

納 入 仕 様 書

アールエスコンポーターネットワーク`御中

品名:スイッチング AC アダプター

型番: TW-09012U2

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

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



<p style="text-align: center;">10.8W Switching Power Adapter SPECIFICATION</p>
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Model No. : **STD-09012U2(USA/Level V)**

Description : **9.0Volts / 1.2Amps**

Part No. : **RXTD09012U418201**

Version : **A1**

Date : **06-Oct.-2010**

Approved	Checked	Prepared



Adapter Technology Co., Ltd.

■ Approval Documents/Spec. Revised Records

- Customer : AIKOH
- Model No. : STD-09012U2
- Original Documents Content : SPEC. 11 Page(s) , Attachment 2 Pages

Revised Records : No.	Date (mm/dd/yyyy)	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Remark
1	Oct./06/2010	ISSUE			
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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16					



1. Feature :

- ◆ Input : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ Output : +9.0V / 0~1.2 A
- ◆ Case Dimension : 72(L) * 34(W) * 59(H) mm
- ◆ Efficiency : Eff (av) ≥ 77.19%
- ◆ Safety : UL / CUL / PSE / BSMI / CB
- ◆ EMI : FCC Class B ; Conduction & Radiation Meet
- ◆ 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	0.31A Max.
2.4 Inrush Current	30A Max. / 100Vac ; 60A Max. / 240Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	Eff (av) ≥ 77.19 % (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi ≤ 0.3 W (At 115 Vac & 230 Vac & 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	+9.0V ± 5%
	Current	1.2A Max.
	Regulation	8.55Vmin. ~9.00Vtyp. ~9.45max.
	Ripple & Noise	100 mVpp Max.
	Total Power	10.8W 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. (10 μF) at output connector terminals. (At nominal line voltage, Full Load)



4. Protection :

4.1 Over Voltage Protection (OVP)	V out *180%(Max)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	3.0A (Max) (Auto Recovery)

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.

5. Safety 、EMI and EMC Requirement :

5.1 Safety Requirement

a. Safety : UL / CUL / PSE / BSMI / CB

b. Dielectric Strength : 10mA Max. Cut off current

(1)	Primary to Secondary	3000Vac for 1 Minute
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c. Insulation Resistance :

(1)	Primary to Secondary	10 M Ohm for 500Vdc
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5.2 EMI Requirement : FCC Class B ; Conduction & Radiation Meet

5.3 Leakage Current : Less than 0.25mA

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 hours min. (at 25°C, by MIL-HDBK-217F)



8. Mechanical :

8.1 Weight : 126 g Typical

8.2 Cable Type : Black UL2468 20AWG
(Wire + Plug)

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

(Tuning Fork & Cannelure)

