

**ZWS10B**

SPECIFICATIONS

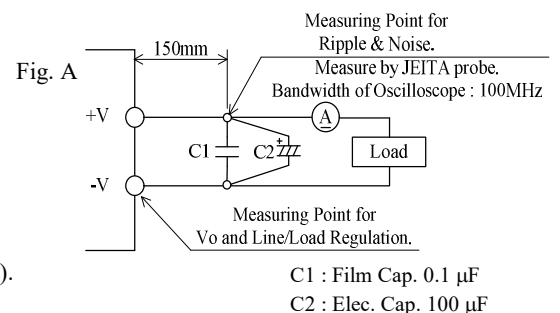
CA790-01-01B

ITEMS		MODEL	ZWS10B -3	ZWS10B -5	ZWS10B -12	ZWS10B -15	ZWS10B -24
1	Nominal Output Voltage	V	3.3	5	12	15	24
2	Maximum Output Current	A	2.0	2.0	0.9	0.7	0.5
3	Maximum Output Power	W	6.6	10.0	10.8	10.5	12.0
4	Efficiency (Typ) (*1)	100VAC	% 70	% 77	% 82	% 83	% 84
		200VAC	% 70	% 78	% 83	% 84	% 85
5	Input Voltage Range (*2)(*12)	-	85- 265VAC( 47-63Hz) or 120- 370VDC				
6	Input Current (Typ) (*1)	A	0.18 / 0.11		0.25 / 0.13		
7	Inrush Current (Typ) (*1)(*3)	-	15A at 100VAC,30A at 200VAC,Ta=25°C,Cold Start				
8	Output Voltage Range	V	2.97 -3.63	4.5 - 5.5	10.8 - 13.2	13.5 - 16.5	21.6 - 26.4
9	Maximum Ripple & Noise (*4)(*5)	0≤Ta<70°C, 35-100% Load	mV 120	mV 120	mV 150	mV 150	mV 150
		-10≤Ta<0°C, 35-100% Load	mV 160	mV 160	mV 180	mV 180	mV 180
		-10<Ta<70°C, 0~35% Load	mV 200	mV 200	mV 240	mV 240	mV 240
10	Maximum Line Regulation (*4)(*6)	mV	20	20	48	60	96
11	Maximum Load Regulation (*4)(*7)	mV	40	40	96	120	150
12	No Load Power Consumption	-	Typical 0.2W at 100VAC/200VAC, 0.5W Max				
13	Temperature Coefficient (*4)	-	Less than 0.02% / °C				
14	Over Current Protection (*8)	A	2.1 -	2.1 -	0.95 -	0.74 -	0.53 -
15	Over Voltage Protection (*9)	V	4.00 - 5.25	5.75 - 7.00	13.8 - 16.2	17.3 - 20.3	27.6 - 32.4
16	Hold-up Time (Typ) (*1)	-	20ms				
17	Leakage Current (*10)	-	0.15/0.30mA Max. (100VAC / 230VAC 60Hz)				
18	Remote Control	-	-				
19	Parallel Operation	-	-				
20	Series Operation	-	Possible				
21	Operating Temperature (*11)	-	Convection : -10 +70°C (-10 +50°C:100%, +60°C:70%, +70°C:20%)				
22	Operating Humidity	-	30 - 90%RH (No Condensing)				
23	Storage Temperature	-	-30 +75°C				
24	Storage Humidity	-	10 - 95%RH (No Condensing)				
25	Cooling	-	Convection Cooling				
26	Withstand Voltage	-	Input - FG : 2kVAC (10mA), Input - Output : 3kVAC (10mA) Output - FG : 500VAC (20mA) for 1min				
27	Isolation Resistance	-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC				
28	Vibration	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.				
29	Shock	-	Less than 196.1m/s <sup>2</sup>				
30	Safety	-	Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1 (Expire date of 60950-1 : 20/12/2020), EN50178(OV II) Designed to meet DENAN at 100VAC Only.				
31	Conducted Emission	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B				
32	Radiated Emission	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B				
33	Immunity	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11				
34	Weight (Typ)	g	45				
35	Size (W x H x D)	mm	50 x 22 x 73.5 ( Refer to Outline Drawing )				

\*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 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. Please refer to Fig. A for measurement of Vo, line & load regulation and ripple voltage.
- \*5. For start up at low ambient temperature and low input voltage, output ripple noise might not meet specification. However, specification can be met after one second.
- \*6. 85 - 265VAC, constant load.
- \*7. No load-Full load, constant input voltage.
- \*8. Current limiting (hiccup) with automatic recovery.  
Avoid to operate at over load or short circuit condition for more than 30seconds.
- \*9. OVP circuit will shut down output , manual reset (Re power on).
- \*10. Measured by the each measuring method of UL, CSA, EN and DENAN(at 60Hz), Ta=25°C.
- \*11. Output Deratings
  - Derating at standard mounting. Refer to output derating curve (CA790-01-02 \_).
  - When forced air cooling, refer to derating curve(CA790-01-02 \_).
  - Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.
- \*12. Output Derating needed when input voltage less than 90VAC. Refer to output derating vs. input voltage (CA790-01-03 \_).



