ZWS30C/L

SPECIFICATIONS (1/2)

FA013-01-01/L

ITEMS \ MODEL				ZWS30C-5/L	ZWS30C-12/L	ZWS30C-15/L	ZWS30C-24/L
INPUT							
	Input Voltage Range	(*2)	-	85 - 265VAC (47 ~ 63Hz)			
	Efficiency (Typ.)	(*1)	%	80 / 82	84 / 86	85 / 87	86 / 88
	Input Current (Typ.)	(*1)	A	0.60 / 0.35	0.70 / 0.50		
	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 : ±2.5% ; 12V,15V,24V : ±4%)			
	Maximum Output Current	100VAC	A	4.00	2.50	2.00	1.25
		200VAC			2.92	2.33	1.46
	Maximum Output Power	100VAC	W	20.0	30.0	30.0	30.0
		200VAC			35.0	35.0	35.0
	Maximum Line Regulation	(*4)(*5)	%	0.40	0.40	0.40	0.40
	Maximum Load Regulation	(*4)(*6)	%	2.40	1.00	0.80	0.80
	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%			
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 +40°C : 100% ; +70°C : 40%)			
	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 (Atitude ≤ 4,000m) Approved by IEC/EN61558-1, IEC/EN61558-2-16 (Atitude ≤ 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	135			
	Size (W x H x D)		mm	64.0 x 35.5 x 94.0 (Refer to Outline Drawing)			

ZWS30C/L

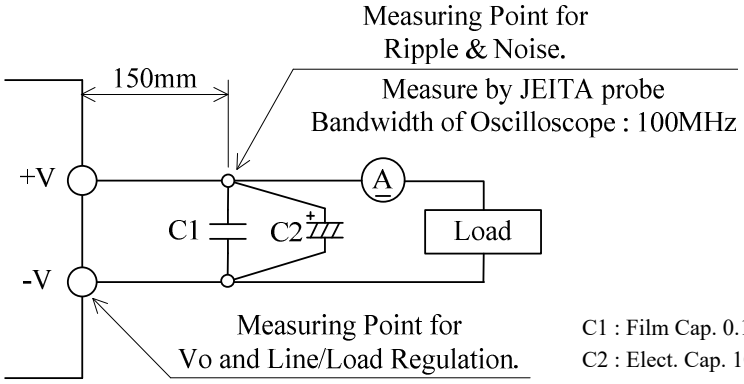
SPECIFICATIONS (2/2)

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

=NOTES=

*1. At 100VAC/200VAC, Ta=25℃, 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. OVP circuit will be shut down output, manual reset (Re power on).
*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 (FA013-01-02/L_).
- Forced air cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA013-01-03/L_).
Load (%) is persent 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



C1 : Film Cap. 0.1 μF
C2 : Elect. Cap. 100 μF

OUTPUT DERATING (1/2)