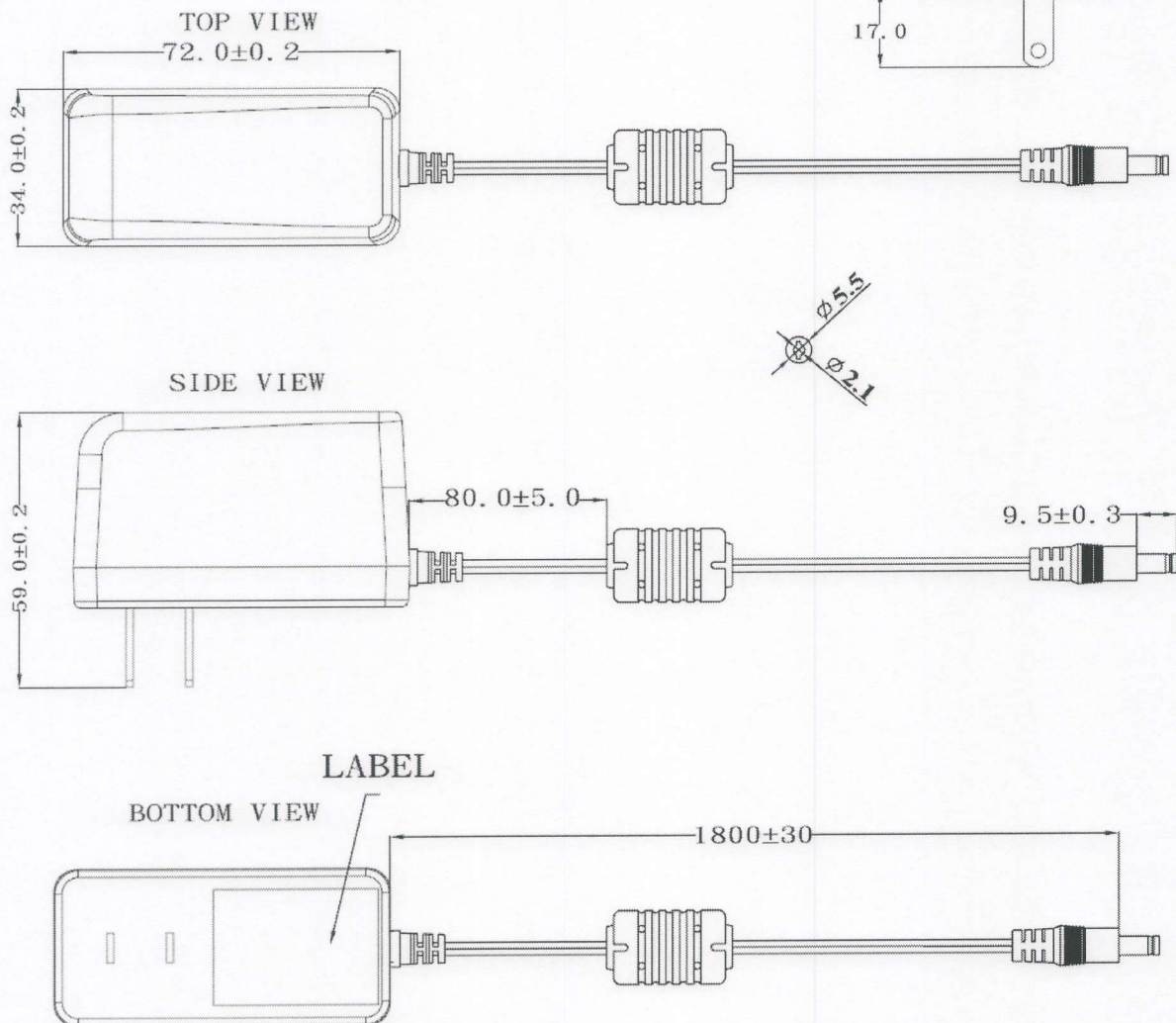
Cable Drawing No. : ADT-1182

8.3 Cable Length : 1800mm

8.4 Case Dimension : 72mm(L)*34mm(W)*59mm(H)

8.5 Material Flammability : UL 94V-0

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





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8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
 Color : Silver Background with Black Printing
 Label Dimension : 34.5mm(L)*24.5mm(W)+/-0.1mm
 Label Thickness : #75

100%



"XXX"

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

ID NO."X"

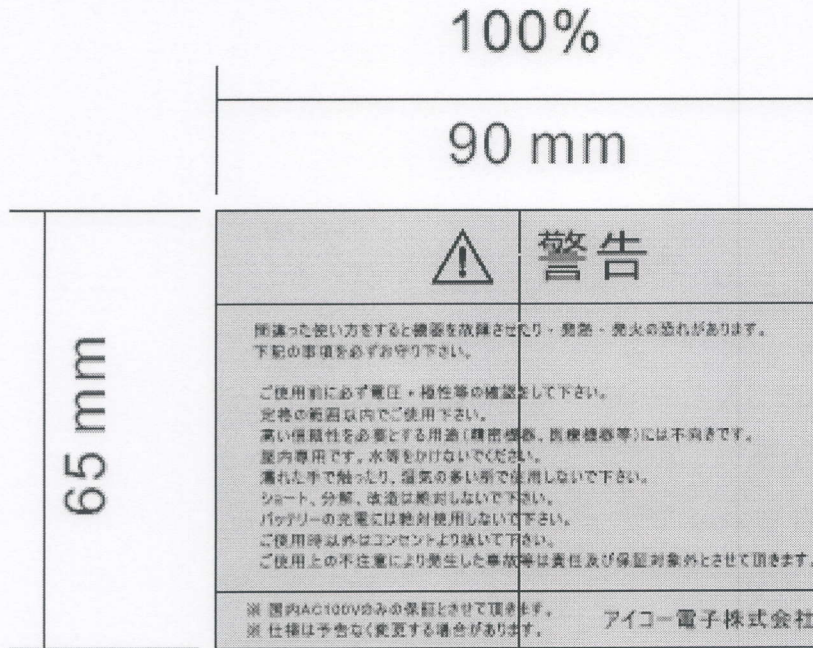
Manufacturer's code.
 It is accurate that the number
 of words depends on the real
 finished product.