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OUTPUT DERATING

CA790-01-02

\*COOLING: CONVECTION COOLING

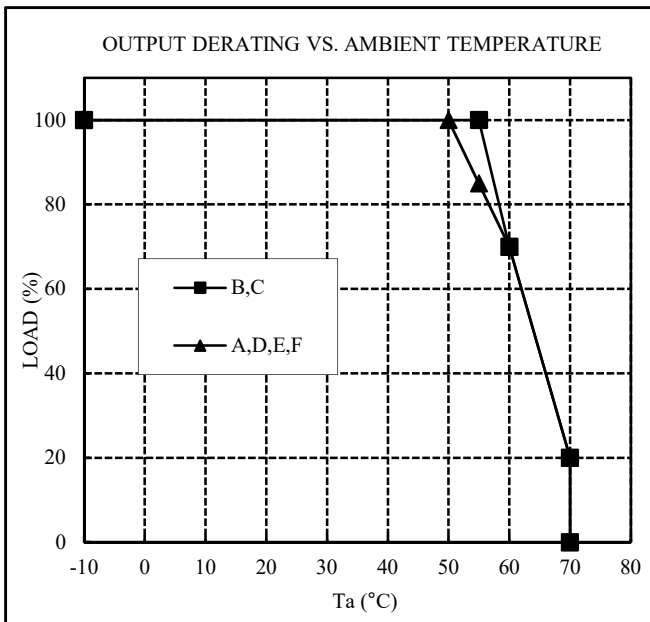
Ta (°C)	LOADING CONDITION(%)	
	Mounting B,C	Mounting A,D,E,F
-10~50	100	100
55	100	85
60	70	70
70	20	20

\*COOLING: FORCED AIR COOLING

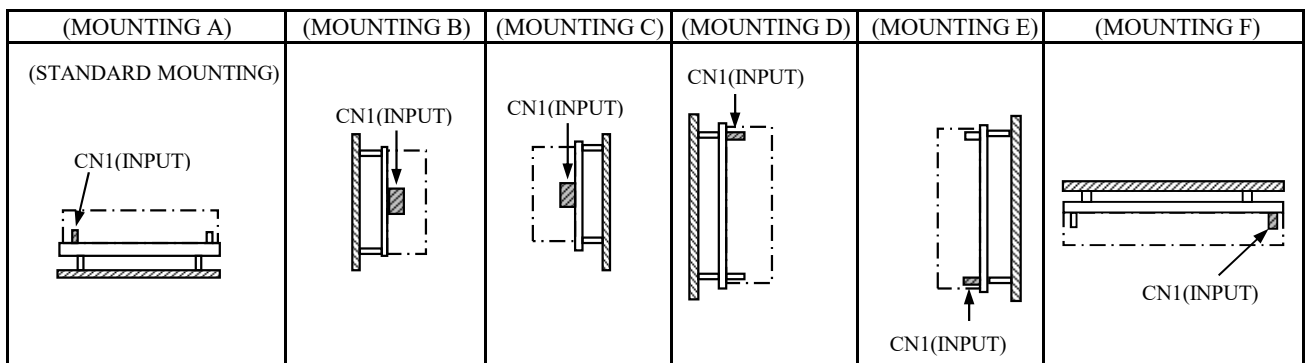
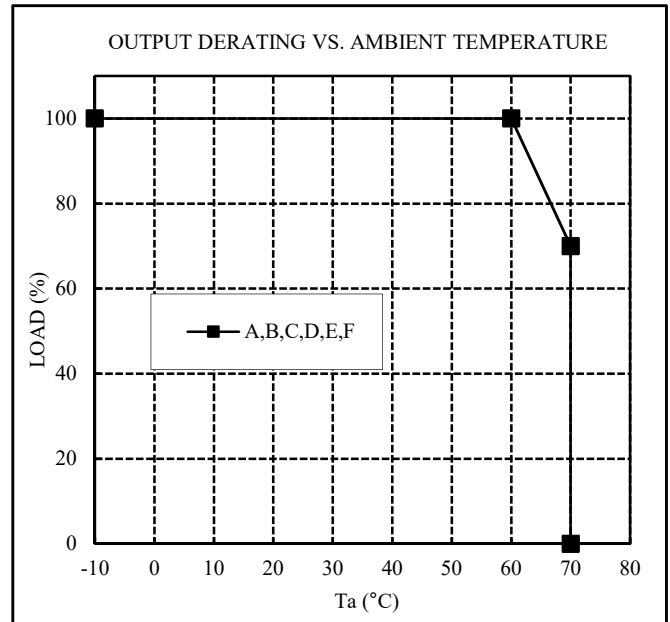
Ta (°C)	LOADING CONDITION(%)
	All Mounting (A,B,C,D,E,F)
-10~60	100
70	70

Air Velocity $\geq$ 0.7m/s: Air must flow through component side.

\*COOLING: CONVECTION COOLING



\*COOLING: FORCED AIR COOLING



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OUTPUT DERATING

CA790-01-03A

Input voltage	LOADING CONDITION(%)
	All Mounting (A,B,C,D,E,F)
85VAC	90
90VAC-265VAC	100

