

# Switching Power Adapter

## 24Volts / 10,4Amps

- Input Universal 100 - 240 Vac / 50 - 60 Hz Input, without any slide switch.
- Output +24 V / 0 ~ 10,4A
- Case Dimension 204(L) \* 94 (W) \* 43.5(H) mm
- Efficiency Eff (av) ≥88%
- Safety CUL / UL / GS / BSMI / PSE
- EMI CE / FCC Class B, Conduction & Radiation Met.
- Protection OVP (Over Voltage Protection), SCP (Short Circuit Protection), OCP (Over Current Protection), OTP (Over Temperature Protection)
- Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.
- Meet DoE Level VI/ ErP ( Stage 2 ) / GEMS / NRCan / CEC.

| Item | Value   Unit   Remarks |
|------|------------------------|
|------|------------------------|

### 1. Input

|                   |                                                      |
|-------------------|------------------------------------------------------|
| Voltage           | Universal 100~240Vac, single phase                   |
| Frequency         | 50 - 60 Hz                                           |
| Current           | 3.3A Max.                                            |
| Inrush Current    | 120 A Max. / 230Vac (Cold start at 25 °C, full load) |
| Efficiency        | Eff (av) ≥88% (At 115 Vac & 230 Vac)                 |
| Power Consumption | Pi ≤ 0.21 W ( At No load)                            |
| Power Factor (PF) | Pi ≥ 0.9 ( At No load)                               |

$$\text{Eff (av)} = \frac{E1 + E2 + E3 + E4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load  
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

### 2. Output

| DC output      |                                |
|----------------|--------------------------------|
| Voltage        | +24V ±5%                       |
| Current        | 10,4A Max.                     |
| Regulation     | 11.4Vmin. ~ 12Vtyp. ~12.6Vmax. |
| Ripple & Noise | 240 mVpp Max.                  |
| Total Power    | 240W Max.                      |

Remark : For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1µF multilayer Cap. and a Low ESR Electrolytic Cap. (47 µF ) at output connector terminals. (At nominal line voltage, Full Load)

### 3. Protection

|                                   |                   |
|-----------------------------------|-------------------|
| Over Voltage Protection (OVP)     | V out *150%(Max)  |
| Short Circuit Protection (SCP)    | Shut down.        |
| Over Current Protection(OCP)      | I out *150%( Max) |
| Over Temperature Protection (OTP) | Latch protection  |

Remark : When Short Circuit Protection or Over Current Protection is activated,the power supply will shutdown automatically. Once the abnormal condition resulting in the failure being removed, the power supply will restart accordingly. When Over Voltage Protection is activated, the power supply will shutdown.

#### 4. Safety EMI and EMC Requirement

|                          |                            |                                               |
|--------------------------|----------------------------|-----------------------------------------------|
| Safety Requirement       |                            |                                               |
| a. Safety                | CUL / UL / GS / BSMI / PSE |                                               |
| b. Dielectric Strength   | 10mA Max. Cut off current. |                                               |
| 1                        | Primary to Secondary       | 3000Vac for 1 Minute                          |
| 2                        | Primary to Frame Ground    | 1500Vac for 1 Minute                          |
| c. Insulation Resistance |                            |                                               |
| 1                        | Primary to Secondary       | 10 M ohm for 500Vdc                           |
| 2                        | Primary to Frame Ground    | 10 M ohm for 500Vdc                           |
| EMI Requirement          |                            | CE / FCC Class B, Conduction & Radiation Met. |
| Leakage Current          |                            | Less than 3.5mA                               |

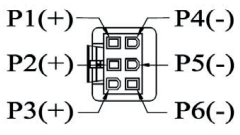
#### 5. Operation and Environment Performance