300%



Label Part No. :9443023150
REV:A

8.8 Spec. Label Dimension : 90mm(L)*65mm(W)+/-0.1mm



此虚線為對折線，不需印刷。
 對折方式:字朝外對折
 放入PE袋內

Label Part No. : 9471120201





A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	8.55~9.45 V	8.983 V	9.027 V	9.040 V
115Vac / 50 % Load	8.55~9.45 V	8.983 V	9.027 V	9.040 V
132Vac / 50 % Load	8.55~9.45 V	8.983 V	9.027 V	9.040 V
180Vac / 50 % Load	8.55~9.45 V	8.985 V	9.024 V	9.030 V
230Vac / 50 % Load	8.55~9.45 V	8.985 V	9.024 V	9.030 V
264Vac / 50 % Load	8.55~9.45 V	8.985 V	9.024 V	9.030 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	77.19 % Min.	79.76 %	78.50 %	78.61 %
230Vac	77.19 % Min.	77.38 %	78.12 %	77.31 %

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

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

C. Load Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	8.55~9.45 V	9.144 V	9.148 V	9.149 V
115Vac / 50 % Load	8.55~9.45 V	8.983 V	9.027 V	9.040 V
115Vac / 100 % Load	8.55~9.45 V	8.824 V	8.907 V	8.932 V
230Vac / 0 % Load	8.55~9.45 V	9.143 V	9.145 V	9.140 V
230Vac / 50 % Load	8.55~9.45 V	8.985 V	9.024 V	9.030 V
230Vac / 100 % Load	8.55~9.45 V	8.835 V	8.903 V	8.920 V



D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	100 mVpp Max.	27.8mV	37.6mV	27.4mV
230Vac / 100 % Load	100 mVpp Max.	26.8mV	35.4mV	25.0mV

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	30A Max	12.4 A	12.0 A	12.3 A
230Vac / 100 % Load	60A Max	23.2 A	23.1 A	23.5 A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	3.0A Max.	1.82 A	1.86 A	1.88 A
230Vac / 100 % Load	3.0A Max.	2.01 A	2.10 A	2.17 A

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
115Vac / 0 % Load	$\leq 0.3W$	0.19W	0.20W	0.20W
230Vac / 0 % Load	$\leq 0.3W$	0.20W	0.20W	0.20W



