

ZWS10C/A

SPECIFICATIONS (1/2)

FA011-01-01/A

ITEMS		MODEL	ZWS10C-5/A	ZWS10C-12/A	ZWS10C-15/A	ZWS10C-24/A
<b>INPUT</b>						
Input Voltage Range	(*2)	-	85 - 265VAC (47 ~ 63Hz)			
Efficiency (Typ.)	(*1)	%	77 / 78	82 / 83	83 / 84	84 / 85
Input Current (Typ.)	(*1)	A	0.25 / 0.13			
Inrush Current (Typ.)	(*1)(*3)	-	30A / 60A at Cold Start			
PFHC		-	-			
Power Factor (Typ.)		-	-			
<b>OUTPUT</b>						
Nominal Output Voltage		V	5	12	15	24
Output Voltage Range		-	Fixed (Shipment condition : 5V : ±2% ; 12V,15V : ±2.5% ; 24V : ±3%)			
Maximum Output Current		A	2	0.9	0.7	0.5
Maximum Output Power		W	10	10.8	10.5	12
Maximum Line Regulation	(*4)(*5)	%	0.40	0.40	0.40	0.40
Maximum Load Regulation	(*4)(*6)	%	0.80	0.80	0.80	0.63
Temperature Coefficient	(*4)	-	Less than 0.02% / °C			
Maximum Ripple & Noise (*4)	0 ≤ Ta ≤ 70°C, 35 ~ 100% Load	mV	120	150	150	150
	-10 ≤ Ta < 0°C, 35 ~ 100% Load	mV	160	180	180	180
	-10 ≤ Ta ≤ 70°C, 0 ~ 35% Load	mV	200	240	240	240
Hold-up Time (Typ.)	(*10)	-	20ms			
Leakage Current	(*9)	-	Less than 0.15/0.30mA. (100VAC/230VAC, 60Hz)			
Over Current Protection	(*7)	-	> 105%			
Over Voltage Protection	(*8)	-	> 115%			> 112%
<b>FUNCTION</b>						
Remote ON/OFF Control		-	None			
Remote Sensing		-	None			
Parallel Operation		-	Not Possible			
Series Operation		-	Possible			
<b>ENVIRONMENT</b>						
Operating Temperature	(*11)	-	-10 to +70°C (-10 to +45°C : 100% ; +70°C : 50%)			
Storage Temperature		-	-30 to +75°C			
Operating Humidity		-	30 to 90%RH (No Condensing)			
Storage Humidity		-	10 to 95%RH (No Condensing)			
Vibration	(*12)	-	At no operating, 10 to 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.			
Shock	(*12)	-	At no operating, Less than 196.1m/s <sup>2</sup>			
Cooling		-	Convection Cooling / Forced Air Cooling			
<b>ISOLATION</b>						
Isolation Class / Class of Protection		-	Class I (L,N,FG) or Class II (L,N)			
Withstand Voltage		-	Input - Output : 3kVAC (10mA), Input - FG : 2kVAC (10mA), Output - FG : 750VAC (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 EN60335-1, IEC/UL/CSA/EN62368-1 (Altitude ≤ 4,000m) Approved by IEC/EN61558-1, IEC/EN61558-2-16 (Altitude ≤ 3,000m) Design to meet IEC60335-1, Den-an appendix 12 (J62368-1, J61558-1, J61558-2-16, J60335-1)			
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			
Immunity	(*12)	-	Designed to meet IEC61000-6-2, IEC61000-4-2, -3, -4, -5, -6, -8, -11			
<b>MECHANICAL</b>						
Weight (Typ.)		g	115			
Size (W x H x D)		mm	59.0 x 33.5 x 81.3 ( Refer to Outline Drawing )			

