

**HWS30/ME**

## SPECIFICATIONS

A225-01-01/ME

ITEMS		MODEL	HWS30 -5/ME	HWS30 -12/ME	HWS30 -15/ME	HWS30 -24/ME	HWS30 -48/ME	
1	Nominal Output Voltage	V	5	12	15	24	48	
2	Maximum Output Current	A	6	2.5	2	1.3	0.65	
3	Maximum Output Power	W	30	30	30	31.2	31.2	
4	Efficiency (Typ) (*1)	100VAC	%	77	81	81	83	82
		200VAC	%	80	83	83	86	83
5	Input Voltage Range (*2)	-	85 - 265VAC (47 - 63Hz) or 120 - 370VDC					
6	Input Current (100/200VAC)(Typ) (*1)	A	0.8/0.4					
7	Inrush Current(Typ) (*3)	-	14A at 100VAC, 28A at 200VAC, Ta=25°C, Cold Start					
8	PFHC	-	Designed to meet IEC61000-3-2					
9	Voltage Fluctuations / Flicker Emissions	-	Designed to meet IEC61000-3-3					
10	Output Voltage Range	V	4.0 - 6.0	9.6 - 14.4	12.0 - 18.0	19.2 - 28.8	38.4 - 52.8	
11	Maximum Ripple & Noise (*4)	0≤Ta≤70°C	mV	120	150	150	200	200
		-10≤Ta<0°C	mV	160	180	180	240	240
12	Maximum Line Regulation (*5)	mV	20	48	60	96	192	
13	Maximum Load Regulation (*6)	mV	40	96	120	192	384	
14	Temperature Coefficient	-	Less than 0.02% / °C					
15	Over Current Protection (*7)	A	6.3 ≤	2.62 ≤	2.1 ≤	1.36 ≤	0.68 ≤	
16	Over Voltage Protection (*8)	V	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) (*9)	-	20ms					
18	Leakage Current (*10)	-	Less than 0.5mA. 0.2mA(Typ) at 100VAC / 0.4mA(Typ) at 230VAC					
19	Remote Sensing	-	-					
20	Parallel Operation	-	-					
21	Series Operation	-	Possible					
22	Operating Temperature (*11)	-	-10 to +70°C (-10 to +50°C:100%,+60°C:60%,+70°C:20%)					
23	Operating Humidity	-	30 to 90%RH (No dewdrop)					
24	Storage Temperature	-	-30 to +85°C					
25	Storage Humidity	-	10 to 95%RH (No dewdrop)					
26	Cooling	-	Convection cooling					
27	Withstand Voltage	-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (100mA) for 1min					
28	Isolation Resistance	-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC					
29	Vibration	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.					
30	Shock (In package)	-	Less than 196.1m/s <sup>2</sup>					
31	Safety (*12)	-	Approved by UL60601-1, EN60601-1, CSA-C22.2 No.601.1-M90					
32	Line DIP	-	Designed to meet SEMI-F47 (200VAC Line only)					
33	Conducted Emission	-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B					
34	Radiated Emission	-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B					
35	Immunity	-	Designed to meet IEC61000-4-2(Level 3), -3(Level 3), -4(Level 3), -5(Level 3,4), -6(Level 3), -8(Level 4), -11					
36	Weight(Typ.)	-	220g					
37	Size (W x H x D)	mm	26.5 x 82 x 95 ( Refer to Outline Drawing )					

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

=NOTES=

- \*1. At 100/200VAC, Ta=25°C and maximum output power.
- \*2. For cases where conformance to various safety specs (UL, EN, CSA) are required, to be described as 100 - 230VAC(50/60Hz).
- \*3. Not applicable for the in-rush current to Noise Filter for less than 0.2ms.
- \*4. Measure with JEITA RC-9131A probe, Bandwidth of scope :100MHz.  
For start up at low ambient temperature and low input voltage, output ripple noise might not meet specification.  
However, there is no overshoot at start up and output ripple noise specification can be met after one second.
- \*5. 85 - 265VAC , constant load.
- \*6. No load-Full load, constant input voltage.
- \*7. Foldback current limit with automatic recovery. Not operate at over load or dead short condition for more than 30seconds.
- \*8. OVP circuit will shutdown output, manual reset (Re power on).
- \*9. At 100/200VAC , nominal output voltage and maximum output current.
- \*10. Measured by the each measuring method of UL, EN and CSA(at 60Hz).  
When using it as a patient care equipment, all outer surfaces of the equipment shall be constructed of nonconductive material. See clause 19.5DV.2 of UL60601-1.
- \*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 (A225-01-02\_).
- \*12. As for UL60601-1, EN60601-1 and CSA-C22.2 No.601.1-M90, basic insulation.