	180	180	240	500	600
14	Maximum Line Regulation (*5)	mV	20	20	36	36	48	60	96	144	192	240	
15	Maximum Load Regulation (*6)	mV	40	40	60	60	100	120	150	150	300	360	
16	Temperature Coefficient	-	Less than 0.02%/°C										
17	Over Current Protection (*7)	-	105%~(Maximum output current)			105%~(Peak output current)							
18	Over Voltage Protection (*8)	V	4.12~4.62	6.25~7.0	7.5~8.4	9.37~10.5	15.0~17.4	18.7~21.8	30.0~34.8	45.0~49.7	55.2~60.0	69.0~75.0	
19	Hold-up Time (Typ) (*9)	-	20ms										
20	Leakage Current (*10)	-	1.2mA MAX at 100VAC / 240VAC										
21	Remote Sensing	-	Possible										
22	Remote ON/OFF control	-	Possible										
23	Monitoring Signal	-	PF(Open Collector Output)										
24	Output Voltage External Control	-	Possible										
25	Parallel Operation	-	Possible										
26	Series Operation	-	Possible										
27	Operating Temperature (*11)	-	-10 ~ +71, Start up -20 ~ +71°C										
		-10 ~ +40°C	%	100									
		+50°C	%	83.9			100						
		+71°C	%	50			50						
28	Operating Humidity	-	10 ~ 90%RH (No dewdrop)										
29	Storage Temperature	-	-30 ~ +85°C										
30	Storage Humidity	-	10 ~ 95%RH (No dewdrop)										
31	Cooling	-	Forced Air By Blower Fan										
32	Withstand Voltage	-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output-FG : 500VAC (300mA), (60V model 651VAC(390mA)), Output-CNT:100VAC (100mA) for 1min.										
33	Isolation Resistance	-	More than 100Mohm Output - FG ... 500VDC More than 10Mohm Output - CNT ... 100VDC at 25°C and 70%RH										
34	Vibration	-	At no operating, 10 ~ 55Hz (Sweep for 1min.) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1h each.										
35	Shock (In package)	-	Less than 196.1m/s <sup>2</sup>										
36	Safety (*12)	-	Built to meet UL60950-1, CSA60950-1, EN60950-1,EN50178. Built to meet DENAN.										
37	Line DIP	-	Built to meet SEMI-F47 (200VAC Line only)										
38	Conducted Emission	-	Built to meet EN55011/EN55022-B, FCC-ClassB, VCCI-ClassB, CISPR-ClassB.										
39	Radiated Emission	-	Built to meet EN55011/EN55022-B, FCC-ClassB, VCCI-ClassB, CISPR-ClassB.										
40	Immunity	-	Built 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										
41	Weight	g	MAX.3200										
42	Size (W x H x D)	mm	126.5 x 82 x 240 ( Refer to Outline Drawing )										

