KWS10A/KS

SPECIFICATIONS

FB002-01-01A

	ITEMS / MODEL			KWS10A-5/KS	KWS10A-12/KS
1	Nominal Output Voltage		V	5	12
2	Maximum Output Current		A	2.0	0.9
3	Maximum Output Power		W	10.0	10.8
4	Efficiency (Typ.)	100VAC	%	76	80.0
	(*1)	200VAC	%	77	81
5	Input Voltage Range	(*2)	-	85- 265VAC (47-440Hz) or 120- 370VDC	
6	Input Current (Typ.)	(*1)	A	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	Fixed	
9	Output Voltage Accuracy		-	+/- 5%	
10	Maximum Ripple & Noise	(*4)(*5)(*6)	mV	200	240
11	Maximum Line Regulation	(*5)(*12)	mV	20	48
12	Maximum Load Regulation	(*6)(*12)	mV	40	96
13	Temperature Coefficient		-	Less than 0.02% / °C	
14	Over Current Protection	(*7)	A	2.10 -	0.95 -
15	Over Voltage Protection	(*8)	V	5.75 - 7.0	13.8 - 18.3
16	Hold-up Time (Typ.)	(*9)	-	10ms(17ms at 50%Load) / 30ms	
17	Leakage Current		-	-	
18	Parallel Operation		-	-	
19	Series Operation		-	Possible	
20	Operating Temperature	(*10)(*11)	-	-10 to 85°C : 5V (-10 to 45°C : 100%, 65°C : 55%, 85°C : 10%) 12V (-10 to 55°C : 100%, 70°C : 55%, 85°C : 10%) Guarantee Start up at -40 to -10°C	
21	Operating Humidity		-	30 to 90%RH (No Condensing)	
22	Storage Temperature		-	-40 to +85°C	
23	Storage Humidity		-	20 to 95%RH (No Condensing)	
24	Cooling		-	Convection Cooling	
25	Withstand Voltage		-	Input - Output : 3kVAC(20mA) for 1 minute.	
26	Isolation Resistance		-	More than 100M Ohms at 25°C and 70%RH Input - Output 500VDC	
27	Vibration		-	10 - 55Hz, constant amplitude 1.65mmp-p (Max 10G), sweep 1 minute X, Y, Z 1 hour each	
28	Shock		-	Less than 50G for 11 ± 5ms on ± (X, Y, Z) axis each 3 times	
29	Safety	(*12)	-	Designed to meet UL60950-1, CSA60950-1, EN60950-1. Designed to meet Den-an Appendix 12 .	
30	Conducted Emission	(*13)	-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B (Need External parts) Designed to meet EN55011/EN55022-A, FCC-A, VCCI-A (No Need External parts)	
31	Radiated Emission	(*13)	-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B (Need External parts) Designed to meet EN55011/EN55022-A, FCC-A, VCCI-A (No Need External parts)	
32	Immunity	(*13)	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11	
33	Weight (Typ.)		-	45g	
34	Size (W x H x D)		mm	45 x 28.5 x 55 (Refer to Outline Drawing)	

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

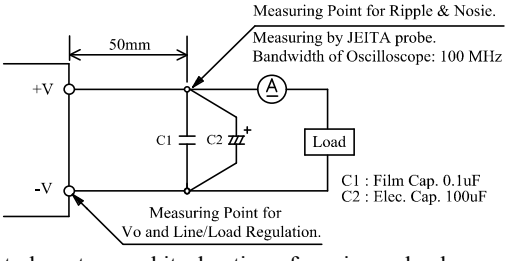
=NOTES=

*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 inrush current to Noise Filter for less than 0.2ms.

*4. Measure with JEITA RC-9131B probe, Bandwidth of scope :100MHz.
For start up at low ambient temperature and low input voltage, output ripple noise might not meet specification.
However, specification can be met after 1 minute.



*5. 85 - 265VAC, constant load.

*6. No load-Full load, constant input voltage.

*7. Hiccup with automatic recovery.
Avoid to operate at over load or short circuit condition.

*8. OVP apply the output zener clamp circuit.

*9. At 100VAC with 70% load ; 200VAC with 100% load.

