

# 納 入 仕 様 書

アールエスコンポーターネッツリミテッド 御中

品名:スイッチング AC アダプター

型番: TW-2427P

御 承 認 欄

平成 年 月 日

**アイコー電子株式会社**

〒101-0021 東京都千代田区外神田 3 - 5 - 2

TEL.03-3251-1335 FAX.03-3251-1327

<http://www.aikoh-d.co.jp>



<p style="text-align: center;"><b>64.8W</b> Switching Power Adapter <b>SPECIFICATION</b></p>
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**Model No.** : **STD-2427P (Level V)**

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**Description** : **24.0Volts / 2.7Amps**

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**Part No.** : **RXTD2427P415215**

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**Version** : **A1**

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**Date** : **09-Mar.-2011**

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<b>Approved</b>	<b>Checked</b>	<b>Prepared</b>





## 1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ **Output** : +24.0V / 0~2.7A
- ◆ **Case Dimension** : 115 (L) \*53 (W) \* 38 (H) mm
- ◆ **Efficiency** : Eff (av)  $\geq$  87% Min
- ◆ **Safety** : UL / cUL / CB / GS / PSE / BSMI / RCM / CCC
- ◆ **EMI** : CE / FCC Class B ; Conduction & Radiation Met.
- ◆ **Protection** : OVP (Over Voltage Protection) 、 SCP (Short Circuit Protection) 、 OCP (Over Current Protection)
- ◆ High frequency design , less power consumption.
- ◆ Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.
- ◆ Meet Energy Star V / Erp ( Stage 2 ) / MEPS V

## 2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	47 ~ 63 Hz
2.3 Current	1.4A Max.
2.4 Inrush Current	60A Max. / 230Vac (Cold start at 25 °C , full load)
2.5 Efficiency	Eff (av) $\geq$ 87% Min (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi $\leq$ 0.5 W ( At 230Vac & No load)

$$\text{※Eff (av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

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

## 3. Output :

3.1 DC Output	Voltage	+24.00V $\pm$ 5%
	Current	2.7A Max.
	Regulation	22.80Vmin. ~ 24.00Vtyp. ~ 25.20Vmax.
	Ripple & Noise	200mV Max.
	Total Power	64.8W Max.

**Remark :** For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1 $\mu$ F multilayer Cap. and a Low ESR Electrolytic Cap. (10  $\mu$ F) at output connector terminals. (At nominal line voltage, full load)



## 4. Protection :

4.1 Over Voltage Protection (OVP)	V out *(110%~150%)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	I out *(105%~180%)

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 latch .

## 5. Safety 、 EMI and EMC Requirement :

### 5.1 Safety Requirement

a. Safety : UL / cUL / CB / GS / PSE / BSMI / RCM / CCC

b. Dielectric Strength : Cut off current 10mA

(1)	Primary to Secondary	1800Vac 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

5.2 EMI Requirement : CE / FCC Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 3.5mA

5.4 Grounding Test : Resistance 0.1ohm Max. @ 25A

## 6. Operation and Environment Performance :

### 6.1 Temperature Range

Operating	+ 0°C ~ + 40°C
Storage	- 20 °C ~ + 80°C

### 6.2 Humidity Range(Non-condensing)

Operating	20% ~ 80% RH
Storage	10% ~ 90% RH

6.3 Cooling : By natural air.

7. M.T.B.F. : 50,000 Hrs.( At 25°C , By MIL-HDBK-217F )



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## 8. Mechanical :

8.1 Weight : 288 g Typical

8.2 Cable Type : Black UL1185 AWG18

( Wire + Plug )

Plug :  $\phi 5.5 * \phi 2.1 * 9.5 \text{mm}$

( Tuning Fork & Cannelure )

