

# SPECIFICATION

## High Quality Switching Wallmount Adapter

Universal AC Input  
5.4W 13.5VDC 0.4A Output



**P/N: W135004YF-UJ**

**\*\*Specification Approval\*\***

This specification (total 7 pages including cover page) is approved in it's entirety by:

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## 1. Scope

The purpose of this document is to specify the performance of a switching power adapter with 4.8W total power from a single 12VDC 400mA output.

## 2. Electrical Requirements

### 2.1 Input Characteristic

#### 2.1.1 Input Voltage

The rated input voltage is from 100 to 240V RMS; but the power adaptor shall capable of supplying rated output power with maximum input range of 90 to 264V RMS.

MIN	NOMINAL	MAX	UNITS
90	100 – 240	264	Vrms

#### 2.1.2 Input Frequency

The adaptor shall be meet all applicable specifications with the input frequency range from 47 to 63Hz.

MIN	NOMINAL	MAX	UNITS
47	50 – 60	63	Hz

#### 2.1.3 Input Current

The input current is less than 300mA RMS at full load and input voltage of 100 to 240V

AC INPUT	MAX	UNITS
100-240	0.25	Ampere

#### 2.1.4 Stand-by Power

The Stand-by power of the adaptor shall be less than 0.3W at input voltage of 100 to 240V.

#### 2.1.5 Input Surge Current

The input surge current is less than 30A at 120V and 40A at 240V (cold start).

AC INPUT	MAX	UNITS
120	30	Ampere
240	40	Ampere

### 2.2 Output Characteristic

#### 2.2.1 Output Voltage and Output Power

The power adaptor provides single 13.5VDC output. The maximum continuous output power is 5.4W.

### 2.2.2 Efficiency

The efficiency of the power adaptor should be higher than 65% at full rated load and any rated input voltage.

### 2.2.3 Output Voltage Range

The output voltage under all conditions of rated input voltages, input frequencies and output loads from minimum to maximum can remain the following limit:

Normal Voltage	Regulation Tolerance	Limit
13.5V	±5%	12.9~14.1V

(Note: The limit at no load is 14.1V maximum and at full load is 12.9V minimum.)

### 2.2.4 Output Current

The power adaptor shall have regulated DC output current of 0-0.4A.

### 2.2.5 Hold Up Time

The power supply is capable of maintaining the output voltage as specified in section 2.1.1 for more than 10mSec after remove input voltage that measured at full load.

### 2.2.6 Rise Time

The power supply shall have a start-up rise time of less than 100msec to rise to within regulation limits for all DC outputs.

### 2.2.7 Line Regulation

Input voltage nominal and rated current, output voltage regulation ±1%.

### 2.2.8 Load Regulation

Input voltage nominal and 0~rated output current, output voltage regulation ±5%.

### 2.2.9 Output Over Current Protection (OCP)

The output shall be protected against the over current conditions. It shall recover automatically when after removal of the over circuit. Power on reset is not required.

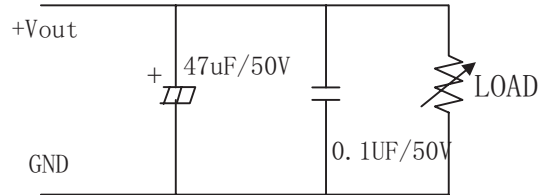
### 2.2.12 Short-Circuit Protection

The power supply shall withstand a continuous output short without damage. The short may be applied before power-up, or after power-up. The power supply shall resume normal operation after the short is removed.

### 2.2.13 Output Ripple and Noise voltage

The specified noise & ripple are measured differently at the supply using maximum loads that are each shunted by 47uF electrolytic capacitor and 0.1uF ceramic capacitor.

Measurements shall be made by using a storage Oscilloscope having a bandwidth of 20MHz. and at nominal AC input voltage.



