Specification for Approval

Customer	:	**ELFA AB**
Part Name	:	**AC ADAPTER**
Description	:	**12Volts / 9Amps**
Model No.	:	**STD-12090 (LEVEL V)**
Customer P / N	:	**69-234-82**
Product P / N	:	**RXTD12090D15207**
Issued Date	:	**06 - Feb. - 2012**
Version	:	**A3**
Issued Stamp	:	

Customer's Approval Signature

ADAPTER TECHNOLOGY CO.,LTD.
Office (Taiwan)：6F-9,No.258, Liancheng Rd.,Zhonghe District,New Taipei City 235,Taiwan (R.O.C.)
TEL：+886-2-8226-2279 FAX：+886-2-8226-2238
E-mail : service_tw@ adaptertech.com.tw；service@ adaptertech.com.tw
Factory (China)：BOAYANG ELECTRONICS CO., LTD.
Di Feng Gong Ye Qu 2 Hao,Xiasha Liuwu Village, Shipai Town, Dong Guan City, Guang Dong Province,China
TEL：86-0769-8136-9899；86-0769-8136-0909；86-0769-8136-9008
86-0769-8186-8338；86-0769-8186-8900
FAX：86–0769-8136-9009

108W

Switching Power Adapter

SPECIFICATION

Model No.	:	**STD-12090 (LEVEL V)**
Description	:	**12Volts / 9Amps**
Part No.	:	**RXTD12090D15207**
Version	:	**A3**
Date	:	**06 - Feb. - 2012**

Approved	Checked	Prepared

■ Approval Documents/Spec. Revised Records

- Customer : ELFA AB
- Model No. : STD-12090
- Original Documents Content : Spec. 10 Pages, Attachment 2 Pages

Revised Records : No.	Date (mm/dd/yyyy)	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Version
1.	Dec./08/2011	ISSUE	-	Ray	A1
2.	Dec./21/2011	Core location changed into 100mm from the plug.	P6,A1	Ray	A2
3.	Feb./06/2012	Update label	P7	Ray	A3

1. Feature：

- ♦ Input ： Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ♦ Output ： +12V / 0 ~ 9A
- ♦ Case Dimension ： 168.1(L) * 65.9(W) * 39(H) mm
- ♦ Efficiency ： Eff (av) ≧ 87%
- ♦ Safety ： CUL / UL / GS / PSE / BSMI / RCM
- ♦ 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)
- ♦ 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	1.6A Max.
2.4 Inrush Current	80A Max. / 230Vac (Cold start at 25 ºC，full load)
2.5 Efficiency	Eff (av) ≧ 87% (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi ≦ 0. 5 W (At 230Vac & No load)
2.7 Power Factor (PF)	Pi ≧ 0. 9 (At Full load)

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

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	+12.00V ± 5%
	Current	9A Max.
	Regulation	11.4Vmin. ~ 12.0Vtyp. ~ 12.6Vmax.
	Ripple & Noise	120mV Max.
	Total Power	108W 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 * (110% ~ 150%)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	I out * (110% ~ 150%)

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 latch.

5. Safety、EMI and EMC Requirement：

5.1 Safety Requirement

a. Safety ： CUL / UL / GS / PSE / BSMI / RCM1

b. Dielectric Strength ： Cut off current 10mA

(1)	Primary to Secondary	1800Vac for 1 Minute

c. Insulation Resistance ：

(1)	Primary to Secondary	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	+ 0ºC ~ + 40ºC
Storage	- 20 ºC ~ + 80 ºC

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℃, by MIL-HDBK-217F)

8.Mechanical :

8.1 Weight : 590g Typical

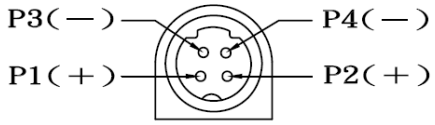
8.2 Cable Type : Black UL1185 AWG14
(Wire + Plug)
Plug : 4 PIN DING

8.3 Cable Length : 1500mm ADT-2261

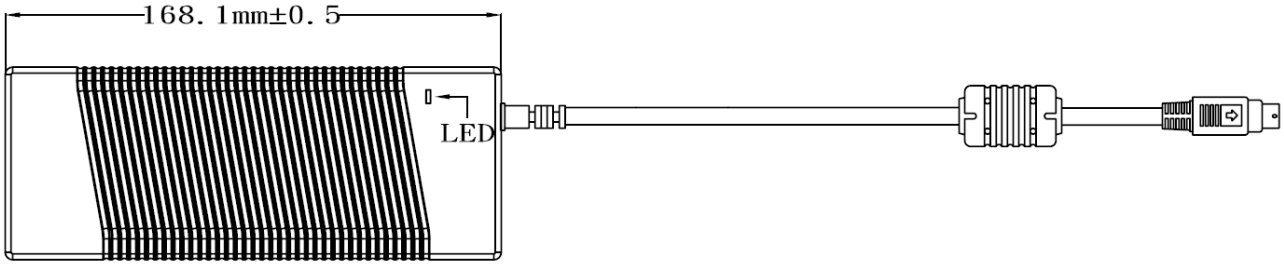
8.4 Case Dimension : 168.1mm(L)*65.9mm(W)*39mm(H)

