HWS1000

SPECIFICATIONS

DA032-01-01E

	ITEMS \ MODEL			HWS1000 -3	HWS1000 -5	HWS1000 -6	HWS1000 -7	HWS1000 -12	HWS1000 -15	HWS1000 -24	HWS1000 -36	HWS1000 -48	HWS1000 -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	83	85	85	86	85
		at 200VAC	%	73	78	81	82	85	85	87	88	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		-	Designed 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°C, 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 Condensing)									
29	Storage Temperature		-	-30 - +85°C									
30	Storage Humidity		-	10 - 95%RH (No Condensing)									
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^2 Constant, X,Y,Z 1h each.									
35	Shock (In package)		-	Less than 196.1m/s^2									
36	Safety (*12)		-	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.									
37	Line DIP		-	Designed to meet SEMI-F47 (200VAC Line only)									
38	Conducted Emission		-	Designed to meet EN55011/EN55032-B, FCC-ClassB, VCCI-ClassB, CISPR-ClassB.									
39	Radiated Emission		-	Designed to meet EN55011/EN55032-B, FCC-ClassB, VCCI-ClassB, CISPR-ClassB.									
40	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									
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 to the first 0.2ms in-rush current flowing into the power supply noise filter.

*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. Over current condition for more than 5 seconds will cause the output to shutdown. Output current exceeding maximum rated output current for more than 10seconds continuously will result to output shutdown. For peak current capable model, over current protection triggers at 105% of maximum output current or more with 100VAC input line.

*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, designed to meet at 100VAC.

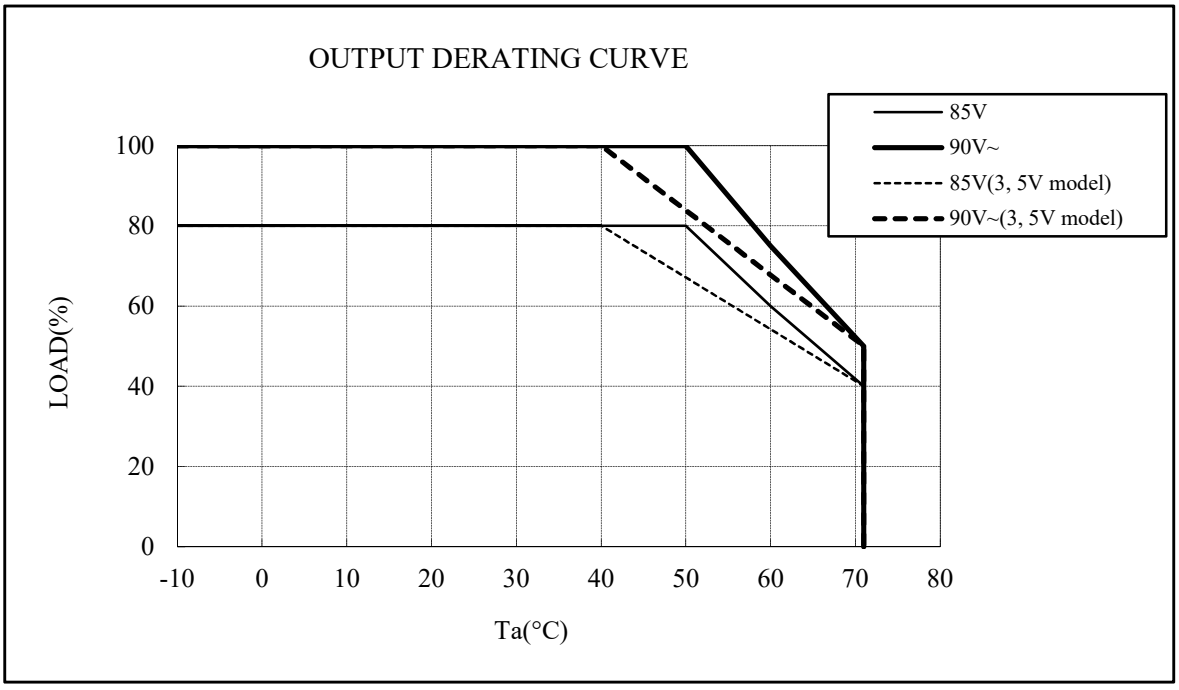
*13. Peak output current is less than 10 seconds, and duty 35% max. (200VAC Line only)

HWS1000

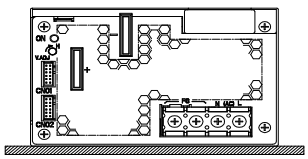
OUTPUT DERATING

DA032-01-02A

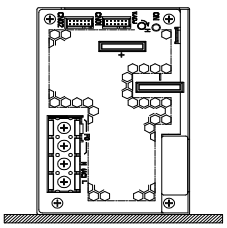
3, 5V	6-60V	LOAD(%)	
Ta(°C)	Ta(°C)	MOUNTING A,B,C,D,G,H	
		85V	90V~
-10 ~+40	-10 ~+50	80	100
71	71	40	50



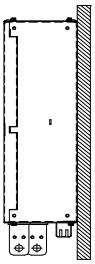
MOUNTING A
(STANDARD MOUNTING)



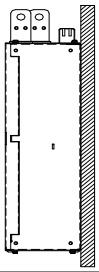
MOUNTING B



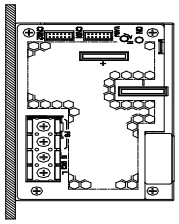
MOUNTING C



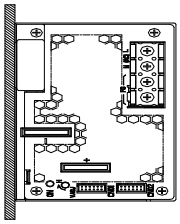
MOUNTING D



MOUNTING G



MOUNTING H



Inhibit