SPECIFICATION FOR APPROVAL

CUSTOMER:____________________________________________________

DESCRIPTION: SWITCHING POWER SUPPLY REV: (A4)

MODEL NO: HK-AB-050A400-D56 PART NO: HKSC-160727

DESIGNED NO: 160727-0628 DATE: MAR.07th.2020

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<tr>
<th>CUSTOMER APPROVED SIGNATURES</th>
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Ideal Power, 14 Larks Way, Tree Beech Enterprise Park, Gunn, Barnstaple, Devon, England EX32 7NZ
Web: www.idealpower.co.uk email: sales@idealpower.co.uk TEL +44 (0) 845 2603400 Fax +44 (0) 845 2603401
## SPECIFICATION CHANGE HISTORY

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<tr>
<td>A0</td>
<td>16.06.28</td>
<td>新發行承認書.(New issue)</td>
<td>羅珍珍</td>
</tr>
<tr>
<td>A1</td>
<td>17.07.14</td>
<td>更新EMC標準.(Update EMC standards)</td>
<td>羅珍珍</td>
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<tr>
<td>A2</td>
<td>19.02.16</td>
<td>1.追加KC,BSMI,BIS安規及更新銘板. (Add KC,BSMI,BIS on the label marking.) 2.追加當地韓國代理電話. (Add South Korea agent contact no. on label marking.)</td>
<td>陳冬婷</td>
</tr>
<tr>
<td>A3</td>
<td>19.08.27</td>
<td>1.移除PSE安規證書跟LOGO (Remove PSE logo and PSE certificate.) 2.更新安規標準和銘板 (Updating the safety standards and nameplates.)</td>
<td>陳冬婷</td>
</tr>
<tr>
<td>A4</td>
<td>20.03.07</td>
<td>將安規標準改為62368-1和更新銘板.(Change the Safety standard to 62368-1 and update the label.)</td>
<td>陳冬婷</td>
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## SAFETY APPROVAL:

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1.0 INTRODUCTION
This document specifies a switching power supply with a output of +5V, and electronic process. The switching power supply will provide power for technology equipments including electrical business equipment. The adaptor meets the requirement of lead free and RoHS.

2.0 INPUT REQUIREMENTS
2.1 Input Voltage Range: 100(-10%)VAC to 240(+10%)VAC
2.2 Input Frequency Range: 47 Hz to 63 Hz
2.3 Input Power Consumption at no-load: 0.1W Max
2.4 Input In-rush Current: 60A Max
2.5 Input Current: 0.8A Max

3.0 OUTPUT REQUIREMENTS
3.1 Output Voltage: +5V
3.2 Output Regulation: 4.75-5.25V
3.3 Output Load Range: 4.0A
3.4 Output Ripple & Noise: 240mV Max @20MHz bandwidth with 10UF/50V capacitance and 104/50V ceramic capacitor.

4.0 EFFICIENCY: ≥ 83.08% @ average of 25/50/75/100% loads 115V&230VAC input

5.0 LINE REGULATION: ±2% maximum

6.0 HOLD UP TIME: 10ms Min at 110VAC full load.

7.0 TURN ON TIME: 2S Max at 110VAC full load.
8.0 TEMPERATURE COEFFICIENT: 0.05%/°C

9.0 DIELECTRIC STRENGTH (Hi-Pot) TEST

Primary to Secondary: AC 3.0 KVrms, 4mA, 1 minute for type, 2 second for production test.

10.0 INSULATION RESISTANCE

Primary to secondary: 50M OHM to 500VDC.

11.0 PROTECTION

11.1 Input Protection

The switching power supply has a 2 Amps inner current fuse to protect itself.

11.2 Output Protection

11.2.1 Output Current:

Overload conditions shall decrease the output voltage. Removal of an output overload shall provide automatic recovery for the output voltage.

11.2.2 Short Circuit Protection: Auto Recovery.
12.0 ENVIRONMENTAL CONDITIONS

The switching power supply can withstand the following environmental conditions:

12.1 Storage Temperature: -20°C ~ +70°C
   Relative Humidity: 10% ~ 95%

12.2 Operation Temperature: 0°C ~ 40°C
   Relative Humidity: 10% ~ 95%

13.0 EMI / EMC

The switching power supply has approved by the following standards:

- FCC PART 15 Class B
- AS/NZS CISPR 32: 2015
- EN 55032: 2015, Class B
- CISPR 32: 2012 (Ed 2.0)
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- IEC 61000-4-2: 2008
- IEC 61000-4-4: 2012
- IEC 61000-4-5: 2014
- IEC 61000-4-6: 2013
- IEC 61000-4-8: 2009
- K00022(2009-12) K00024 (2009-12)
- CNS 13438 (95年完整版)
- GB17625.1-2012; GB 9254-2008

14.0 RELIABILITY AND QUALITY CONTROL

14.1 Burn-in

The burn-in test will be performed at least 2 hours at 40 centigrade degrees under full load condition.

14.2 MTBF

When the operation is complying with this specification, the switching power supply's MTBF will be 50,000 hours at 25 centigrade degrees.

15.0 SAFETY

The switching power supply has approved by the following safety standards:

- UL 62368-1, Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements
- CSA C22.2 NO. 62368-1-14,Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements
- EN 62368-1:2014+A11
- BS EN 62368-1:2014+A11
- AS/NZS 62368.1:2018
- GB4943.1-2011
- CNS 14336-1(99年版)
- K 60950-1(2011-12)
16. OVERALL DRAWING

UNIT: mm

Non-strengthen ribs

OD4.0
Safety Marking

Non-strengthen ribs

AWG#16
UL1185

1200±30

Ø5.5±0.1
Ø2.1±0.1
15±1
28±1
30±10

12±0.5
17. PACKING

17.1 Inner Box

UNIT: mm

- **Label:** Normal BOX
- **Label:** Corrugated BOX

- **Length:** 120
- **Width:** 60
- **Height:** 52

**NOTICE:**
Its probably different from the white box of the sample and the figure dimension. The white box is used to pack during product.

注意: 樣品使用的小白盒尺寸可能與此圖面尺寸不同, 此圖面尺寸是用于生産時的包裝.
17. PACKING

17.2 Carton

UNIT: mm
### 18. MARKING

<table>
<thead>
<tr>
<th>UNIT:</th>
<th>mm</th>
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200# CPC 合成紙+上光  NAME-PLATE:WHITE CHARACTERS BLACK BACKGROUND.

#### SWITCHING POWER SUPPLY

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**NAME-PLATE:** WHITE CHARACTERS BLACK BACKGROUND.

month  
year  
made in China by Hon-kwang

33.6\(\pm0.0\)

3

73.6\(\pm0.2\)

**INPUT:** 100-240V 50/60Hz 0.8A  
**OUTPUT:** 5.0V 4.0A 20.0W  
**MODEL NO.:** HK-AB-050A400-D56  
**MADE IN CHINA**  
**BY:** Hon-kwang

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