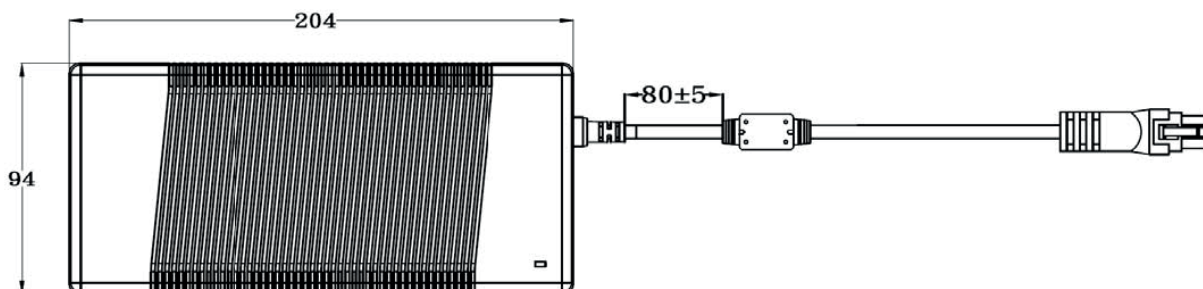
|                                |           |                |
|--------------------------------|-----------|----------------|
| Temperature Range              |           |                |
|                                | Operating | +0°C ~ +40° C  |
|                                | Storage   | -20°C ~ +80° C |
| Humidity Range(Non-condensing) |           |                |
|                                | Operating | 20% ~ 80% RH   |
|                                | Storage   | 10% ~ 90% RH   |
| Cooling                        |           | By natural air |

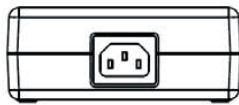
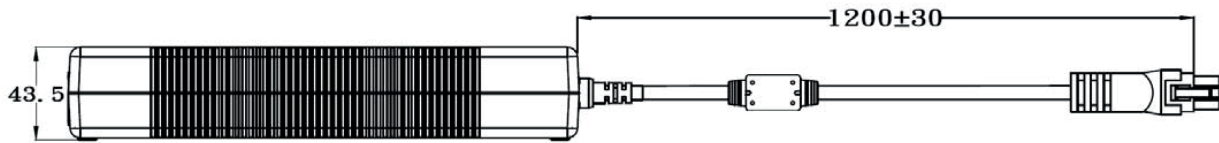
#### 6. M.T.B.F.

300000Hrs.(Calculated Hours at 25 , By Telcordia SR-332)

#### 7. Mechanical

|                       |                                                                                    |                                                                                       |
|-----------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Weight                | 990 g Typical                                                                      |  |
| Cable Type            | Black UL2468 16AWG*6C<br>( Wire + Plug )<br>Plug : 6Pin Housing (Molex 39-01-2060) |                                                                                       |
| Cable Length          | 1200mm                                                                             |                                                                                       |
| Case Dimension        | 204mm(L)*94mm(W)*43.5mm(H)                                                         |                                                                                       |
| Material Flammability | UL 94V-0                                                                           |                                                                                       |
| External Apperance    | As drawing below ( Scale - mm )                                                    |                                                                                       |





FRONT-VIEW

#### 8. Spec. Label

|                 |                                            |
|-----------------|--------------------------------------------|
| Label Materials | Metalized Polyester Label ( Silver Gloss ) |
| Color           | Black Background with Silver Printing      |
| Dimension       | 52mm(L)*137mm(W)+/-0.1mm                   |
| Thickness       | 75#                                        |

100%



"XXX"

Label supplier's code

It is accurate that the number  
of words depends on the real  
finished product

**Line Regulation Test**
**Test Result:**

| Test Condition     | Spec.           | Reading 1 | Reading 2 | Reading 3 |
|--------------------|-----------------|-----------|-----------|-----------|
| 90Vac / 50 % Load  | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 115Vac / 50 % Load | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 132Vac / 50 % Load | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 180Vac / 50 % Load | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 230Vac / 50 % Load | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 264Vac / 50 % Load | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |

**Efficiency Test**
**Test Result:**

| Test Condition | Spec.     | Reading 1 | Reading 2 | Reading 3 |
|----------------|-----------|-----------|-----------|-----------|
| 115Vac / 60Hz  | 88 % Min. | 90.12%    | 89.95%    | 90.09%    |
| 230Vac / 50Hz  | 88 % Min. | 91.23%    | 91.03%    | 90.09%    |

$$\text{Eff (av)} = \frac{E1 + E2 + E3 + E4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load  
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