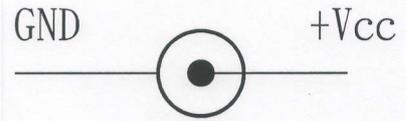
Cable Drawing No. : ADT-1723

8.3 Cable Length : 1500mm

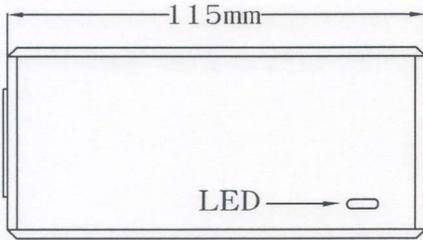
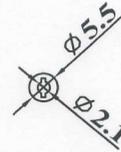
8.4 Case Dimension : 115mm(L)\*53mm(W)\*38mm(H)

8.5 Material Flammability : UL 94V-0

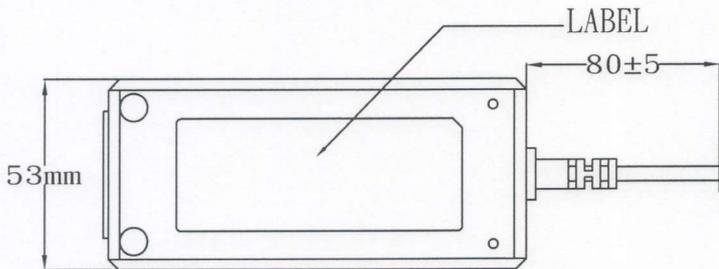
8.6 External Apperance : As drawing below ( Scale  $\rightarrow$  mm )



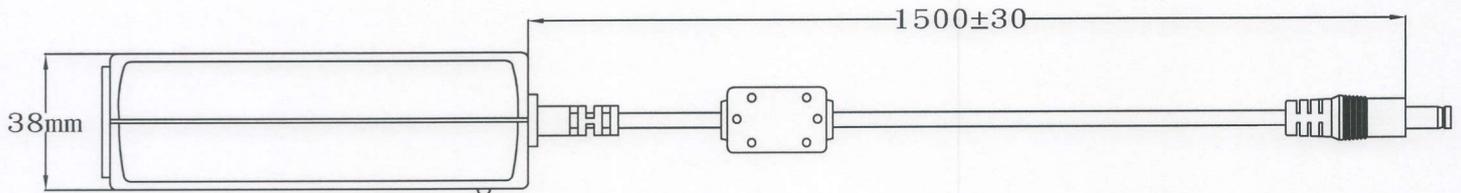
Output Cable Plug Pin Assignment



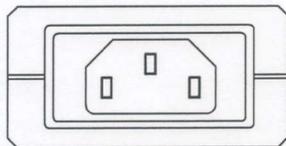
TOP-VIEW



BOTTOM-VIEW



SIDE-VIEW



FRONT-VIEW



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8.7 Spec. Label Materials : Metalized Polyester Label ( Silver Gloss )  
 Color : Silver Background with Black Printing  
 Label Dimension : 70.8mm(L)\*40.4mm(W)+/-0.1mm  
 Label Thickness : 0.1mm

100%

**TW-2427P**  
 AC ADAPTER 电源适配器  
 MODEL(型号): STD-2427P  
 製造元 ADAPTER TECH.  
 INPUT(输入/輸入): 100-240V~47-63Hz 1.4A MAX.  
 OUTPUT(输出/輸出): 24V 2.7A LPS

For use with information technology equipment. Apparate må Kun tilkoples jordnet stikkontakt	FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT
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EFFICIENCY LEVEL   
 FOR INDOOR USE ONLY

R33154

(适用于资讯类产品) LISTED I.T.E. POWER SUPPLY 60J E22573

JET AIKOH ELECTRONICS D/C:1110  
 MADE IN CHINA  
 I/P: AC 100-240V 50/60Hz 130VA-168VA 1.4A  
 O/P: DC 24V 2.7A  
 販売元 アイコー電子株式会社

"XXX"

Label supplier's code.  
 It is accurate that the number of words depends on the real finished product.

ID NO. "X"

Label manufacturer's code.  
 It is accurate that the number of words depends on the real finished product.

