



ACBEL POLYTECH INC.



康舒科技股份有限公司  
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# Specification For 120 Watts Adapter Power Supply Model No: ADC027-YEAG Customer ID: 000G Revision: 2.0

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## E. C. List

1.0 Initial Release

2.0 Change Output Current Protection average current of 10.5 Amperes max.



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## 1. Scope

This specification defines electronic performance and characteristic of 120W power supply.

## 2. Input Requirement

### 2.1. Input Voltage Range

MIN	RATED	MAX
90 VAC	100-240 VAC	264 VAC

90 Vac to 264 Vac single phase.

### 2.2. Input Frequency Range

MIN	RATED	MAX
47Hz	50-60Hz	63Hz

### 2.3. Max Input AC Current

Maximum steady state input current shall be less than 2.2 Amperes RMS at 90 VAC and maximum load.

### 2.4. Inrush Current

Cold Start, < 150 Amperes at 240 VAC with maximum load.

Cold Start, < 100 Amperes at 120 VAC with maximum load.

### 2.5. Efficiency (Normal)

The Average Active Mode Efficiency minimum (calculated by testing at 100%, 75%, 50%, and 25% of rated output power and then computing the average of these four values) must be greater than 89%.

Test condition :AC input 115V and 230V (Imax =6.32A)



## 2.6. No Load & Light Load Operation

In addition the device must meet the No Load/Light Load requirements as specified below (measured at 115Vac/60Hz and 230Vac/50Hz):

No Load/Light Load	
Output Load	Maximum Input Power
2W	3.2W
1.5W	2.4W
1.0W	1.7W
0.5W	1.0W
0.25W	0.53W
0W	0.3W

## 3. Output Characteristics

### 3.1. Static Output Characteristics (Vo)

One (1) output shall be provided as defined and measured at the output connector of the supply:

Output Voltage: 19V +5.0%/-5.0%

MIN	Vout(V)	MAX
18.05	19	19.95

### 3.2. Ripple voltage and noise voltage

- 1). Ripple & Noise test: Use 20M Hz bandwidth frequency oscilloscope.
- 2). Add 0.1uF ceramic capacitor / 10uF aluminum capacitors at output connector terminal for Ripple & Noise test.
- 3). Ripple with spike noise  $\leq$  380 mVp-p.



### 3.3.Dynamic Output Characteristics

Load Range(A)		Regulation (V)
MIN.	MAX	
0.63	5.67	18.05~19.95

Note:

- 1). Freq: 1Hz & 5KHz
- 2). Slew Rate: 0.5A/uS , (Duty: 50%)

### 3.4.Turn - on Delay Time

The turn on time shall be less than 3 sec. for all line and load conditions.  
 (Measured from AC on point to the 90% point of the output voltage)

### 3.5. Hold Up Time

For at least 8mS after loss of input voltage measured at 115 VAC and at maximum load.

### 3.6.Output Protection

#### 3.6.1.Over Voltage Protection

The power supply shall provide over voltage protection such that under any single component failure, the output channel shall not exceed 29 volts with a maximum duration of 250 milliseconds.

#### 3.6.2.Short Circuit Protection

The power supply shall be protected such that a short from output to return shall not result in a fire hazard, shock hazard, or damage to the power supply.

#### 3.6.3.Output Current Protection

The power supply shall limit the maximum steady state output current (Steady state > 1 Second) to an average current of 10.5 Amperes.



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### 3.6.4.Over Temperature Protection

No Damage and shutdown. (Latch mode)

## 4. Safety Requirement

### 4.1. Dielectric Strength

Primary to Secondary: 3000VAC 10mA 1minute or 2150 VDC 10mA 1 minute.

Primary to Ground: 3000VAC 10mA 1minute or 2150 VDC 10mA 1 minute.

### 4.2.Insulation Resistance

Primary to Secondary: 50 Meg. Ohms Min., 500VDC

### 4.3. Ground Leakage Current

The power supply ground leakage current shall be less than 3.5mA  
at 240 VAC ,60Hz input.

### 4.4. Safety standard

Comply with UL 60950 – 1 or IEC 60950 – 1 or EN 60950 – 1 .

## 5. Electromagnetic Compatibility

Power supply will be tested to conform with the following emission standards.

### 5.1. EMI Standard

#### 5.1.1.FCC Requirement

Power supply shall comply with the United States Communication  
Commission (FCC) Rules and Regulations, Part 15, Subpart J, Computing  
Devices “Class B limits”.





### 5.1.2.CISPR Requirement

Power supply shall comply with the “Class B” requirements of CISPR 22 Class B limits.