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Efficiency Test Report

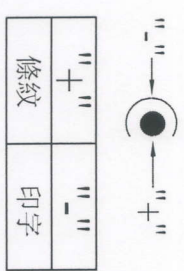
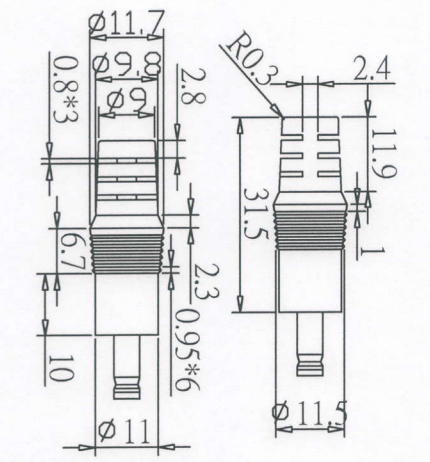
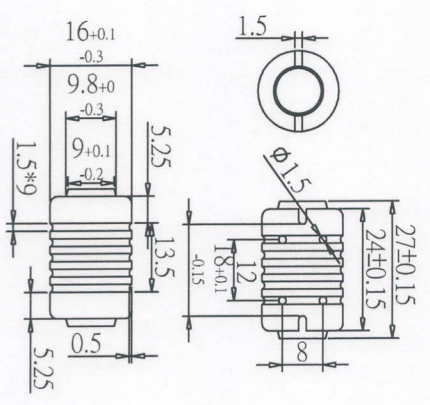
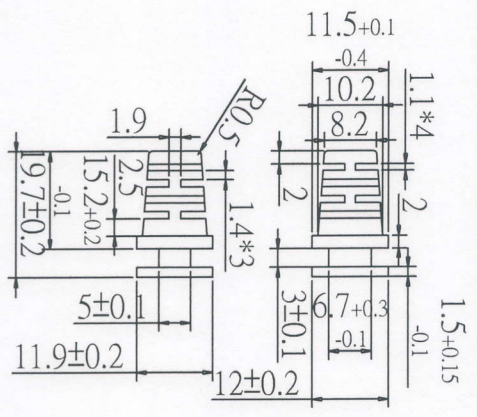
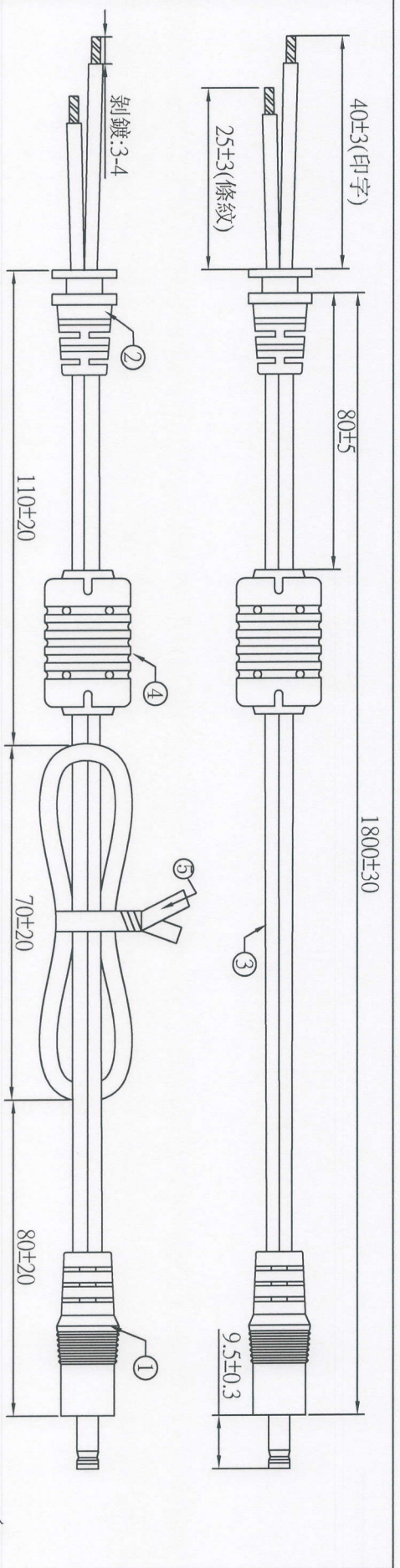
- A. Model Number : STD-09012Y2(Y=A,B,C,E,K,U,R)(9.0V /1.2A /10.8W)
- B. DC Power Cord : UL2468 , 22AWG , 1.5M
- C. Average Efficiency :
- Energy Star V $(0.0626 * \ln(\text{Nameplate OutputW}) + 0.622) = 77.10 \% \text{ Min.}$
- Erp (Stage 2) $(0.063 * \ln(\text{Nameplate OutputW}) + 0.622) = 77.19 \% \text{ Min.}$
- MEPS V $(0.0626 * \ln(\text{Nameplate OutputW}) + 0.622) = 77.10 \% \text{ Min.}$
- D. NO Load Power Consumption :
- Energy Star V 0.3W max.
- Erp (Stage 2) 0.3W max.
- MEPS V 0.3W max.
- E. Testing Dequpment :
1. AC Power Source : " Zentech " 2700M-10
2. Electronic Load : " PRODIGIT " 3311C
3. Power Meter : " YOKOGAWA " WT210
4. Digital Meter : " FLUKE " 45
- F. AC Input Voltage : 115Vac/60Hz