200%

**TW-2427P**  
 AC ADAPTER 电源适配器  
 MODEL(型号): STD-2427P  
 製造元 ADAPTER TECH.  
 INPUT(输入/輸入): 100-240V~47-63Hz 1.4A MAX.  
 OUTPUT(输出/輸出): 24V 2.7A LPS

For use with information technology equipment. Apparate må Kun tilkoples jordnet stikkontakt	FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT
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EFFICIENCY LEVEL   
 FOR INDOOR USE ONLY

R33154

(适用于资讯类产品) LISTED I.T.E. POWER SUPPLY 60JJ E225703

JET AIKOH ELECTRONICS D/C:1110  
 MADE IN CHINA  
 I/P: AC 100-240V 50/60Hz 130VA-168VA 1.4A  
 O/P: DC 24V 2.7A  
 販売元 アイコー電子株式会社

## Label Part No.: 9443026150



## A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	22.8V ~ 25.2 V	23.91 V	23.89 V	23.86 V
115Vac / 50 % Load	22.8V ~ 25.2 V	23.91 V	23.89 V	23.86 V
132Vac / 50 % Load	22.8V ~ 25.2 V	23.91 V	23.89 V	23.86 V
180Vac / 50 % Load	22.8V ~ 25.2 V	23.9 V	23.87 V	23.85 V
230Vac / 50 % Load	22.8V ~ 25.2 V	23.9 V	23.87 V	23.85 V
264Vac / 50 % Load	22.8V ~ 25.2 V	23.9 V	23.87 V	23.85 V

## B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	87 % Min.	87.21 %	87.19 %	87.15 %
230Vac	87 % Min.	87.32 %	87.23 %	87.2 %

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

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

## C. Load Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	22.8V ~ 25.2 V	24.07 V	24.03 V	24.01V
115Vac / 50 % Load	22.8V ~ 25.2 V	23.91 V	23.89 V	23.86 V
115Vac / 100 % Load	22.8V ~ 25.2 V	23.74 V	23.72V	23.69V
230Vac / 0 % Load	22.8V ~ 25.2 V	24.07 V	24.04V	24.02V
230Vac / 50 % Load	22.8V ~ 25.2 V	23.9 V	23.87V	23.85V
230Vac / 100 % Load	22.8V ~ 25.2 V	23.73V	23.71V	23.70V



## D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	200mV Max.	86 mV	83 mV	84 mV
230Vac / 100 % Load	200mV Max.	80 mV	81 mV	82 mV

## E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 100 % Load	60A Max	47A	46.2A	46.7A

## F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Iout*(105%~180%)	148%	146%	145%
230Vac / 100 % Load	Iout*(105%~180%)	138%	139%	137%

## G. Short Circuit Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Auto Recovery	OK	OK	OK
230Vac / 100 % Load	Auto Recovery	OK	OK	OK

## H. Input Power Consumption(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	$\leq 0.5$ W	0.42 W	0.42 W	0.4 W



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## Efficiency Test Report

- A. Model Number : STD-2427P ( 24V / 2.7A )
- B. DC Power Cord : UL1185 , 18AWG , 1.5M
- C. Average Efficiency :
- Energy Star V : 87% min.
- Erp ( Stage 2 ) : 87% min.
- MEPS V : 87% min.
- D. NO Load Power Consumption :
- Energy Star V : 0.5W max.
- Erp ( Stage 2 ) : 0.5W max.
- MEPS V : 0.5W max.
- E. Testing Dequipment :
1. AC Power Source : " Zentech " 2700M-10
2. Electronic Load : " PRODIGIT " 3311C
3. Power Meter : " Zentech " 2100
4. Digital Meter : " FLUKE " 45
- F. AC Input Voltage : 115Vac/60Hz

Reported Quantity	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>
Rms Output Current(mA)	2700mA	2025mA	1350mA	675mA	0mA
Rms Output Voltage(V)	23.643V	23.744V	23.845V	23.914V	24.026V
Active Output Power(W)	63.84W	48.08W	32.19W	16.14W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	0.908A	0.707A	0.501A	0.277A	0.016A
Rms Input Power(W)	72.80W	54.40W	36.60W	18.40W	0.18W
Voltage T.H.D.(%)	0.57%	0.51%	0.42%	0.28%	0.11%
True Power Factor	0.539	0.517	0.481	0.440	0.111
Power Consumed by UUT(W)	8.96W	6.32W	4.41W	2.26W	0.18W
Efficiency	87.69%	88.39%	87.95%	87.73%	*
Average Efficiency	87.94%				*