*10. Output Derating
- Refer to OUTPUT DERATING CURVE (FB002-01-02_).
- Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.
- For conditions of start up at -40°C to -10°C, refer to derating curve (FB002-01-03_).

*11. Output derating needed when input voltage less than 100VAC. Refer to LOAD vs. INPUT VOLTAGE (FB002-01-02_).

*12. The /KS model didn't get safety approval, but the installed power supply on PCB board already got safety certification.

*13. 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 directives.

KWS10A/KS

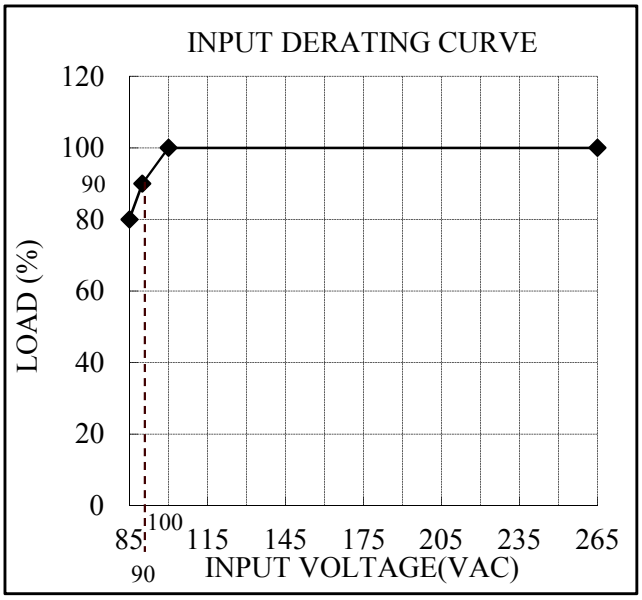
INPUT AND OUTPUT DERATING

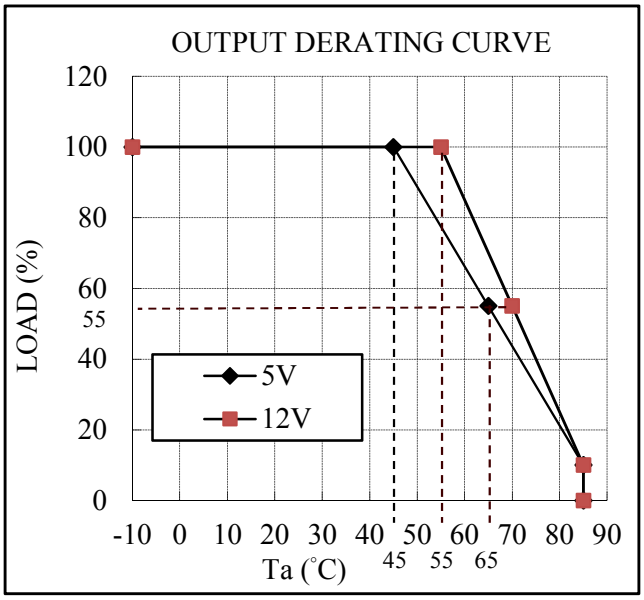
FB002-01-02

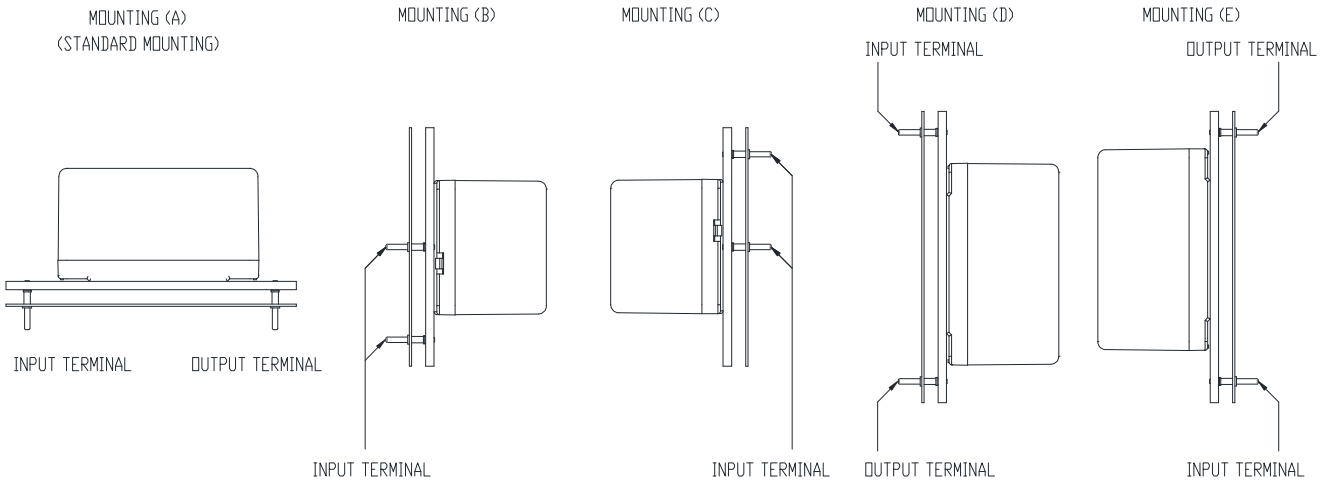
VIN(VAC) 5V, 12V	LOAD (%)
85	80
90	90
100 to 265	100

