

**HWS1000L/BAT**

CA772-01-01/BAT-D

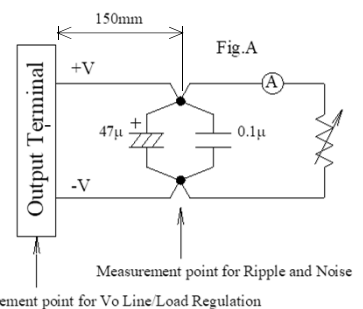
**SPECIFICATIONS**

MODEL		HWS1000L-36 /BAT	HWS1000L-60/BAT	
1	Nominal Output Voltage	V	36	
2	Maximum Output Current (*1)	A	29	
3	Maximum Output Power (*1)	W	1044	
4	Efficiency (Typ)(115/230VAC) (*2)	%	84 / 86	
5	Input Voltage Range (*3)	-	85 - 265VAC (47-63Hz) or 120 - 350VDC	
6	Input Current (Typ)(115/230VAC) (*2)	A	12 / 6	
7	Inrush Current (Typ) (*4)	-	20A/40A at 115VAC, 40A/40A at 230VAC, Ta=25°C (first inrush/second inrush)	
8	PFHC	-	Designed to meet IEC61000-3-2	
9	Power Factor (Typ) (*2)	-	0.98 / 0.95	
10	Output Voltage Range	V	28.0-36.0	
11	Ripple and Noise (115/230VAC) (*5)	0≤Ta<74°C	mV	200
		-20≤Ta<0°C	mV	240
12	Line Regulation (*6,7)	mV	144	
13	Load Regulation (*6,8)	mV	216	
14	Temperature Coefficient	-	Less than 0.02%/°C	
15	Output Constant Current Limit Range (Preset CC Value at shipping) (*9)	A	15.9 - 27.6 (24.7 - 27.6)	
16	Constant Current Setting accuracy (*9)	-	±10%	
17	Over Voltage Protection (*10)	V	45.0-52.2	
18	Hold-Up Time (Typ)(115/230VAC) (*2)	-	20ms	
19	Leakage current (Typ) (*11)	-	0.1mA at 115VAC, 60Hz / 0.2mA at 230VAC, 60Hz	
20	Remote Sensing	-	Possible	
21	Remote ON/OFF control	-	Possible	
22	Monitoring Signal	-	ALM ( Open Collector Output )	
23	Parallel Operation	-	Possible	
24	Series Operation	-	Possible	
25	Operating Temperature (*12)	-	- 20 to + 74 °C (-20°C to +50°C: 100%, +74°C: 50%) 100% load start up at -40°C	
26	Operating Humidity	-	20 to 90 %RH (No dewdrop)	
27	Storage Temperature	-	- 40 to +85°C	
28	Storage Humidity	-	10 to 95%RH (No dewdrop)	
29	Cooling	-	Forced air by build-in fan	
30	Withstand Voltage	-	Input - Output : 4.0kVAC (20mA), Input - FG : 2.0kVAC (20mA) Output - FG : 500VAC (100mA) (60V model: 651VAC(130mA)), Output - CNT/ALM/AUX : 100VAC (100mA) for 1min.	
31	Isolation Resistance	-	Input - FG, Input - Output and Output - FG: More than 50MΩ (500VDC) Output - CNT/ALM/AUX: More than 50MΩ (100VDC) at Ta=25°C and 70%RH	
32	Vibration (*13)	-	Designed to meet MIL-STD-810F 514.5 Category 4, 10	
33	Shock (In package)	-	Designed to meet MIL-STD-810F 516.5 Procedure I,VI	
34	Safety (*14)	-	Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1 (Expire date of 60950-1 : 20/12/2020), EN50178, UL60601-1, EN60601-1, CSA-C22.2 No.601.1-M90. Designed to meet Den-an, EN61010-1.	
35	Line Dip	-	Designed to meet SEMI-F47 (200VAC line only)	
36	EMI	-	Designed to meet VCCI-A, FCC-A, EN55011/EN55032-A	
37	Immunity	-	Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 3,4), -6 (Level 3), -8 (Level 4), -11	
38	Weight (Typ)	-	2.3kg	
39	Dimension (W x H x D)	mm	150 x 61 x 240 (Refer to Outline Drawing)	