**Load Regulation Test**
**Test Result:**

| 9.07 V              | Spec.           | Reading 1 | Reading 2 | Reading 3 |
|---------------------|-----------------|-----------|-----------|-----------|
| 115Vac / 0 % Load   | 11.4 V ~ 12.6 V | 12.188V   | 12.176V   | 12.208V   |
| 115Vac / 50 % Load  | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 115Vac / 100 % Load | 11.4 V ~ 12.6 V | 11.771V   | 11.736V   | 11.811V   |
| 230Vac / 0 % Load   | 11.4 V ~ 12.6 V | 12.188V   | 12.176V   | 12.208V   |
| 230Vac / 50 % Load  | 11.4 V ~ 12.6 V | 11.981V   | 11.958V   | 12.011V   |
| 230Vac / 50 % Load  | 11.4 V ~ 12.6 V | 11.770V   | 11.735V   | 11.811V   |

**Ripple & Noise Test**
**Test Result:**

| Test Condition      | Spec.       | Reading 1 | Reading 2 | Reading 3 |
|---------------------|-------------|-----------|-----------|-----------|
| 115Vac / 100 % Load | 240mVpp Max | 56.9mV    | 56.2mV    | 59.4mV    |
| 230Vac / 100 % Load | 240mVpp Max | 55.3mV    | 54.7mV    | 64.1mV    |

**Inrush Current**
**Test Result:**

| Test Condition      | Spec.      | Reading 1 | Reading 2 | Reading 3 |
|---------------------|------------|-----------|-----------|-----------|
| 240Vac / 100 % Load | 120 A Max. | 83.6A     | 86.7A     | 85.8A     |

**Over Voltage Protection**
**Test Result:**

| Test Condition      | Spec.          | Reading 1 | Reading 2 | Reading 3 |
|---------------------|----------------|-----------|-----------|-----------|
| 115Vac / 100 % Load | Vout*150% Max. | 131%      | 130%      | 133%      |
| 230Vac / 100 % Load | Vout*150% Max. | 131%      | 129%      | 132%      |

**Over Current Protection**
**Test Result:**

| Test Condition      | Spec.          | Reading 1 | Reading 2 | Reading 3 |
|---------------------|----------------|-----------|-----------|-----------|
| 115Vac / 100 % Load | Vout*150% Max. | 126%      | 129%      | 130%      |
| 230Vac / 100 % Load | Vout*150% Max. | 127%      | 129%      | 130%      |

**Short Circuit Protection**
**Test Result:**

| Test Condition      | Spec.     | Reading 1 | Reading 2 | Reading 3 |
|---------------------|-----------|-----------|-----------|-----------|
| 115Vac / 100 % Load | Shut down | OK        | OK        | OK        |
| 230Vac / 100 % Load | Shut down | OK        | OK        | OK        |

**Input Power Consumption(No Load)**
**Test Result:**

| Test Condition     | Spec.        | Reading 1 | Reading 2 | Reading 3 |
|--------------------|--------------|-----------|-----------|-----------|
| 115Vac / 0 % Load  | $\leq 0.21W$ | 0.127W    | 1.125W    | 0.126W    |
| 2230Vac / 0 % Load | $\leq 0.21W$ | 0.182W    | 0.183W    | 0.185W    |

**Power Factor**
**Test Result:**

| Test Condition     | Spec.      | Reading 1 | Reading 2 | Reading 3 |
|--------------------|------------|-----------|-----------|-----------|
| 115Vac / 0 % Load  | $\geq 0.9$ | 0.991     | 0.990     | 0.990     |
| 2230Vac / 0 % Load | $\geq 0.9$ | 0.961     | 0.961     | 0.961     |



