

**ZWS30C/A**

SPECIFICATIONS (1/2)

FA013-01-01/A

ITEMS		MODEL	ZWS30C-5/A	ZWS30C-12/A	ZWS30C-15/A	ZWS30C-24/A
<b>INPUT</b>						
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.)		-	-			
<b>OUTPUT</b>						
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%			
<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 +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 <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 (Attitude ≤ 4,000m) Approved by IEC/EN61558-1, IEC/EN61558-2-16 (Attitude ≤ 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	160			
Size (W x H x D)		mm	64.0 x 35.5 x 94.0 ( Refer to Outline Drawing )			

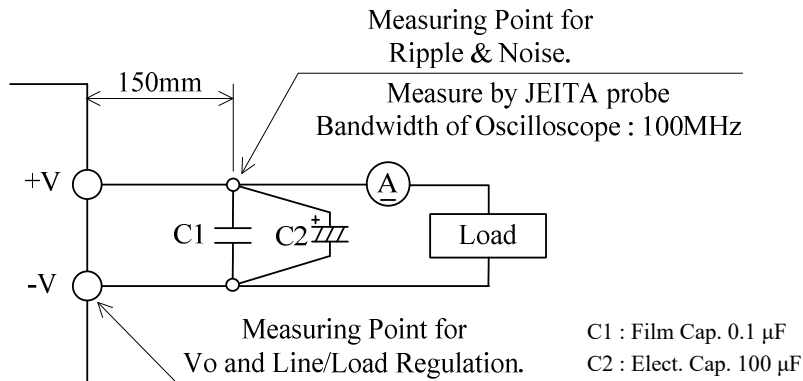
SPECIFICATIONS (2/2)

\*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. 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/A\_).
  - Forced air cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA013-01-03/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)

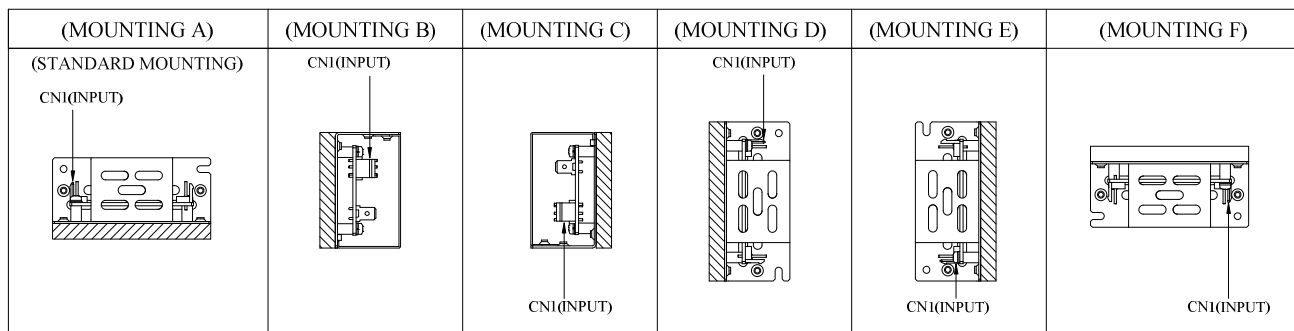
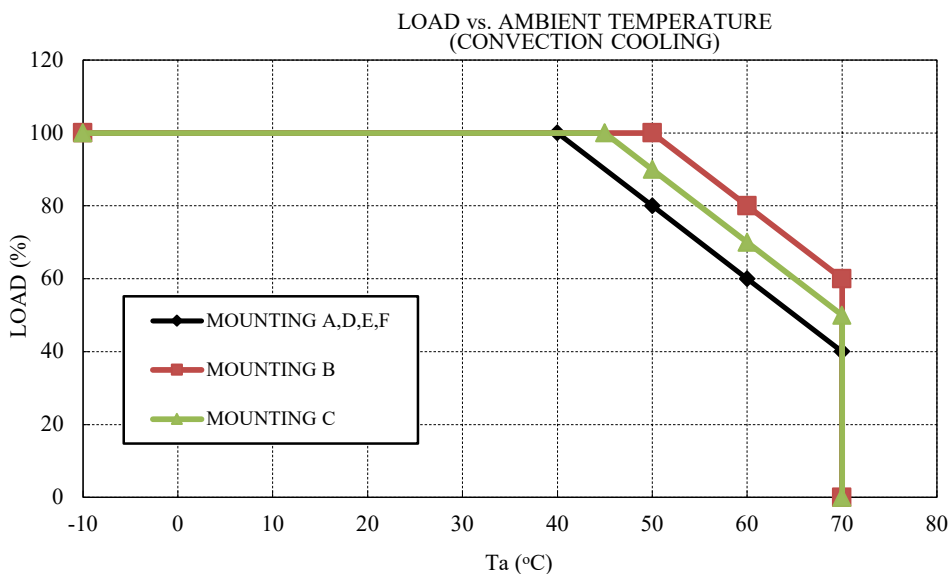
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**OUTPUT DERATING vs. AMBIENT TEMPERATURE**

\*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,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



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 - +65	100
70	90

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