Ta (°C) 5V	LOAD (%)
-10 to +45	100
65	55
85	10

Ta (°C) 12V	LOAD (%)
-10 to +55	100
70	55
85	10





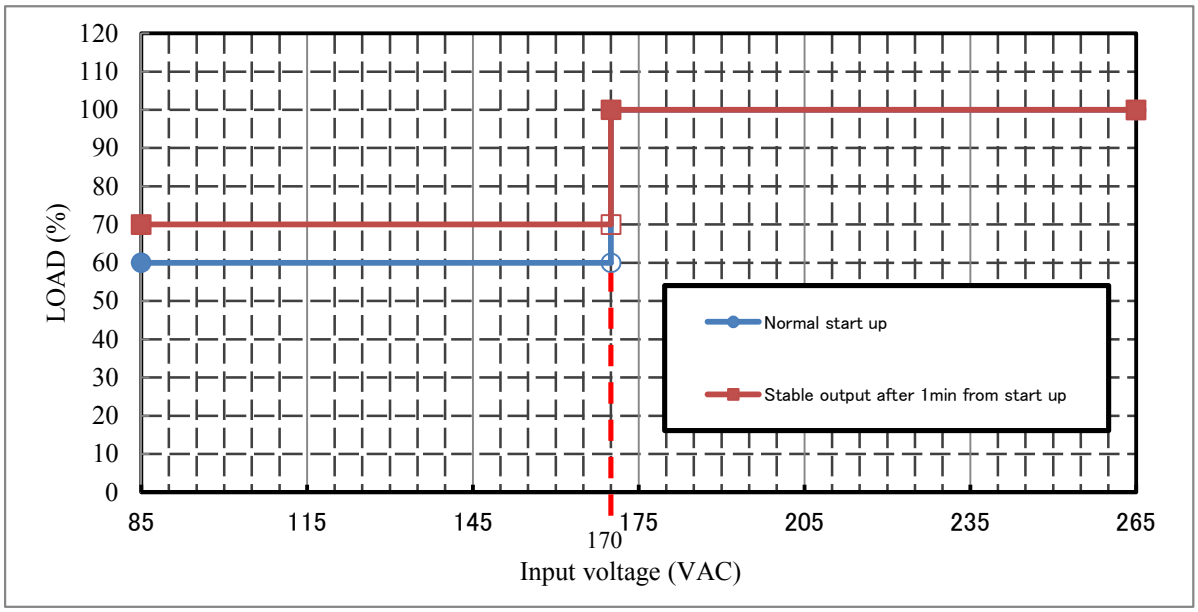


KWS10A/KS

DERATING TO START UP AT Ta: -40 to -10°C

FB002-01-03

VIN(VAC)	LOAD (%)	
	Normal start up	Stable output after 1 min from start up
85≦Vin<170	60	70
170≦Vin≦265	100	100



NOTE :

* At Ta: -40 to-10°C
* Input voltage : Not gradual start up.
* Do not use the load that is constant current mode.
* Avoid forced air cooling . It is assumed that inside of power supply is heated by self-heating within 1 minute.
* No condensing.
* Pay attention to above items before using the unit. Incorrect usage could lead to unstable output voltage.