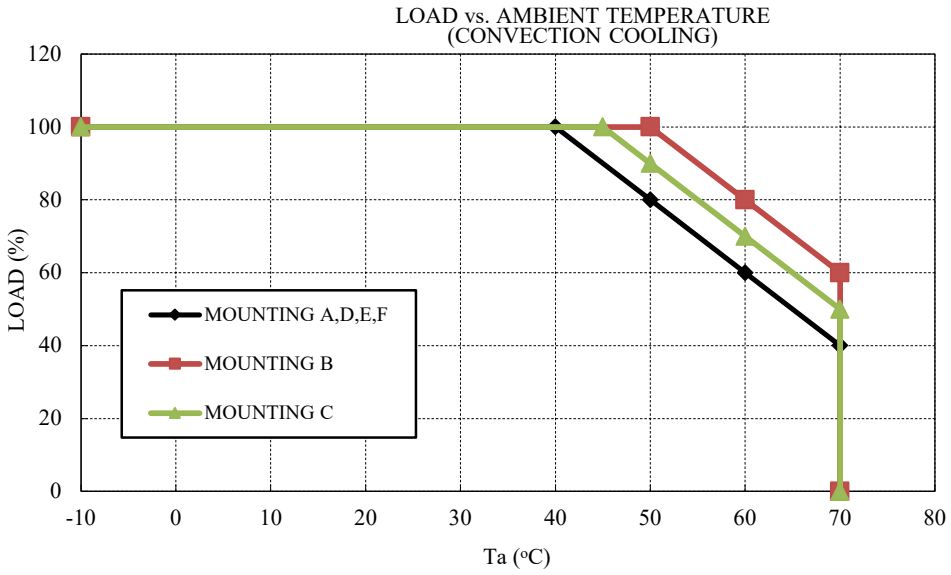
FA013-01-02/L

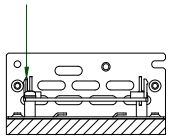
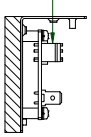
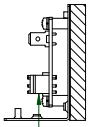
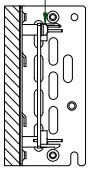
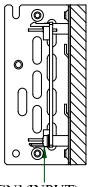
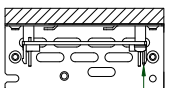
OUTPUT DERATING vs. AMBIENT TEMPERATURE

*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,D,E,F	MOUNTING B	MOUNTING C
-10 - +40	100	100	100
45	90	100	100
50	80	100	90
60	60	80	70
70	40	60	50



(MOUNTING A)	(MOUNTING B)	(MOUNTING C)	(MOUNTING D)	(MOUNTING E)	(MOUNTING F)
(STANDARD MOUNTING) CN1(INPUT) 	CN1(INPUT) 	 CN1(INPUT)	CN1(INPUT) 	 CN1(INPUT)	 CN1(INPUT)

OUTPUT DERATING (2/2)

FA013-01-03/L

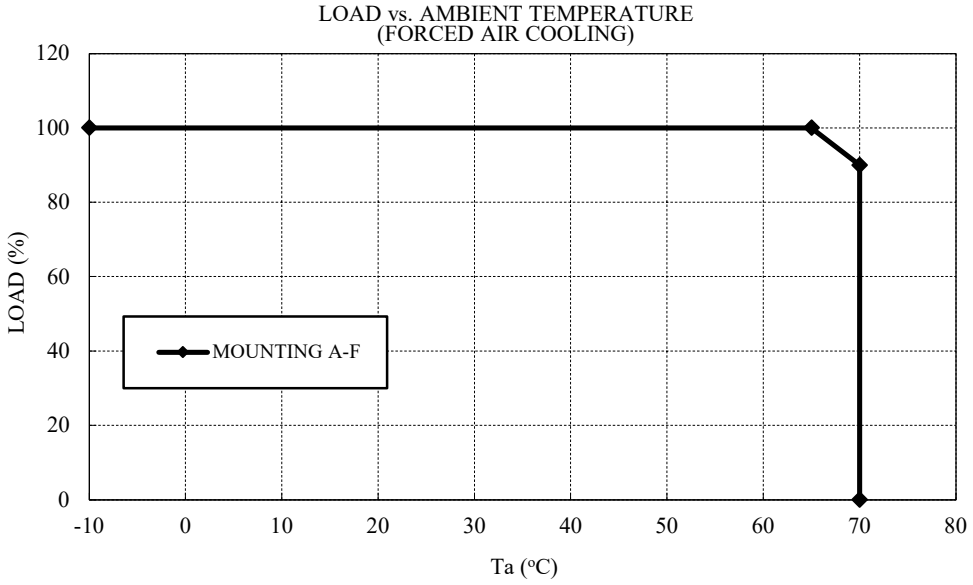
OUTPUT DERATING vs. AMBIENT TEMPERATURE

*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 - +65	100
70	90

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



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