## Adapter Technology Co., Ltd.

### Efficiency Test Report

|    |                             |                              |
|----|-----------------------------|------------------------------|
| A. | Model Number                | : ATS250T-P120 (12.0V / 20A) |
| B. | DC Power Cord               | : UL2464 , 16AWG*6C , 1.2M   |
| C. | Average Efficiency          | :                            |
|    | DoE LEVEL VI                | 88%                          |
| D. | NO Load Power Consumption : |                              |
|    | DoE LEVEL VI                | 0.21W max.                   |
| E. | Testing Dequiptment         | :                            |
|    | 1. AC Power Source          | : " Chroma " 61604           |
|    | 2. Electronic Load          | : " PRODIGIT " 3356          |
|    | 3. Power Meter              | : "YOKOGAWA " WT310          |
|    | 4. Digital Meter            | : " FLUKE " 45               |
| F. | AC Input Voltage            | : 115Vac/60Hz                |

| Load Conditions          | 100%* I <sub>0</sub> | 75%* I <sub>0</sub> | 50%* I <sub>0</sub> | 25%* I <sub>0</sub> | 0%* I <sub>0</sub> |
|--------------------------|----------------------|---------------------|---------------------|---------------------|--------------------|
| Reported Quantitv        |                      |                     |                     |                     |                    |
| Rms Output Current(mA)   | 20.00A               | 15.00A              | 10.00A              | 5.00A               | 0A                 |
| Rms Output Voltage(V)    | 11.762V              | 11.868V             | 11.976V             | 12.082V             | 12.187V            |
| Active Output Power(W)   | 235.24W              | 178.02W             | 119.76W             | 60.41W              | 0.00W              |
| Rms Input Voltage(V)     | 115V                 | 115V                | 115V                | 115V                | 115V               |
| Rms Input Current(A)     | 2.333A               | 1.746A              | 1.167A              | 0.613A              | 0.088A             |
| Rms Input Power(W)       | 264.52W              | 197.48W             | 131.07W             | 67.09W              | 0.13W              |
| Voltage T.H.D.(%)        | 0.26                 | 0.24                | 0.23                | 0.21                | 0.19               |
| True Power Factor        | 0.991                | 0.987               | 0.978               | 0.952               | 0.013              |
| Power Consumed by UUT(W) | 29.28W               | 19.46W              | 11.31W              | 0.96W               | 0.13W              |
| Efficiency               | 88.93%               | 90.15%              | 91.37%              | 90.04%              | *                  |
| Average Efficiency       | 90.12%               |                     |                     |                     | *                  |

G. AC Input Voltage : 230Vac/50Hz

| Load Conditions          | 100%* I <sub>0</sub> | 75%* I <sub>0</sub> | 50%* I <sub>0</sub> | 25%* I <sub>0</sub> | 0%* I <sub>0</sub> |
|--------------------------|----------------------|---------------------|---------------------|---------------------|--------------------|
| Reported Quantity        |                      |                     |                     |                     |                    |
| Rms Output Current(mA)   | 20.00A               | 15.00A              | 10.00A              | 5.00A               | 0A                 |
| Rms Output Voltage(V)    | 11.765V              | 11.840V             | 11.978V             | 12.084V             | 12.189V            |
| Active Output Power(W)   | 235.30W              | 177.60W             | 119.78W             | 60.42W              | 0.00W              |
| Rms Input Voltage(V)     | 230V                 | 230V                | 230V                | 230V                | 230V               |
| Rms Input Current(A)     | 1.174A               | 0.895A              | 0.618A              | 0.359A              | 0.135A             |
| Rms Input Power(W)       | 259.86W              | 195.06W             | 130.68W             | 65.91W              | 0.18W              |
| Voltage T.H.D.(%)        | 0.17                 | 0.16                | 0.16                | 0.17                | 0.15               |
| True Power Factor        | 0.961                | 0.947               | 0.917               | 0.796               | 0.006              |
| Power Consumed by UUT(W) | 24.56W               | 17.46W              | 10.90W              | 0.96W               | 0.18W              |
| Efficiency               | 90.55%               | 91.05%              | 91.66%              | 91.67%              | *                  |
| Average Efficiency       | 91.23%               |                     |                     |                     | *                  |