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

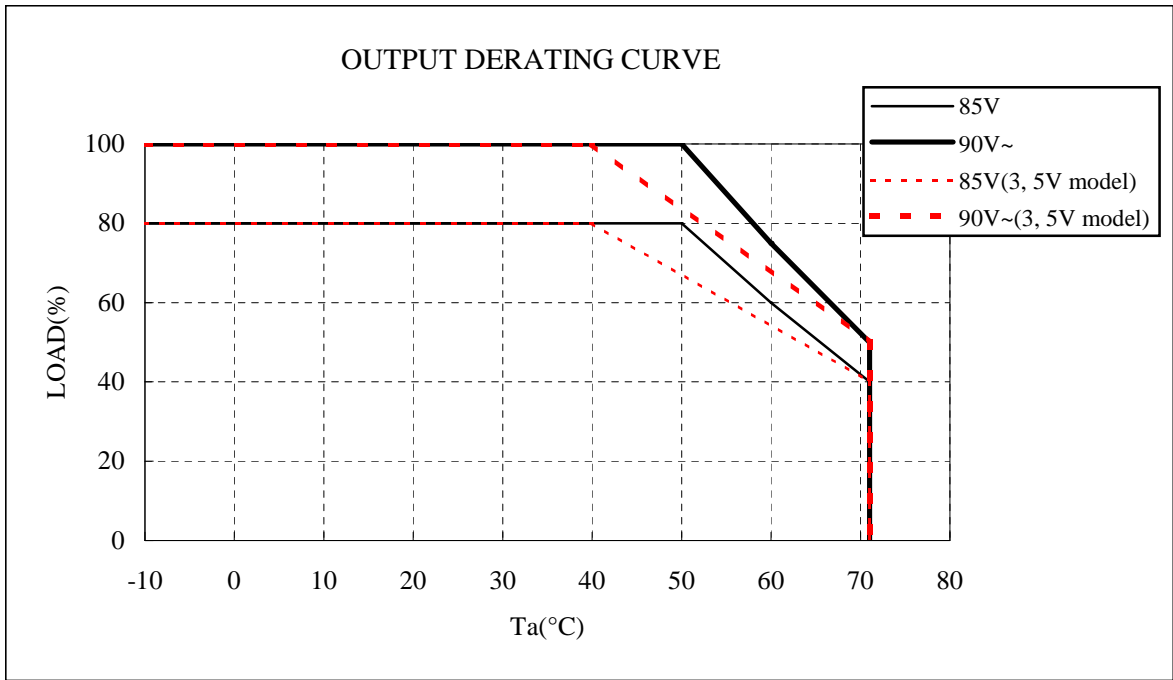
=NOTES=

- \*1. At Ta=25°C and maximum output power.
- \*2. For cases where conformance to various safety specs (UL, CSA, EN) are required, input voltage range will be 100 ~ 240VAC(50/60Hz).
- \*3. First in-rush current. Not applicable for the in-rush current to Noise Filter less than 0.2ms.
- \*4. Measure with JEITA RC-9131A probe, Bandwidth of scope :100MHz.  
(at 100uF electric capacitor and 0.47uF film capacitor on the test fixture board.)
- \*5. 85 ~ 265VAC , constant load.
- \*6. No load-Full load, constant input voltage.
- \*7. Constant current limit with automatic recovery. An output will be intercepted if it continues for about 5 seconds.
- \*8. OVP circuit will shut down output, manual reset (Power cycle) or ON/OFF CNT signal reset.
- \*9. At 100/200VAC, nominal output voltage and maximum output current.
- \*10. Measured by the each measuring method of UL, CSA, EN and DENAN (at 60Hz), Ta=25°C.
- \*11. Ratings - Derating at standard mounting.  
- Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
- As for other mountings, refer to derating curve ( DA032-01-02\_ ).
- \*12. As for DENAN, built to meet at 100VAC.
- \*13. Peak output current is less than 10 seconds, and duty 35% max. (200VAC Line only)

OUTPUT DERATING

DA032-01-02

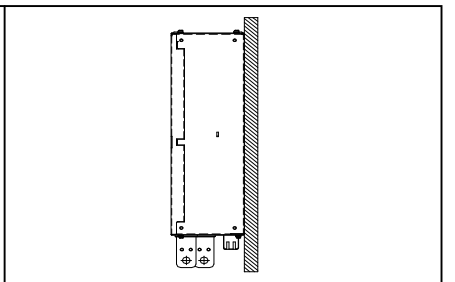
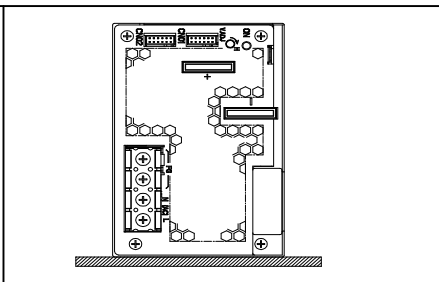
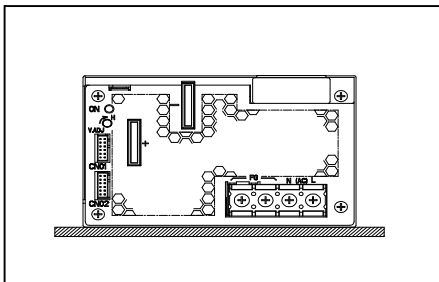
3, 5V Ta(°C)	6-60V Ta(°C)	LOAD(%)	
		MOUNTING A,B,C,D	
-10 ~+40	-10 ~+50	85V 80	90V~ 100
71	71	40	50



MOUNTING A  
(STANDARD MOUNTING)

MOUNTING B

MOUNTING C



MOUNTING D

Inhibit