- G. AC Input Voltage : 230Vac/50Hz

Reported Quantity	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>
Rms Output Current(mA)	2700mA	2025mA	1350mA	675mA	0mA
Rms Output Voltage(V)	23.643V	23.744V	23.845V	23.914V	24.026V
Active Output Power(W)	63.84W	48.08W	32.19W	16.14W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.555A	0.429A	0.297A	0.163A	0.024A
Rms Input Power(W)	72.00W	54.40W	36.30W	18.57W	0.25W
Voltage T.H.D.(%)	0.50%	0.41%	0.32%	0.23%	0.11%
True Power Factor	0.432	0.422	0.408	0.365	0.057
Power Consumed by UUT(W)	8.16W	6.32W	4.11W	2.43W	0.25W
Efficiency	88.66%	88.39%	88.68%	86.92%	*
Average Efficiency	88.16%				*

Tester : DEN



# Adapter Technology Co., Ltd.

Instruction sheet Dimension : 90.0mm(L)\*65.0mm(W)+/-0.1mm

100%



警告

間違った使い方をすると機器を故障させたり、発熱、発火の恐れがあります。  
下記の事項を必ずお守り下さい。

- ご使用前に必ず電圧・極性等の確認をして下さい。
- 定格の範囲以内でご使用下さい。
- 高い信頼性を必要とする用途(精密機器、医療機器等)には不向きです。
- 屋内専用です。水等をかけないでください。
- 濡れた手で触ったり、湿気の多い所で使用しないで下さい。
- ショート、分解、改造は絶対しないで下さい。
- バッテリーの充電には絶対使用しないで下さい。
- ご使用時以外はコンセントより抜いて下さい。
- ご使用上の不注意により発生した事故等は責任及び保証対象外とさせていただきます。

※ 国内AC100Vのみの保証とさせていただきます。  
※ 仕様は予告なく変更する場合があります。

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150%



警告

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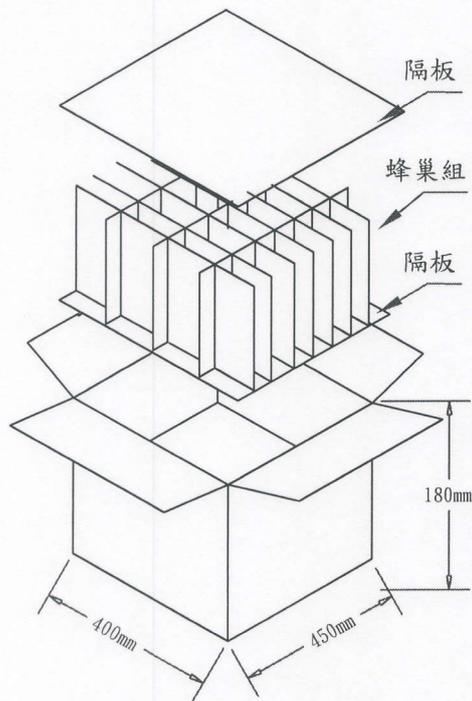
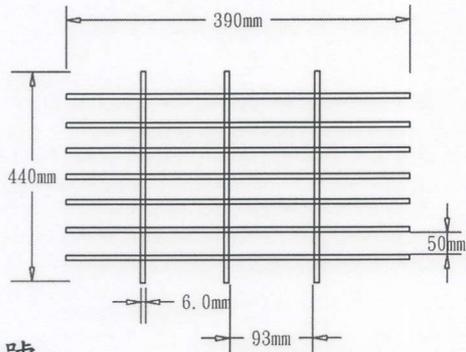
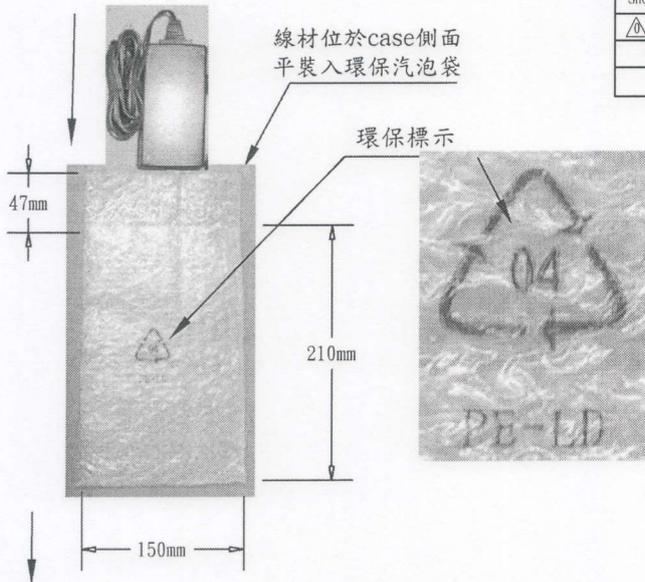
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※ 仕様は予告なく変更する場合があります。