Tester : Wentsai

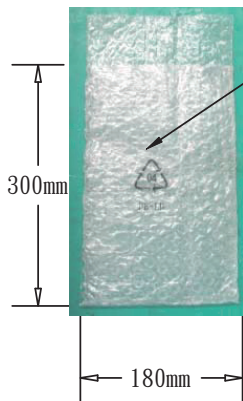


- ① 阿达特提供:6PIN 胶芯 (Molex 39-01-2060) 料号:39E02-H106加母端子 (Molex 45750-3111) 料号: R36A151-022\*6PCS, 外模P-A34 骺模 (二次成型), 用料PVC60P 黑色
- ② SR-684 骺模, 用料PVC60P 黑色, 吊重:1米/20磅/60秒
- ③ UL 2464 16AWG(0.16\*65)\*6C(红\*3C, 黑\*3C) 过粉线 BK 亮 OD:8.3 截線長度:1280+10/-0
- ④ PE 无鐵芯 紮帶 14CM 黑色
- ⑤ 铁芯规格:16\*28.5\*10.5, 外模T-A367号模, 用料PVC 60P 黑色
- ⑥ 3. 2机板端子\*2Pcs (进文:P3200-T)
- ⑦ 热缩套管(BK): $\phi 4*20$  2Pcs
- ⑧ 單位:MM

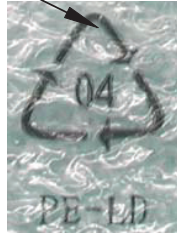
|          |         |          |        |
|----------|---------|----------|--------|
| 1.0mm以下  | ±0.1mm  | 15.0mm以下 | ±0.6mm |
| 2.0mm以下  | ±0.15mm | 20.0mm以下 | ±0.8mm |
| 3.0mm以下  | ±0.20mm | 30.0mm以下 | ±1.0mm |
| 10.0mm以下 | ±0.5mm  | 30.0mm以上 | ±1.2mm |

| Housing | P1 | P2 | P3 | P4 | P5 | P6 |
|---------|----|----|----|----|----|----|
| 線材      | 紅  | 紅  | 紅  | 黑  | 黑  | 黑  |