AC Input Voltage	Rated Output	Ripple & Noise	Bandwidth
100-240VAC	13.5V/0.4A	Less than 120mVp-p	20MHz

## 3. Product and Test Requirements

### 3.1 Withstand Voltage

When AC voltage of 1.0KV is applied for 60 seconds (or 1.2KV is applied for 2 seconds) between the input and output and between the input and housing, the current sensitivity is output and greater than 5mA. After this test, the adaptor shall exhibit no electrical and mechanical abnormalities.

### 3.2 Insulation Resistance

The insulation resistance is more than 10Mohms at between input-plug and output-plug with 500VDC voltage.

### 3.3 Vibration Test

Frequency=10-55-10Hz, Amplitude 1.5mm, X-Y-Z direction, 30 minutes each direction. Under non-operating status, meet specification after test.

### 3.4 Environmental Requirements

#### 3.4.1 Operating and Storage Temperature and Humidity

##### Operating

Operating temperature range: from 0 degree C to 40 degree C

Operating humidity range: from 20%R.H. to 90%R.H..

##### Storage

Storage temperature range: from -20 degree C to 70 degree C

Storage humidity range: from 5%R.H. to 95%R.H.

### **3.4.2 Drop Test**

The adapter shall exhibit no abnormality in mechanical or electrical performance when it is dropped three times to hardwood from a height of 100cm, with each of the three sides of the adapter striking the hardwood each time. Small nicks or slight deformations in the corners of the housing (will be accepted with 5mm Max. of nicks or 5mm Max. diameter of each corner), or cracks not penetrating the inside may be accepted.

### **3.4.3 Tensile strength**

Fixing either of the main body shall make the test or the plug and applying a 20N load to the other part for 60seconds. No connections shall be broken and the cord shall not be removed.

### **3.4.4 Bending test**

The test mode as follows: as shown on figure below, fix the main body and plug of the adapter, and apply a load of 200g to the other ends. Turn the cable connected to each by  $\pm 45$  degrees around the connection. Carry out this process 500 times at a rate of 40 times per minute (a bending of 90 degrees shall be counted as one process) in each direction.

The cable wires shall not be broken after this test.

## **3.6 EMI Standards**

The power supply meets the radiated and conducted emission requirements for EN55022 CLASS B.

## **3.7 EMS Standards**

### **3.7.1 EN61000-4-2 Electrostatic Discharge (ESD)**

Static – discharge test by contact or air should be conducted with Static – discharge teeter, energy storage capacitance of 150pF, and discharge resistance of 330 $\Omega$ .  
8KV air discharge, 4KV contact discharge, Performance Criterion B.

### **3.7.2 EN61000-4-5 Lightning Surge Attachment**

Lightning Surge voltage of differential and command modes shall be applied across AC input lines and across input frame ground.  
Power Line to Line:1KV.  
Performance Criterion B.

## **3.8 Leakage Current**

Leakage Current shall not exceed 0.25mA max.

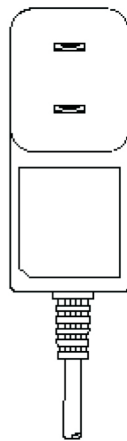
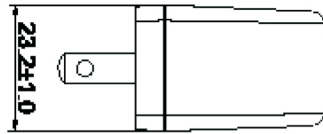
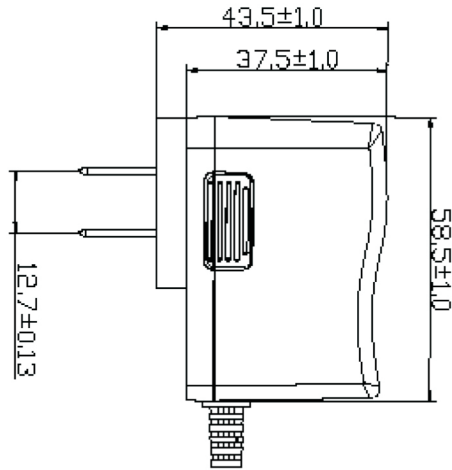
## **3.10 Burn-in**

The power supply will be performed a minimum for 2 hours Burn-in at 40  $\pm 5$  under 80% load to full load.

## **4. Output Cable and Plug**

UL2468, L=1.83M 24AWG DC

### 5. Mechanical



### 6. Label

