
DESKTOP POWER SUPPLY

KNA30M14P

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1.0 SCOPE

This is the specification of Model KNA30M14P, AC-DC adapter switching power supply designed and manufactured in China.

2.0 AC INPUT SPECIFICATION

AC INPUT VOLTAGE

115VAC / 230VAC (Normal)			
Limits	Minimum	Maximum	Unit
AC Input Voltage	90.0	264.0	VAC

AC INPUT FREQUENCY

115VAC / 230VAC (Normal)			
Limits	Minimum	Maximum	Unit
AC Input Frequency	47.0	63.0	Hz

AC INPUT CURRENT

115VAC / 230VAC (Normal)			
Limits	Minimum (115VAC)	Maximum (230VAC)	Unit
AC Input Current	1	0.6	Amperes (rms)

AC INRUSH CURRENT

(Cold start at 25°C ambient) DC full loading, 50A @ 115VAC or 100 A @ 230VAC.

3.0 DC OUTPUT SPECIFICATION

3.1 TABLE 1

Model				Output					Average Efficiency 115/230VAC (%)	Partnumber
	Class I	Class II		Uout (V)	Tol. (%)	Iout (A)	Ripple & Noise (mV)	DC-Output Load Cross Section		
KNA30M	14		P-090C3Q0804VL	9,0	± 5%	3,3	<100	AWG16	>84%	5102-00017
KNA30M	14		P-120B3Q1204VL	12,0	± 5%	2,5	<120	AWG18	>84%	5102-00018
KNA30M	14		P-180A7Q1204VL	18,0	± 5%	1,66	<180	AWG18	>84%	5102-00019
KNA30M	14		P-240A3Q1204VL	24,0	± 5%	1,25	<200	AWG18	>84%	5102-00020

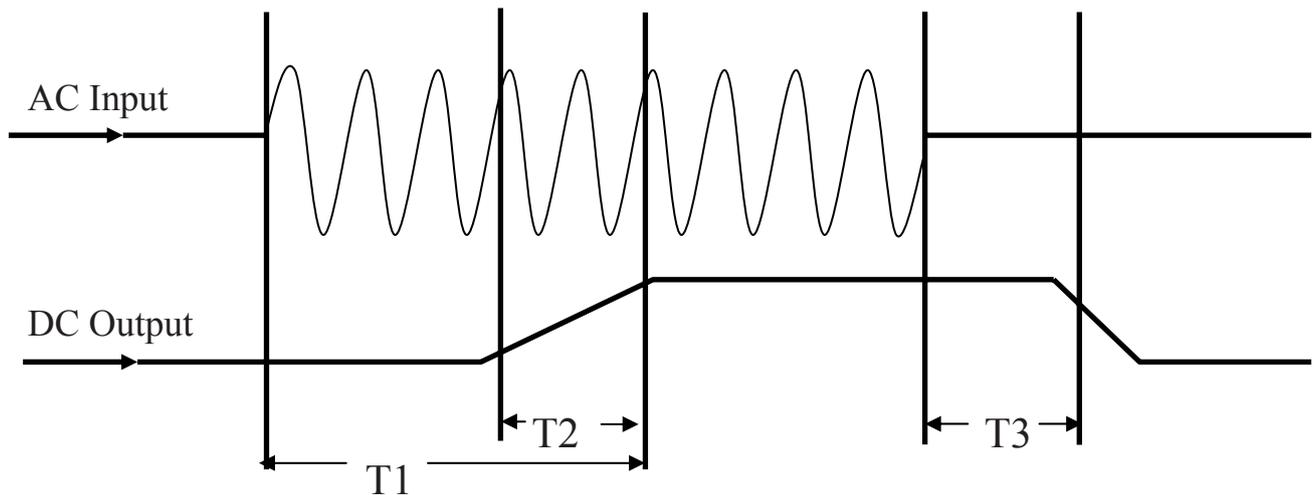
3.2 DC OUTPUT VOLTAGE, OUTPUT CURRENT, RIPPLE AND NOISE

Ripple measurement is made with an oscilloscope of 20MHz bandwidth. Output should be bypassed at connector with 0.1uF/50V Ceramic capacitor and 47uF/50V electrolytic capacitor simulate system load. If a non-differential type of scope was used, the length of ground wire on probe should be less than 40mm.

3.3 DYNAMIC DC OUTPUT CHARACTERISTICS:

Output load step from 25% to 75% of full load, S/R=0.1 A/uS, 100Hz & 1KHz 50% duty.
Output voltage within nominal voltage ± 5%.

3.4 HOLD UP TIME AND RISE UP TIME



Symbol Name	Test condition	Maximum	Minimum	
T1	Turn on time	115VAC / 60Hz	3 Second	*
T2	Soft-Start Delay Time and Rise Time	115VAC / 60Hz	40mS	*
T3	Hold Up Time	115VAC/60Hz/Max. Load	*	8mS

3.0 DC OUTPUT SPECIFICATION

3.5 OVERSHOOT

The output overshoot at turn on shall not exceed 5% of normal voltage value with or without the load connected.

4.0 PROTECTION

The power supply will be auto recovery while the fault removed. Except over voltage protection latch, Need to restart input voltage.