## 5.2.Immunity Standard

### 5.2.1.Immunity Requirement

The adapter shall meet the Immunity requirement based on EN55024 (1998+A1: 2001+A2:2003).

### 5.2.2.Lightning Surge

A 1K volt (applied differential mode), and a 2K volt (applied common mode) Adapter shall be no damaged. (IEC61000-4-5)

### 5.2.3.ESD

The power supply shall meet Contact discharge 8KV and Air discharge 15KV requirement with no damage.(IEC61000-4-2)

## 6. Reliability

### 6.1.Life Time

8760 hours at 80% maximum load and 110/220 Vac, temperature 25°C.

### 6.2.Calculation MTBF

The PSU should not less than 50K hrs at 25 degree C at both 110VAC and 220VAC at 80% maximum load.

## 7. Environment

### 7.1.Operating

Temperature: 0 to 40 degrees centigrade.

Humidity: 20 to 85 percent, non-condensing.



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Altitude: 5,000m above sea level

## 7.2.Shipping AND Storage

Temperature: -20 to +85 degrees centigrade.

Humidity: 5 to 95 percent, non-condensing.

## 7.3.RoHS Requirement

The Adaptor shall be designed to meet RoHS requirement.

# 8. Mechanical Attachment

## 8.1.AC input connector definition

AC inlet: IEC320 C6 or equivalent.

## 8.2.DC output connector definition

DC output connector:

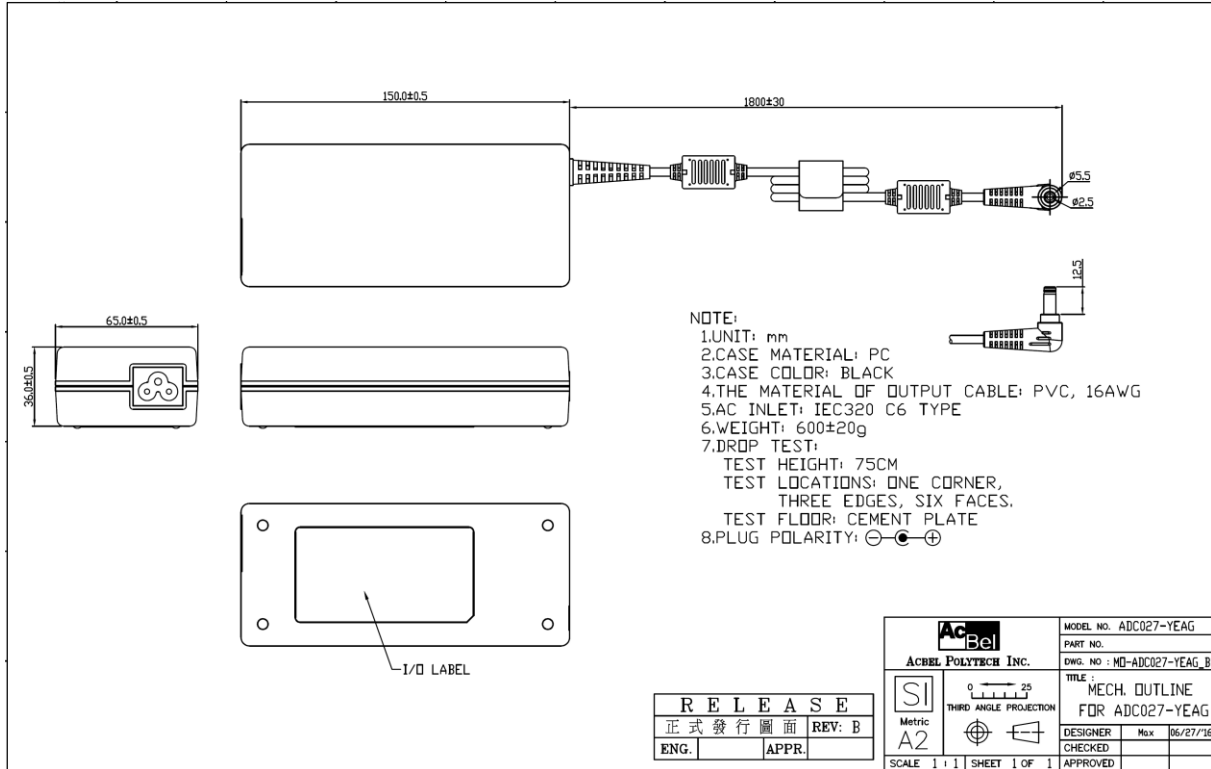


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### 8.3.MO Drawing



### 8.4.I/O Label Drawing

AcBel standard I/O label.

