



Zecks Power Co., Ltd.

7F, NO.1-1, Ln.530, Zhongzheng N. Rd., Sanchong City, Taipei, Taiwan, R.O.C.  
Tel : 886-2-29836088 Fax : 886-2-29838388 E-mail : [zecks@seed.net.tw](mailto:zecks@seed.net.tw)

# Specification of ATX Switching Power Supply

**Model No. ZKS-400WX(RoHS)**  
**【Total Wattage 400W RoHS】**  
**With Auto Switching (Full Range)**

Prepared By	Designed By	Approved By	Issued By

## 1. 1. INPUT :

1.1 AC Input Range : Auto Switching (47Hz ~ 63Hz)

90V~135V (Input 115VAC)

180V~260V (Input 230VAC)

1.2 AC Input Current : 9A (RMS) / 115VAC

(@ without AC Outlet) 5A (RMS) / 230VAC

1.3 Brown Out Voltage : 95VAC max. @ 60Hz.

1.4 Inrush Current : 70A max. (cold start)

(at 25°C ambient cold start)

## 2. DC OUTPUT :

◆◆◆◆◆◆	V1	V2	V3	V4	V5	V6
Output Voltage	+3.3V	+5V	+12V	-5V	-12V	+5Vsb
Max. Current	35A (I1)	45A (I2)	15A	1A	1A	3A
Min. Current	0A	1.0A	1.0A	0A	0A	0.3A
Load Regulation	5%	5%	5%	10%	10%	5%
Line Regulation	1%	1%	1%	2%	2%	1%
Ripple & Noise	50mv	50mv	100mv	100mv	120mv	50mv
* * * * *	Total 245W Max.		* * *	* * *	* * *	* * *
			*	*	*	*

$$(V1 \cdot I1) + (V2 \cdot I2) < 245W$$

Note : A low pass filter shall be added to outputs during measurement. (EXP. : 0.47uF Tan-cap. & 0.1uF Ceramic-cap.)

## 3. OVERALL PERFORMANCE

3.1 Total Output Power : 400W

3.2 Efficiency : 78% min. at full load (AC input 230V)

3.3 Power Up Time : <20ms for +5V output voltage.

3.4 Hold Up Time : 16 ms min.

3.5 Power Good Time : The PWR-GOOD signal will not be higher than 100 - 500 ms after the +5V output stabilizes at its operating value when the unit is turn on.

3.6 Power Fail Signal : The TTL compatible signal will go down at least 1 ms before +5V below 4.75V

3.7 Switching Frequency : 30KHz Typical.

3.8 Temperature coefficient : +0.05% per°C

3.9 PS on Signal : TTL compatible signal (active low)

#### 4. PROTECTION FEATURES

4.1 Over Voltage Protection :

DC +3.3V output from 3.8V ~ 4.3V

DC +5V output from 5.7V ~ 7.0V

DC +12V output from 13.4V ~ 15.6V

4.2 Over Load Protection : Total output 120% Min. ~ 160% Max.

4.3 Short Circuit : Latch off

#### 5. ENVIRONMENTAL

5.1 Operation Temperature : 0°C ~ 50°C (at 75% load, input 230V)

5.2 Cooling : Forced air ventilation by DC fan.

5.3 Fan type : Ball Bearing Fan

5.4 Fan status monitoring : Optional.

5.5 Humidity : 10% ~ 90% RH

5.6 Storage Temperature : -20°C ~ 80°C

5.7 Storage Humidity : 5% ~ 90% RH

5.8 Altitude : 10,000 ft max.

#### 6. SAFETY APPROVAL

a. UL 1950 / UL 1950 D3

b. TUV EN60950

c. CE Test Report

#### 7. ELECTROMAGNETIC COMPATIBILITY :

7.1 Electromagnetic Interference (EMS) :

FCC Part 15, subjecting, class B ; CISPR-22, class B

7.2 Electrostatic Discharge (ESD) : Comply with IEC801-2.

7.3 Radiated Susceptibility (RS) : Comply with IEC801-2.

7.4 Harmonics : meet EN61000-3-2 class A (@ PC system)

>>> Optional Active PFC Harmonics class D at full load <<<

#### 8. DIELECTRIC WITHSTAND ( HI-POT ) TEST

8.1 Primary to Secondary : 1800VAC -- 3 Sec. ( 5mA cut - off )

8.2 Primary to Ground : 1800VAC -- 3 Sec. ( 5mA cut - Off )

8.3 Leakage Current < 3.5mA at input 230V~ 60Hz

8.4 Ground Continuity : 100mΩ max. when the test current is at 25A

## 9. INSULATION RESISTANCE

9.1 Input to output :  $20M\Omega$  min.

9.2 Input to Ground :  $20M\Omega$  min.

10. RELIABILITY : MTBF 200,000 hours @ 25°C ambient.

## 11. SHOCK AND VIBRATION

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

Storage –40G, 11mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating –10G, 11mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Vibration Operation-Sine wave excited, 0.25G maximum acceleration, 10 - 250Hz swept at one octave/minute. Fifteen-minute dwell at all frequencies at which the device under test experience excursions two times large than non-resonant excursions.

12. MECHANICAL : L150 \* W140 \* H86 mm

(See drawing ZKS-400WX-PS2-ATX.pdf)