INPUT SECTION PROTECTION

AC FUSE PROTECTION

The fuse inside the power supply shall be open when AC input current is over the rated of fuse. The power supply fuse rating is 2A/250VAC time lag type.

OUTPUT SECTION PROTECTION

OVER VOLTAGE PROTECTION (OVP)

When the power supply DC output occur over voltage, the power supply should be latch when over voltage remove and input voltage restart, the power supply will be re-start.

(internal test)

Output Voltage	Active Range		Result
	Minimum	Maximum	
Nominal Output Voltage	1,3 x Uout nominal	2,0 x Vout nominal	Shut down

OUTPUT CURRENT PROTECTION (OCP)

When the power supply DC output occur over current, the power supply should be auto-recovery.

When output current remove, the power supply will be restart. A output current condition on DC output shall cause no damage system.

(External Load)

Output Current	Active Range		Result
	Minimum	Maximum	
Nominal Output Current	1,2 x Iout nominal	2,6 x Iout nominal	auto-recovery

SHORT CIRCUIT PROTECTION (SCP)

Output can be shorted without damage and auto recovery.

5.0 POWER SAVING

5.1 MAXIMUM ENERGY CONSUMPTION IN NO-LOAD MODE

At 230VAC input voltage with no load power supply, Input power <0.3W

6.0 EFFICIENCY

It meets Energy Star (Version 2.0) at normal input voltage. (115VAC/60Hz; 230VAC/50Hz)

Average mode efficiency of the power supply see table 1

Average mode efficiency is defined as the average efficiency of 25% of maximum load, 50%, 75% and 100% maximum load and tested at 115Vac and 230Vac

The UUT shall be operated at 100% of nameplate current output for at least half an hour immediately prior to conducting efficiency measurements.

Efficiency measurements shall be conducted in sequence

Load point: 100% / 75% / 50% / 25%

7.0 COOLING OF PSU

The power supply is intended to be used at natural air cooling.

8.0 DIELECTRIC WITHSTAND VOLTAGE

8.1 HI-POT

When input to PE 4000VAC/10mA, the Power Supply can last out for 1 minute.

8.2 INSULATION RESISTANCE

The insulation resistance shall be over 100M ohms after application of 500VDC for 1 minute.

8.3 LEAKAGE CURRENT

The leakage current must be less than 0.1mA when the Power Supply is at rated load with any input voltage.

9.0 ENVIRONMENT

9.1 TEMPERATURE

Storage: -10°C to 70°C

Operating 0°C to 40°C

9.0 ENVIRONMENT

9.2 HUMIDITY

Storage 5% to 95% RH Without Condensing

Operating 10% to 90% RH

9.3 ALTITUDE

The Power Supply is designed to be used at an attitude of 2000 meters.

9.4 ROHS

Complies to EU Directive 2011/65/EU "ROHS"

9.5 WEEE

Complies to EU Directive 2012/19/EU "WEEE"

10.0 SHOCK AND VIBRATION

SHOCK TEST

The subject power supplies will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Storage: All 6 sides; 40G, 6msec. Half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating: All sides except top; 10G, 6msec. Half-sine wave pulse in both directions on three mutually perpendicular axes.

VIBRATION TEST

a: Non operation vibration with shipping container shall be 2G'S peak 7-50HZ, 4G'S peak 50-500Hz, after test no abnormally to be found.

b: Operation vibration shall be 0.5G'S peak 10-60Hz, 3 Axes, after test no abnormally to be noted.

11.0 EMS STANDARDS

IEC 61000-4-2 EN 61000-4-2	Electronic Discharge-ESD	
	Contact Discharge	+/- 6KV
	Air Discharge	+/- 8KV
IEC 61000-4-3 IEC 61000-4-3	Radio-Frequency Electro Magnetic Field Susceptibility Test-RS	
IEC 61000-4-4 EN 61000-4-4	Electrical Fast Transient / Burst-FET + / - 1KV	
IEC 61000-4-5 EN 61000-4-5	Surge Immunity Test	
	Voltage Model	+/- 1KV applied between line and line, pulse rise time 1.2µsec and duty time 50µsec ; ± 2KV applied between line and power ground (signal ground), pulse rise time 1.2µsec and duty time 50µsec.
	Phase	0° ; 90° ; 180° ; 270°
	Each phase apply 3 times surge, each supply surge need keep at least 25 Sec.	

12.0 EMI STANDARDS

IEC 61000-4-3	
EN 55011 Class B FCC Class B	Conduction Test
	Radiation Test
Harmonic current emissions Class A	EN61000-3-2
Flicker	EN61000-3-3

13.0 SAFETY STANDARDS

The power supply must be approved by:

Safety agency	Meet
UL	UL 60601-1
CE / EMC	EN 60601-1
TUV	EN 60601-1

14.0 RELIABILITY

14.1 M.T.B.F.

The subject adapter have a minimum predicted MTBF of 100000 hours of continuous operation at 25°C, maximum output load, and normal AC input voltage.
(115VAC/60Hz; 230VAC/50Hz).

14.2 SAFETY

The unit complies to IEC60601, 2 x MOPP

15.0 CASE

The color of the case is black.

16.0 MECHANICAL DRAWING (UNIT: mm)

