

ZWS10C/L

SPECIFICATIONS (1/2)

FA011-01-01/L

ITEMS		MODEL	ZWS10C-5/L	ZWS10C-12/L	ZWS10C-15/L	ZWS10C-24/L
INPUT						
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.)		-	-			
OUTPUT						
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	0 ≤ Ta ≤ 70°C, 35 ~ 100% Load	mV	120	150	150	150
Ripple &	-10 ≤ Ta < 0°C, 35 ~ 100% Load	mV	160	180	180	180
Noise (*4)	-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%
FUNCTION						
Remote ON/OFF Control		-	None			
Remote Sensing		-	None			
Parallel Operation		-	Not Possible			
Series Operation		-	Possible			
ENVIRONMENT						
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 ² Constant, X,Y,Z 1hour each.			
Shock	(*12)	-	At no operating, Less than 196.1m/s ²			
Cooling		-	Convection Cooling / Forced Air Cooling			
ISOLATION						
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			
STANDARD AND COMPLIANCE						
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			
MECHANICAL						
Weight (Typ.)		g	90			
Size (W x H x D)		mm	59.0 x 33.5 x 81.3 (Refer to Outline Drawing)			

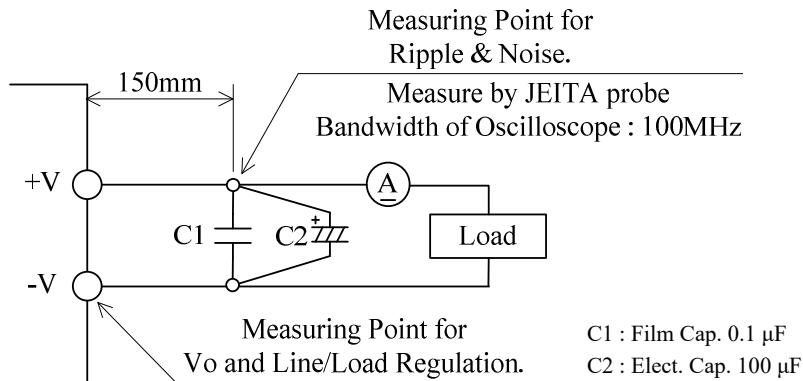
SPECIFICATIONS (2/2)

*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/L_).
 - Forced air cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA011-01-03/L_).
 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)

FA011-01-02/L

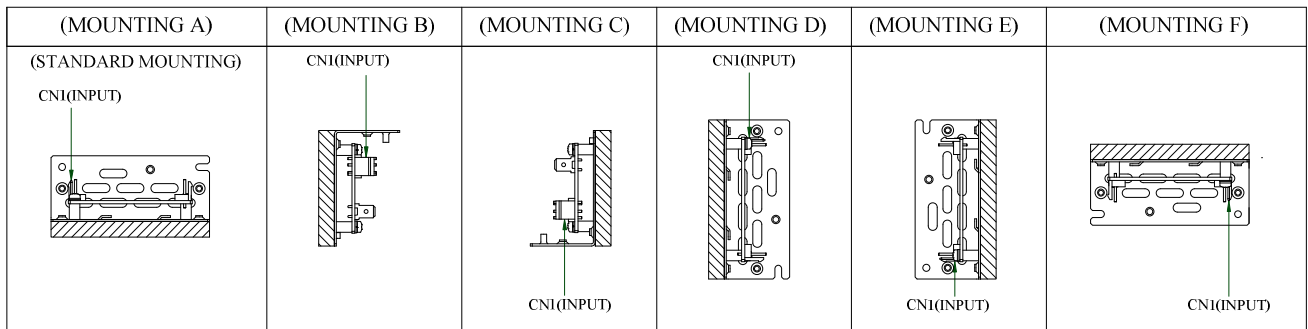
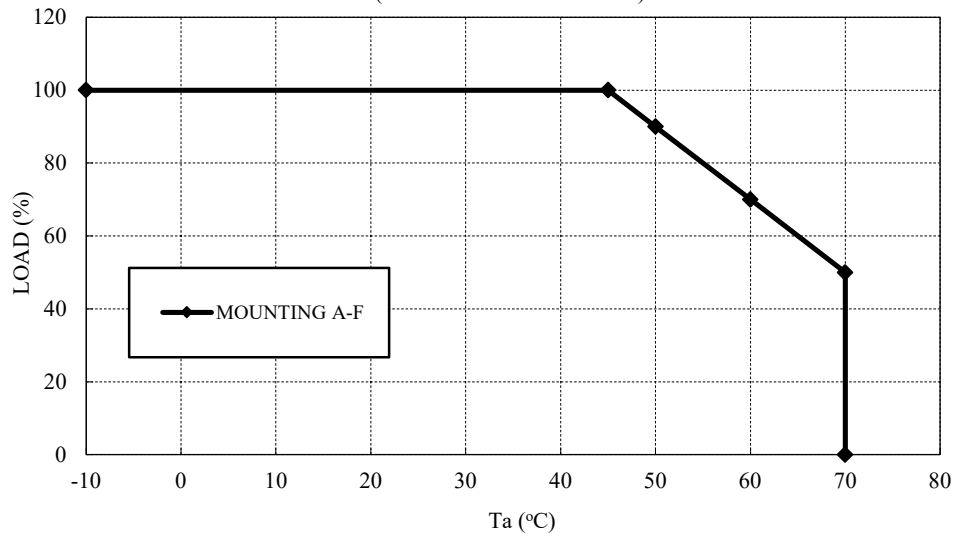
OUTPUT DERATING vs. AMBIENT TEMPERATURE

*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)



OUTPUT DERATING (2/2)

FA011-01-03/L

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.