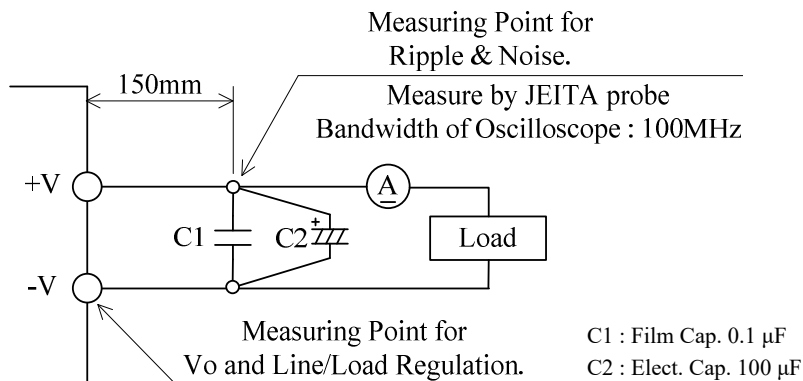
SPECIFICATIONS (2/2)

\*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 inrush 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. 85 - 265VAC, constant load.
- \*6. No load to full load, constant input voltage.
- \*7. Current limiting (Hiccup) with automatic recovery.  
Avoid to operate at over load or short circuit condition.
- \*8. Over voltage clamping by zener diode.
- \*9. Measured by the each measuring method of UL, CSA, EN and DENAN (at 60Hz), Ta=25°C.
- \*10. At 100VAC, Ta=25°C, nominal output voltage and 80% output power.
- \*11. Output Deratings,
  - Convection cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA011-01-02/A\_).
  - Forced air cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA011-01-03/A\_).
 Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.
- \*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.

Fig. A



OUTPUT DERATING (1/2)

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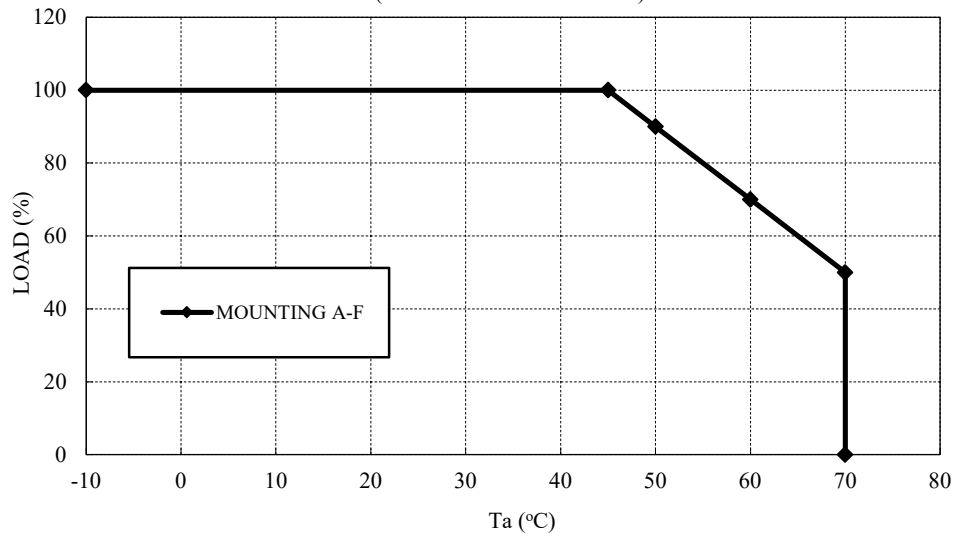
**OUTPUT DERATING vs. AMBIENT TEMPERATURE**

\*COOLING : CONVECTION COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.

Ta (°C)	LOAD (%)
	MOUNTING A-F
-10 - +45	100
50	90
60	70
70	50

LOAD vs. AMBIENT TEMPERATURE  
(CONVECTION COOLING)



(MOUNTING A)	(MOUNTING B)	(MOUNTING C)	(MOUNTING D)	(MOUNTING E)	(MOUNTING F)
(STANDARD MOUNTING)	CNI(INPUT)		CNI(INPUT)		
CNI(INPUT)					
		CNI(INPUT)		CNI(INPUT)	CNI(INPUT)

OUTPUT DERATING (2/2)

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**OUTPUT DERATING vs. AMBIENT TEMPERATURE**

\*COOLING : FORCED AIR COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.

Ta (°C)	LOAD (%)
	MOUNTING A-F
-10 - +60	100
70	50

Air velocity > 0.8m/s : Air must flow through components side.