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**Label Part No.: 9471120201**



REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
△	A	依阿達特尺寸, 初版制作	2009/06/17	



**零件料號**

- 9550000401 1. 隔板: 440\*390\*6mm B=B 2/32
- 2. 數量: 32PCS
- 9520000702 3. 外箱: L\*W\*H=450\*400\*180mm A=B加強芯 1/32
- 9560000702 4. 七刀卡: 440\*160\*6mm(中分) B=B 3塊/32
- 9560000802 5. 三刀卡: 390\*160\*6mm(中分) B=B 7塊/32
- 9540000901 6. 環保汽泡袋: 210\*150\*47mm 無色透明, 短邊單端開口, 長邊中間位置印環保標志
- 7. 外箱標注為外徑尺寸.
- 8. 成品裝入汽泡袋折合袋口后用小膠紙封口, 銘板面位於環保標志側.
- 9. 成品豎向側立裝入蜂巢內, 方向須統一.

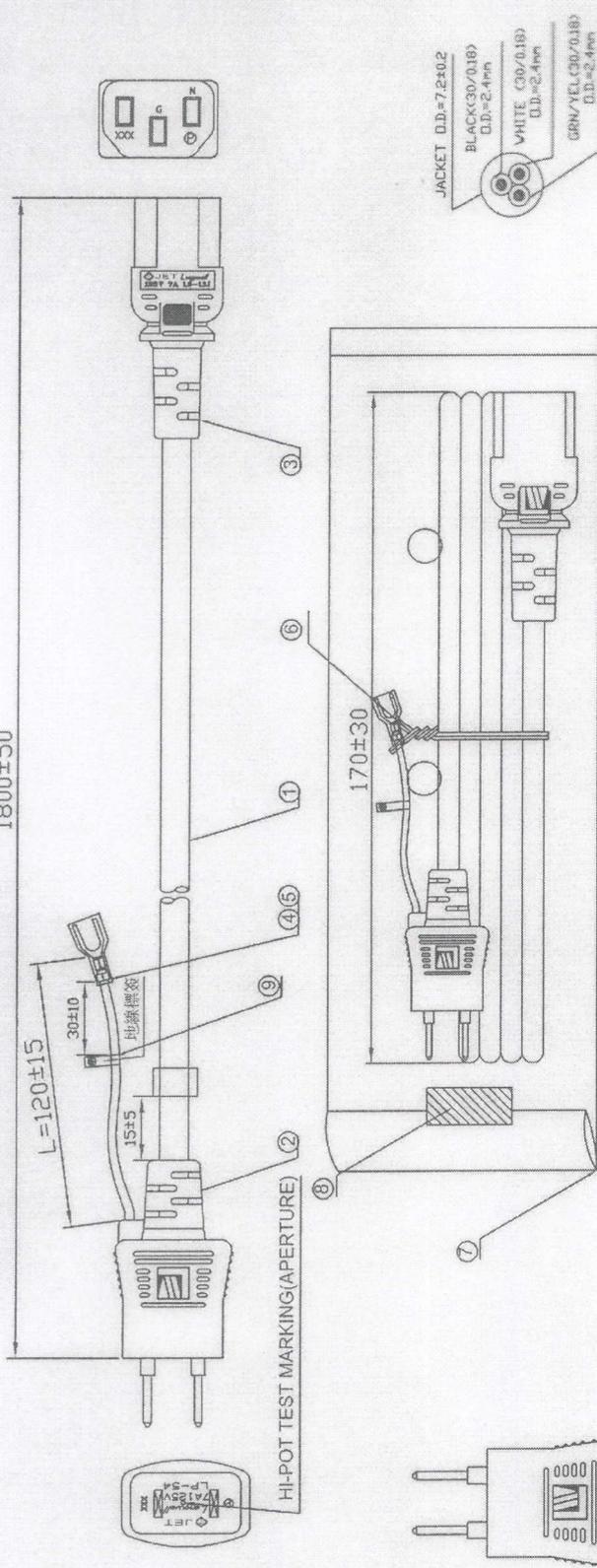
ADAPTER  
2009.07.14  
研發部

阿達特科技股份有限公司

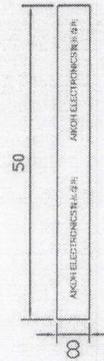
DRAWING NO. PIS36W00001		APPROVAL 1 BY		
UNIT mm		APPROVAL 2 BY		
MODEL NO. 36W-65W(阿達特)	FILE NO. PACKAGE_Y_126	CHECKED BY(ENGINEER)	鄧應親(DEN)	DATE: 2009/06/18
SCALE	REV. A	SHEET 1/1	DRAWN BY	SLU
				DATE: 2009/06/15

FIGURE 1

1800±50



CABLE MARKING  $\times PS > E JET LONGWELL VCTF 300V 0.75mm^2 XXXX -F- (N.M.)$  YEAR



50

AKOH ELECTRONIC S.A. 9R

ITEM	DESCRIPTION	QTY	UM
9	LABEL	1	EA
8	TAPE	1	EA
7	PE BAG	1	EA
6	MINI TIE	1	EA
