

**HWS100A/EHA**

SPECIFICATIONS (1/2)

A287-01-01/EHA

ITEMS	MODEL	HWS100A -12/EHA	HWS100A -15/EHA	HWS100A -24/EHA	HWS100A -48/EHA
<b>INPUT</b>					
Input Voltage Range	(*)(*3)	-	85 - 265VAC (47 - 63Hz) or 120 - 370VDC		
Efficiency(Typ.)	(*)100/200VAC	%	86 / 88	86 / 88	87 / 89
Input Current(Typ.)	(*)100/200VAC	A	1.3 / 0.65		
Inrush Current (Typ.)	(*)(*4)100/200VAC	A	14 / 28 (Cold Start)		
Power Factor (Typ.)	(*)100/200VAC	-	0.98 / 0.93		
<b>OUTPUT</b>					
Nominal Output Voltage		V	12	15	24
Output Voltage Initial set Accuracy	(*)13	-	±1%		
Maximum Output Current		A	8.5	7	4.5
Maximum Output Power		W	102	105	108
Maximum Line Regulation	(*)6	mV	48	60	96
Maximum Load Regulation	(*)7	mV	96	120	150
Temperature Coefficient		-	Less than 0.02% / °C		
Maximum Ripple & Noise	(*)5	0<Ta<70°C	mV	150	150
		-10<Ta<0°C	mV	180	180
Output Voltage Range		V	9.6 - 14.4	12.0 - 18.0	19.2 - 28.8
Hold-up Time (Typ.)	(*)1	ms	20		
Leakage Current	(*)10	-	Less than 0.5mA. 0.2mA (Typ) at 100VAC / 0.4mA (Typ) at 230VAC		
Over Current Protection	(*)8	A	8.92 ≤	7.35 ≤	4.72 ≤
Over Voltage Protection	(*)9	V	15.0 - 17.4	18.8 - 21.8	30.0 - 34.8
<b>FUNCTION</b>					
Remote ON/OFF Control		-	-		
Remote Sensing		-	-		
Parallel Operation		-	-		
Series Operation		-	Possible		
<b>ENVIRONMENT</b>					
Operating Temperature	(*)11	-	-10 to +70°C (-10 to +50°C:100%, +60°C:60%, +70°C:20%)		
Storage Temperature		-	-30 to +85°C		
Operating Humidity		-	30 to 90%RH (No Condensing)		
Storage Humidity		-	10 to 95%RH (No Condensing)		
Vibration	(*)12	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.		
Shock	(*)12	-	Less than 196.1m/s <sup>2</sup>		
Cooling		-	Convection Cooling		
<b>ISOLATION</b>					
Withstand Voltage		-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (20mA) for 1min		
Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC		
<b>STANDARD AND COMPLIANCE</b>					
Safety		-	Approved by IEC/UL/CSA/EN62368-1 (Altitude ≤ 4,000m) Approved by IEC/EN62477-1 (OVCI) (Altitude ≤ 2,000m) Approved by UL508, CSA C22.2 No.107.1-01. Designed to meet Den-an Appendix 8 at 100VAC (creepage distance and clearance only)		
Conducted Emission	(*)12	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B		
Radiated Emission	(*)12	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B		
Harmonic Current		-	Designed to meet IEC61000-3-2		
Immunity	(*)12	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11		
Line DIP		-	Designed to meet SEMI-F47 (200VAC Line only)		
<b>MECHANICAL</b>					
Weight (Typ.)		g	470		
Size (W x H x D)		mm	33.5 x 83 x 176		

## SPECIFICATIONS (2/2)

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

=NOTES=

- \*1. At 100VAC/200VAC, Ta=25°C, nominal output voltage and maximum output power.
- \*2. For cases where conformance is required to meet various safety specs (UL, CSA, EN), Input voltage range shall be from 100 - 240VAC (50-60Hz).
- \*3. Output derating needed when input voltage less than 90VAC. Refer to OUTPUT DERATING CURVE (A287-01-02/EHA-  ).
- \*4. Not applicable for the inrush current to Noise Filter for less than 0.2ms.
- \*5. Refer to instruction manual (A286-04-01  ) for measurement of ripple voltage.
- \*6. 85 - 265VAC, constant load.
- \*7. No load-Full load, constant input voltage.
- \*8. Constant current limit and Hiccup with automatic recovery.  
Avoid to operate at over load or short circuit condition.
- \*9. OVP circuit will shut down output, manual reset (Re power on).
- \*10. Measured by the each measuring method of UL, CSA, EN and Den-an (at 60Hz), Ta=25°C.
- \*11. Output Derating
  - Derating at standard mounting. Refer to OUTPUT DERATING CURVE (A287-01-02/EHA-  ).
  - Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.
- \*12. The result is evaluated by TDK-Lambda standard measurement condition.  
The power supply is considered a component which will be installed into a final equipment.  
The final equipment should be re-evaluated that it meets EMC, Vibration and Shock directives.
- \*13. Output voltage setting at the time of shipment. At 100VAC, nominal output voltage and maximum output current.

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OUTPUT DERATING

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Ta (°C)	LOAD (%)			
	MOUNTING A	MOUNTING B	MOUNTING C	MOUNTING D
-10 - +30	100	100	100	100
35	100	100	92	100
50	100	65	65	65
60	60	37	37	42
70	20	10	10	20

\*Refer to dotted line for output derating curve, when input voltage range is "85≤Vin<90" for the MOUNTING A.