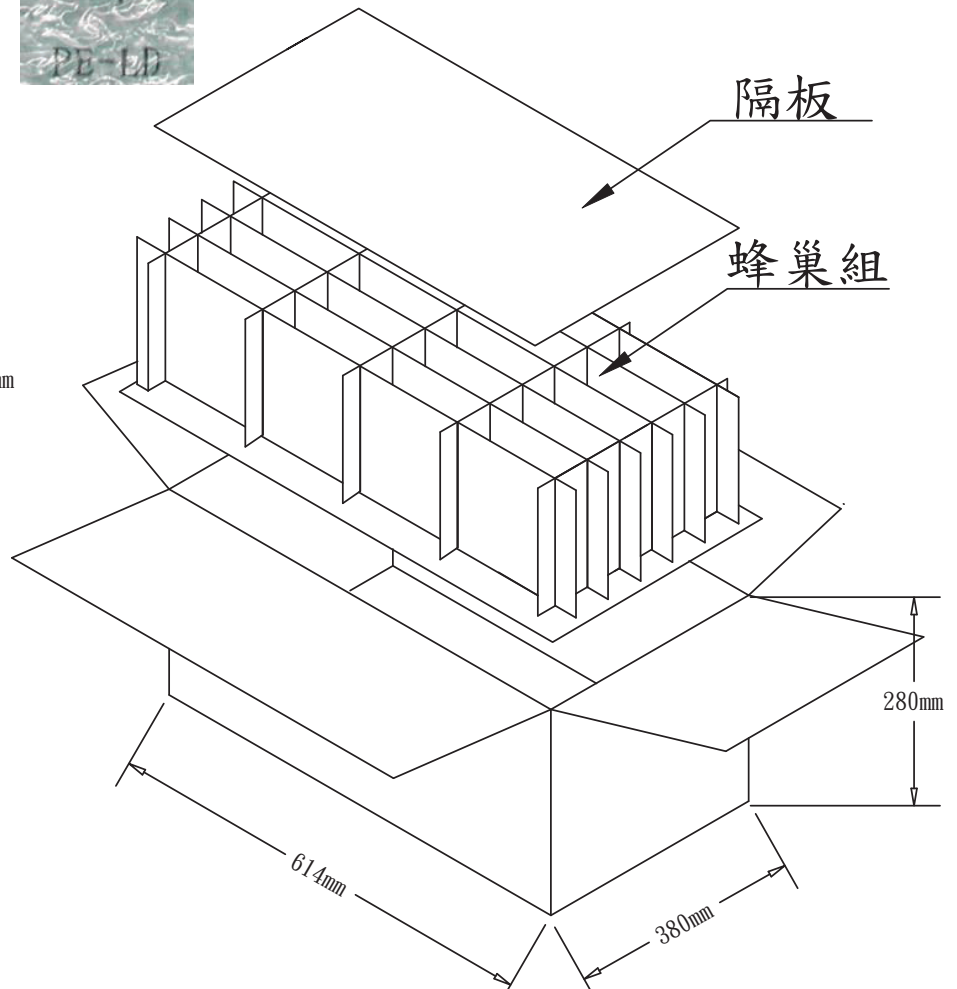
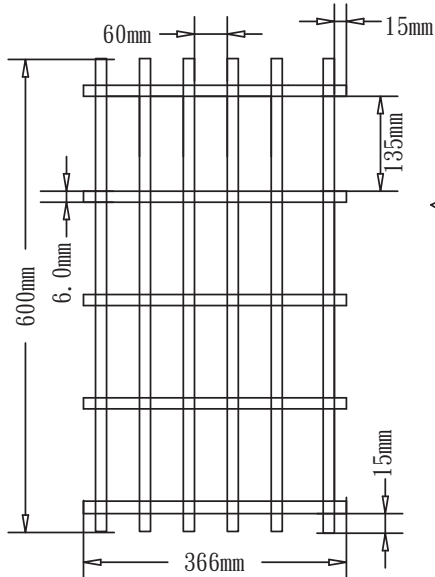
|          |               |    |            |
|----------|---------------|----|------------|
| 料號       | X44S105120106 |    |            |
| 客戶       | 阿達特           | 制圖 | 陶勝英        |
| 頁數       | 01            | 審核 |            |
|          |               | 批准 |            |
| 泰岳電子有限公司 |               |    |            |
| 圖號       | ADT-5374      | 日期 | 2018/06/28 |



汽泡袋中間  
印環保標示



| REVISIONS |     |             |          |          |
|-----------|-----|-------------|----------|----------|
| SHOW      | REV | DESCRIPTION | DATE     | APPROVED |
| △         | A   | 初版制作        | 15/11/07 |          |
|           |     |             |          |          |
|           |     |             |          |          |



## PIS250W0002 包裝(FOR 250W)-環保雙面氣泡袋-刀卡-20

- |                   |                                                       |     |      |
|-------------------|-------------------------------------------------------|-----|------|
| <u>9550030401</u> | 1. 隔板: 600(L)*366(W)*6mm                              | K=K | 2/20 |
|                   | 2. 數量: 4*5=20PCS                                      |     |      |
| <u>9520050601</u> | 3. 外箱: 614(L)*380(W)*280(H)mm                         | K=K | 1/20 |
| <u>9560031001</u> | 4. 5刀卡: 600(L)*250(W)*6mm (邊分)                        | K=K | 6/20 |
| <u>9560031101</u> | 5. 6刀卡: 366(L)*250(W)*6mm (邊分)                        | K=K | 5/20 |
| <u>9540005101</u> | 6. 環保雙面氣泡袋: 300(L)*180(W)*47mm 無色透明, 中間位置須加印環保標示. 1/1 |     |      |
|                   | 7. 將成品放入氣泡袋中, LABEL朝向環保標示, SR部份朝上裝入蜂巢內, 所有包裝需統一.      |     |      |
|                   | 8. 外箱標示為外徑尺寸, 以上材料需符合RoHS標準.                          |     |      |