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

= NOTES=

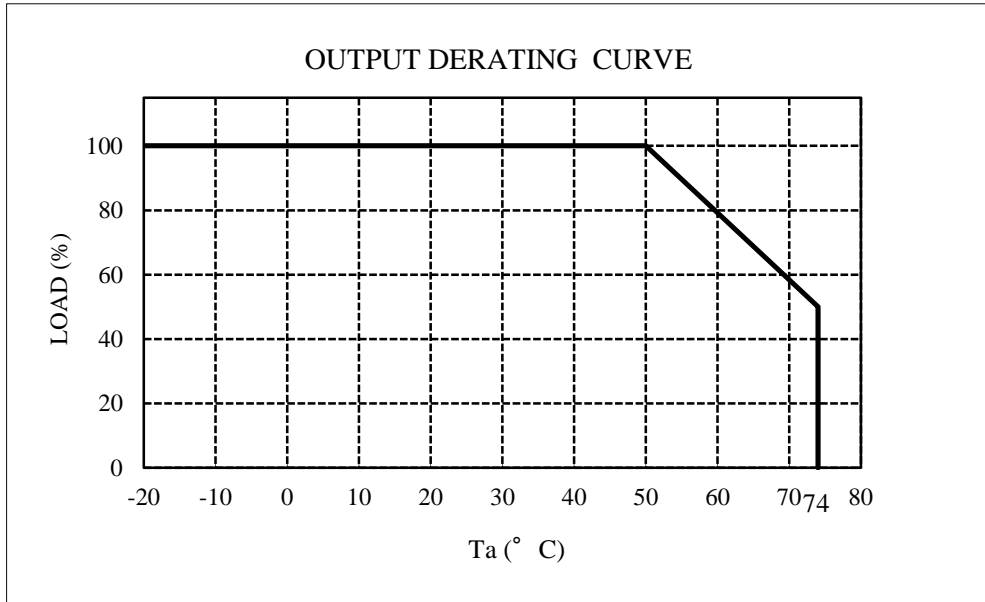
- \*1. Maximum Output Power and Maximum Output Current have tolerance +0%/-5%. (36V; 993.6W- 1044W/27.6A - 29A , 60V; 972W - 1020W/16.2A - 17A)
- \*2. At Maximum Output Power, nominal input voltage, Ta = 25°C.
- \*3. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100-240VAC, 50/60Hz on name plate.
- \*4. First/second inrush current, not applicable for the in-rush current to Noise Filter for less than 0.2ms.
- \*5. Please refer to Fig A for measurement point of ripple and noise.  
Ripple & noise are measured at 20MHz by using a twisted pair of load wires terminated with a 0.1uF and 47uF capacitor.
- \*6. Measure line & load regulation at output terminal M4 tapped point.
- \*7. 85 - 265VAC, constant load, NL -90% Load of Maximum power (at Preset CC Value of shipping)
- \*8. No load - 90% Load of Maximum power (at preset CC Value of shipping), constant input voltage.
- \*9. Constant current limit with automatic recovery. Min. Voltage is 18V (Vo:36V) or 30V (Vo:60V).  
Avoid to operate at Constant Current condition that output voltage is less than 18V (Vo:36V) or 30V (Vo:60V)
- \*10. OVP circuit will shutdown output, manual reset (Remote ON/OFF control reset or Re-power on).
- \*11. Measured by each measuring method of UL, CSA, EN and Den-an (at 60Hz), Ta=25°C.  
Worst case: < 0.3mA at 264VAC, 63Hz (Normal Condition); < 0.5mA (Single Fault Condition)
- \*12. Refer to Output Derating Curve (CA772-01-02/BAT-\_) for details of output derating versus ambient temperature.  
- Load (%) is percent of Maximum Output Power and Maximum Output Current (Item 2 and 3).  
Do not exceed derating of Maximum Output Power and Maximum Output Current.  
- 100% load start up at -40°C is possible. However, it may not fulfil all the specifications.
- \*13. Category 4 exposure levels: Trunk transportation over U.S. highways, Composite two-wheeled trailer.
- \*14. As for Den-an, designed to meet at 100VAC.



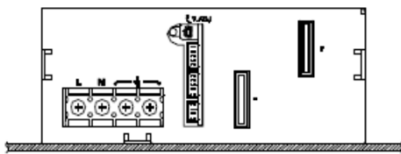
OUTPUT DERATING

CA772-01-02/BAT

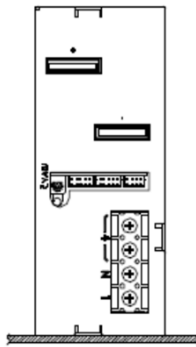
Ta (°C)	LOAD(%)
	Mounting A,B,C
-20 to 50	100%
74	50%



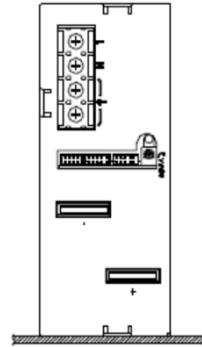
**Mounting**



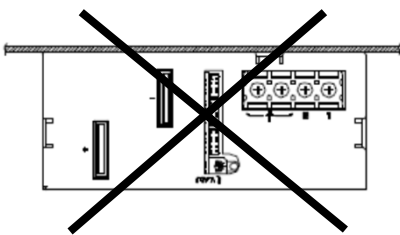
**Mounting B**



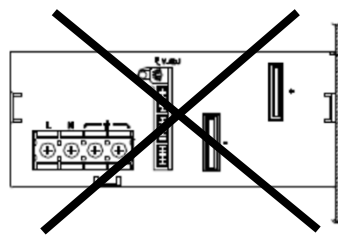
**Mounting**



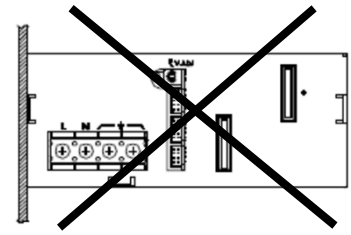
**Don't Use**



**Don't Use**



**Don't Use**



**HWS1000L/BAT**

CA772-01-03/BAT-A

Output Constant Current Limit Range

PRESET : Std Setting of Current Limit at shipping

MIN. : Available Setting of Minimum Current Limit

MAX. : Available Setting of Maximum Current Limit

\*These Current limit Curve are the Images. Refer to the evaluation data of Current Limit Curve.