Reported Quantity \ Load Conditions	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	0%* I ₀
Rms Output Current(mA)	1200mA	900mA	600mA	300mA	0mA
Rms Output Voltage(V)	8.932V	8.985V	9.040V	9.095V	9.149V
Active Output Power(W)	10.72W	8.09W	5.42W	2.73W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	0.209A	0.164A	0.120A	0.071A	0.007A
Rms Input Power(W)	13.50W	10.13W	6.83W	3.60W	0.20W
Voltage T.H.D.(%)	0.13	0.10	0.14	0.11	0.13
True Power Factor	0.562	0.536	0.496	0.440	0.245
Power Consumed by UUT(W)	2.78W	2.04W	1.41W	0.87W	0.20W
Efficiency	79.40%	79.83%	79.41%	75.79%	*
Average Efficiency	78.61%				*

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

Reported Quantity \ Load Conditions	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	0%* I ₀
Rms Output Current(mA)	1200mA	900mA	600mA	300mA	0mA
Rms Output Voltage(V)	8.920V	8.975V	9.030V	9.086V	9.140V
Active Output Power(W)	10.70W	8.08W	5.42W	2.73W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.135A	0.111A	0.079A	0.047A	0.008A
Rms Input Power(W)	13.26W	10.40W	6.92W	3.75W	0.20W
Voltage T.H.D.(%)	0.12	0.11	0.10	0.09	0.09
True Power Factor	0.430	0.404	0.382	0.352	0.111
Power Consumed by UUT(W)	0.43W	2.33W	1.51W	1.03W	0.20W
Efficiency	80.71%	77.65%	78.26%	72.63%	*
Average Efficiency	77.31%				*

Tester : Chihwei

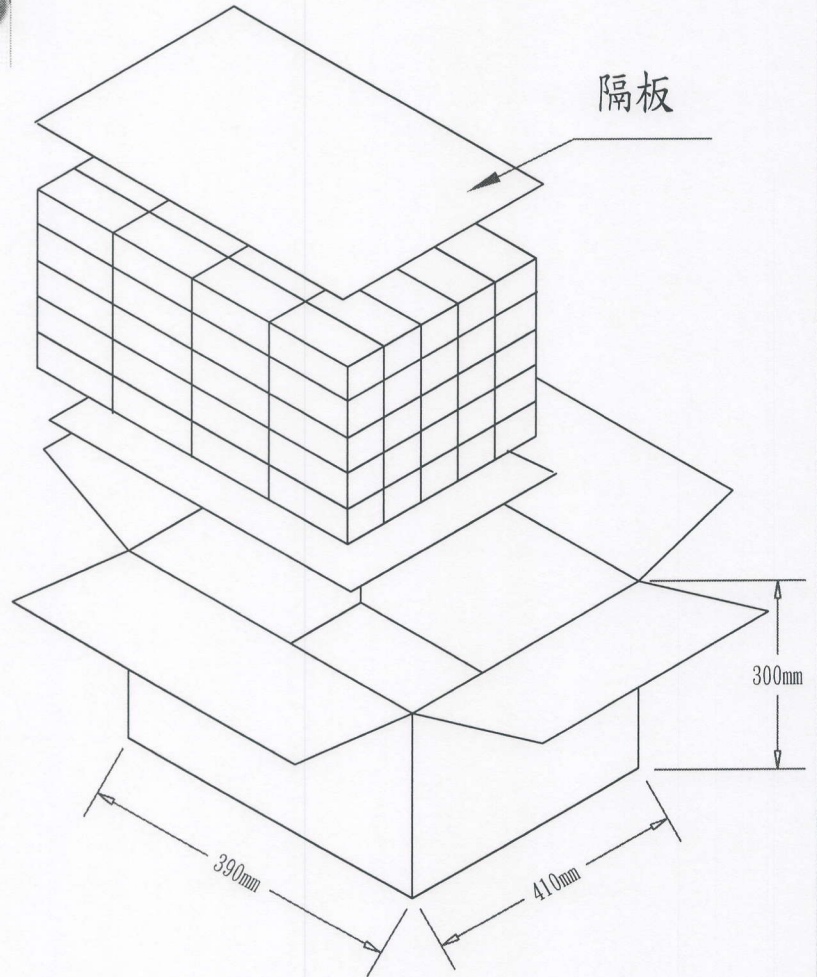
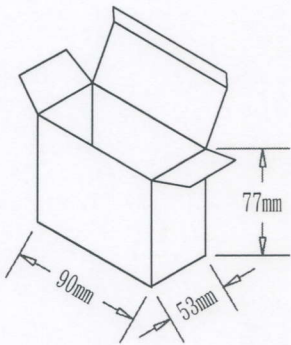
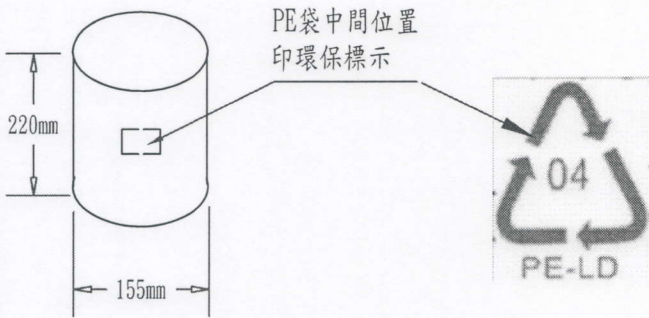


