

DENSEI-LAMBDA**HWS150/A****SPECIFICATIONS**

A228-01-01/A-C

MODEL			HWS150 -3/A	HWS150 -5/A	HWS150 -12/A	HWS150 -15/A	HWS150 -24/A	HWS150 -48/A	
ITEMS									
1	Nominal Output Voltage		V	3.3	5	12	15	24	48
2	Maximum Output Current		A	30	30	13	10	6.5	3.3
3	Maximum Output Power		W	99	150	156	150	156	158.4
4	Efficiency (Typ) (*1)	100VAC	%	78	83	83	83	85	85
		200VAC	%	81	86	86	86	88	88
5	Input Voltage Range (*2)		-	85 ~ 265VAC (47 ~ 63Hz) or 120 ~ 370VDC					
6	Input Current (100/200VAC)(Typ) (*1)		A	1.3/0.65	1.9/0.95				
7	Inrush Current(Typ) (*3)		-	14A at 100VAC, 28A at 200VAC, Ta=25°C, Cold Start					
8	PFHC		-	Built to meet IEC61000-3-2					
9	Power Factor (100/200VAC)(Typ) (*1)		-	0.98/0.90	0.99/0.95				
10	Output Voltage Range		V	2.97~3.96	4.0~6.0	9.6~14.4	12.0~18.0	19.2~28.8	38.4~52.8
11	Maximum Ripple & Noise (*4)	0≤Ta≤60°C	mV	120	120	150	150	150	200
		-10≤Ta<0°C	mV	160	160	180	180	180	240
12	Maximum Line Regulation (*5)		mV	20	20	48	60	96	192
13	Maximum Load Regulation (*6)		mV	40	40	96	120	192	384
14	Temperature Coefficient		-	Less than 0.02% / °C					
15	Over Current Protection (*7)		A	31.5 ~	31.5 ~	13.6 ~	10.5 ~	6.82 ~	3.46 ~
16	Over Voltage Protection (*8)		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) (*9)		-	20ms					
18	Leakage Current (*10)		-	Less than 0.5mA. 0.2mA(Typ) at 100VAC / 0.4mA(Typ) at 230VAC					
19	Remote Sensing		-	Possible					
20	Parallel Operation		-	-					
21	Series Operation		-	Possible					
22	Operating Temperature (*11)		-	-10 ~+60°C (-10 ~+40°C:100%,+50°C:60%,+60°C:20%)					
23	Operating Humidity		-	30 ~ 90%RH (No dewdrop)					
24	Storage Temperature		-	-30 ~ +85°C					
25	Storage Humidity		-	10 ~ 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/s² Constant, X,Y,Z 1hour each.					
30	Shock (In package)		-	Less than 196.1m/s²					
31	Safety (*12)		-	Approved by UL60950-1, CSA60950-1, EN60950-1, EN50178 Built to meet UL508, DENAN					
32	Line DIP		-	Built to meet SEMI-F47 (200VAC Line only)					
33	Conducted Emission		-	Built to meet EN55011/EN55022-B, FCC-B, VCCI-B					
34	Radiated Emission		-	Built to meet EN55011/EN55022-B, FCC-B, VCCI-B					
35	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					
36	Weight(Typ.)		-	550g					
37	Size (W x H x D)		mm	42 x 82 x 160 (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, CSA, EN) are required, to be described as 100 ~ 240VAC(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.

*5. 85 ~ 265VAC , constant load.

*6. No load-Full load, constant input voltage.

*7. Constant current limit and Hiccup 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,CSA,EN and DENAN(at 60Hz).

*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 (A228-01-02/A_).

*12. As for DENAN, built to meet at 100VAC.

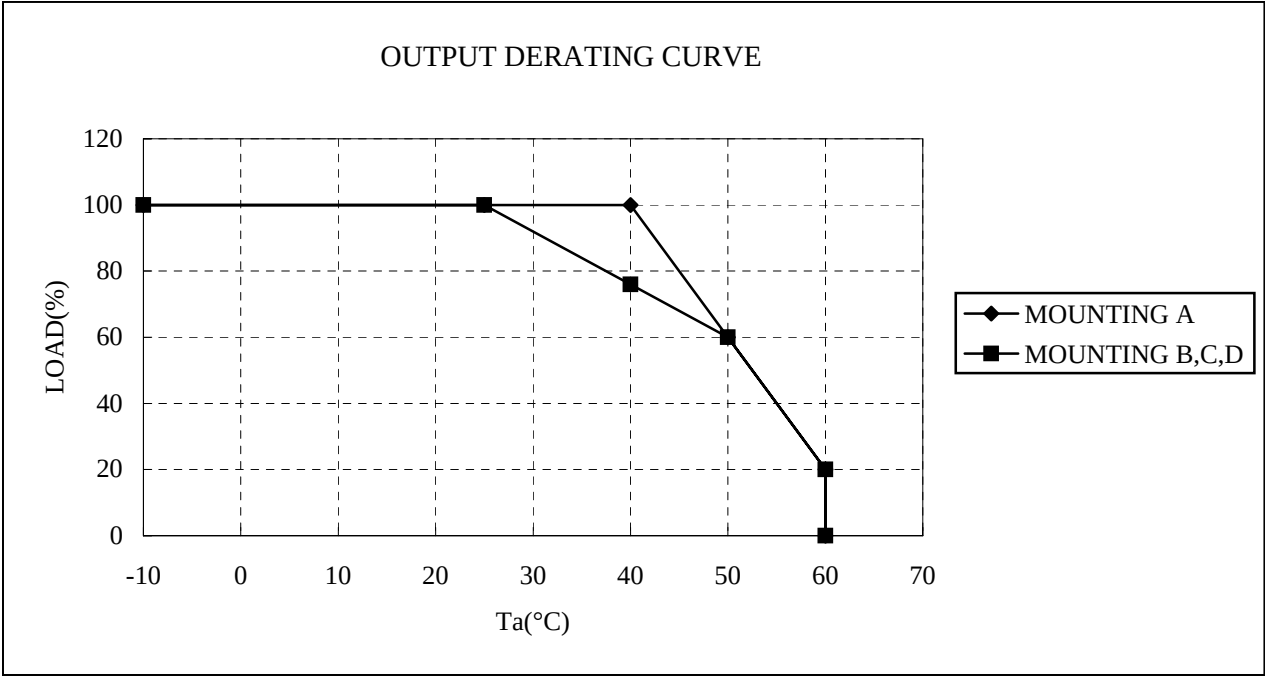
HWS150/A

DENSEI-LAMBDA

OUTPUT DERATING

A228-01-02/A

Ta(°C)	LOAD(%)	
	MOUNTING A	MOUNTING B,C,D
-10 ~+25	100	100
40	100	76
50	60	60
60	20	20



MOUNTING A
(STANDARD MOUNTING)

MOUNTING B

MOUNTING C

MOUNTING D

DON'T USE