5	TUBE: J25030(JH)	1	EA
4	TERMINAL: J655BS-2(JH)	1	EA
3	(MOLDED CONNECTOR) LS-13J 7A/125V	1	EA
2	(MOLDED PLUG) LP-54 7A/125V	1	EA
1	VCTF 0.75mm <sup>2</sup> 3C BLACK N.M. 5'11"	1	EA

Tolerance:	Approved by:	良維科技 股份有限公司 Longwell COMPANY	
>0±0.3	C.F.Y		
>1±0.5	Checked by:		
>10±1	Tony Chen		
>20±2	Drawn by:		
Angle:	Customer:	AIKO	
±1°	Customer PIN:		
	Date:	Longwell P/N:	PT8GKQPAL0A-05B
	Scale:	DWG. NO:	GW-06126
	X	Unit:	mm
Specification Use Only			SHEET 1 OF 1
			REV. 1

- NOTES:
- 1: CABLE: THE CORD SHALL COMPLY WITH ARTICLE 1 OF THE TECHNICAL REQUIREMENTS OF THE METI ORDINANCE APPENDIX 1 SECTIONS (1),(6),(10).
  - 2: PLUG: THE MOLDED PLUG SHALL COMPLY WITH ARTICLE 1 OF THE TECHNICAL REQUIREMENTS OF THE METI ORDINANCE APPENDIX 4 SECTION 1 & 6.
  - 3: CONNECTOR: THE MOLDED CONNECTOR SHALL COMPLY WITH ARTICLE 1 OF THE TECHNICAL REQUIREMENTS OF THE METI ORDINANCE APPENDIX 4 SECTION 1 & 6 AND IEC 60320-1 STANDARDS (C13 CONNECTOR).
  - 4: THE PRODUCT SHALL BE TESTED 100% FOR ALL SAFETY ELECTRICAL ITEMS.
  - 5: COLOR: BLACK (LONGWELL P/N:0A)

REV	ECN NO	Initial Release	DESCRIPTION	APPD.	DATE
1					