注意:此圖面所需材料符合"ROHS"標準

- ① 5.5*2.1*21 音叉車溝黑色半邊 (YY-PD-00023), 外模P-184號模(二次成型), 用料外PVC60P黑色 (YY-PV-00009)
- ② SR-101 號模, 用料PVC60P黑色 (YY-PV-00009), 吊重:1米/20磅/60秒
- ③ UL 2468 20AWG(0.16*26)*2C BK OD:1.9*3.8 (YY-DC-00164) 裁線長度:1860+10/-0
- ④ 鐵芯規格:12*20*5.6, 外模P-136號模(二次成型), 用料外PVC40P黑色 (YY-PV-00011)
- ⑤ PE有鐵芯 紮帶12CM黑色 (YY-ES-00001)
- ⑥ 絕緣阻抗:20Ω, 導通阻抗:1.5Ωmax
- ⑦ 單位:MM

料號	R44M191801E		
客戶	阿達特	制圖	吳遠松
版次	01	初審	
頁數	02	審核	
泰岳電子有限公司			
圖號	ADT-1182	日期	2010/08/18
版次	變更內容		
02	變更線線及后層		

SHOW	REV	DESCRIPTION	DATE	APPROVED
△	A	初版制作	Jun./25/2009	



零件料號

9550001501

1. 隔板:400*380*6mm B=B 2/100

2. 數量:20*5=100PCS

9520000202

3. 外箱:L*W*H=410*390*300mm K=K 1/100

9510001302

4. 紙盒:L*W*H=90*53*77mm 白盒 350P+CE(即C9紙加裱350磅白板紙)

9540003001

5. 環保PE袋:220*155*0.09mm 無色透明,長邊中間位置印環保標示,短邊單端開口

6. 成品裝入PE袋后,用小膠紙封口

7. 外箱,紙盒標注為外徑尺寸

阿達特科技股份有限公司

DRAWING NO. PIS5W000002

APPROVAL 1 BY

UNIT MODEL NO. 5W, 10W(美規)

APPROVAL 2 BY

mm FILE NO. PACKAGE_Y_159

CHECKED BY(ENGINEER)

廖志偉(Chihwei)

DATE: 2009/06/25

SCALE

REV. A

SHEET 1/1

DRAWN BY

sun

DATE: 2009/06/25