8.5 Material Flammability : UL 94V-0

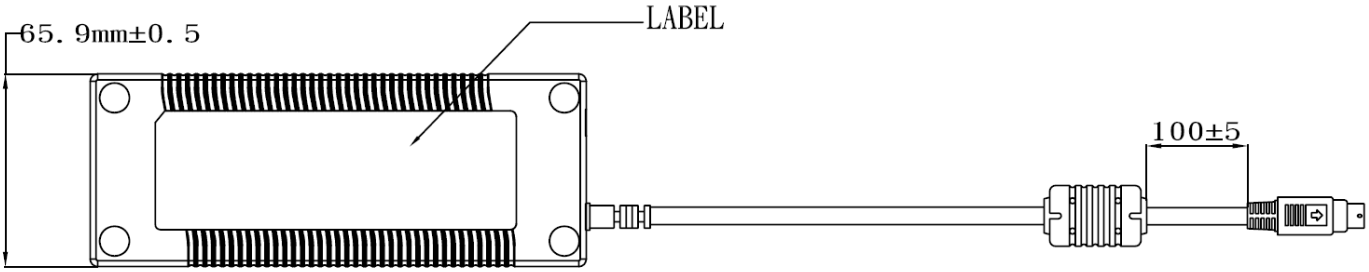
8.6 External Apperance : As drawing below (Scale → mm)



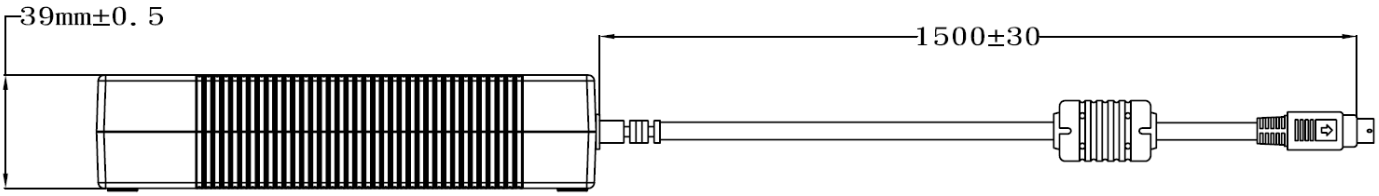
Output Cable Plug Pin Assignment



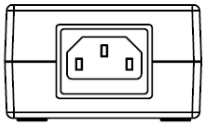
TOP-VIEW



BOTTOM-VIEW

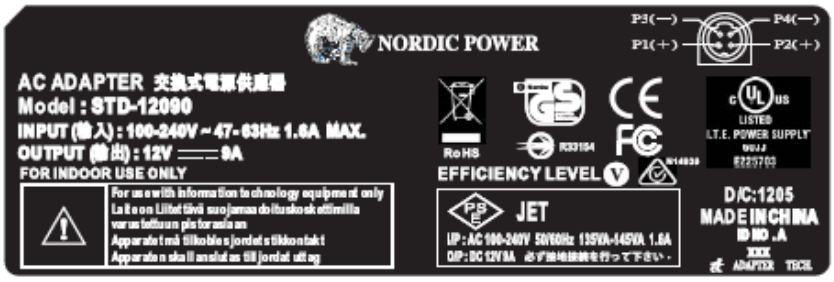


SIDE-VIEW



8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
Color : Black Background with Silver Printing
Label Dimension : 39mm(H)*119mm(W)

100%



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

160%

Label Part No. :9443030751

A. Line Regulation Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
115Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
132Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
180Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
230Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
264Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V

B. Efficiency Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	87 % Min.	88.53%	88.79%	89.20%
230Vac	87 % Min.	88.57%	89.37%	89.47%

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

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	11.4 V ~ 12.6 V	12.298V	12.324V	12.361V
115Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
115Vac / 100 % Load	11.4 V ~ 12.6 V	11.903V	11.976V	12.014V
230Vac / 0 % Load	11.4 V ~ 12.6 V	12.298V	12.323V	12.361V
230Vac / 50 % Load	11.4 V ~ 12.6 V	12.096V	12.143V	12.186V
230Vac / 100 % Load	11.4 V ~ 12.6 V	11.903V	11.984V	12.021V

D. Ripple & Noise Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	120mV Max.	91.2 mV	95.3mV	93.7mV
230Vac / 100 % Load	120mV Max.	84.7 mV	84.4mV	81.2mV

E. Inrush Current

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 100 % Load	80A Max.	56.3A	56.7A	57.5A

F. Over Voltage Protection

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Vout*(110%~150%)	117%	118%	117%
230Vac / 100 % Load	Vout*(110%~150%)	118%	119%	117%

G. Over Current Protection

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Iout*(110%~150%)	120%	121%	122%
230Vac / 100 % Load	Iout*(110%~150%)	120%	122%	122%

H. 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

I. Input Power Consumption(No Load)

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	≦ 0.5 W	0.30W	0.297W	0.297W

J. Power Factor

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	≧ 0.9	0.992	0.993	0.994
230Vac / 100 % Load	≧ 0.9	0.947	0.941	0.941

Efficiency Test Report

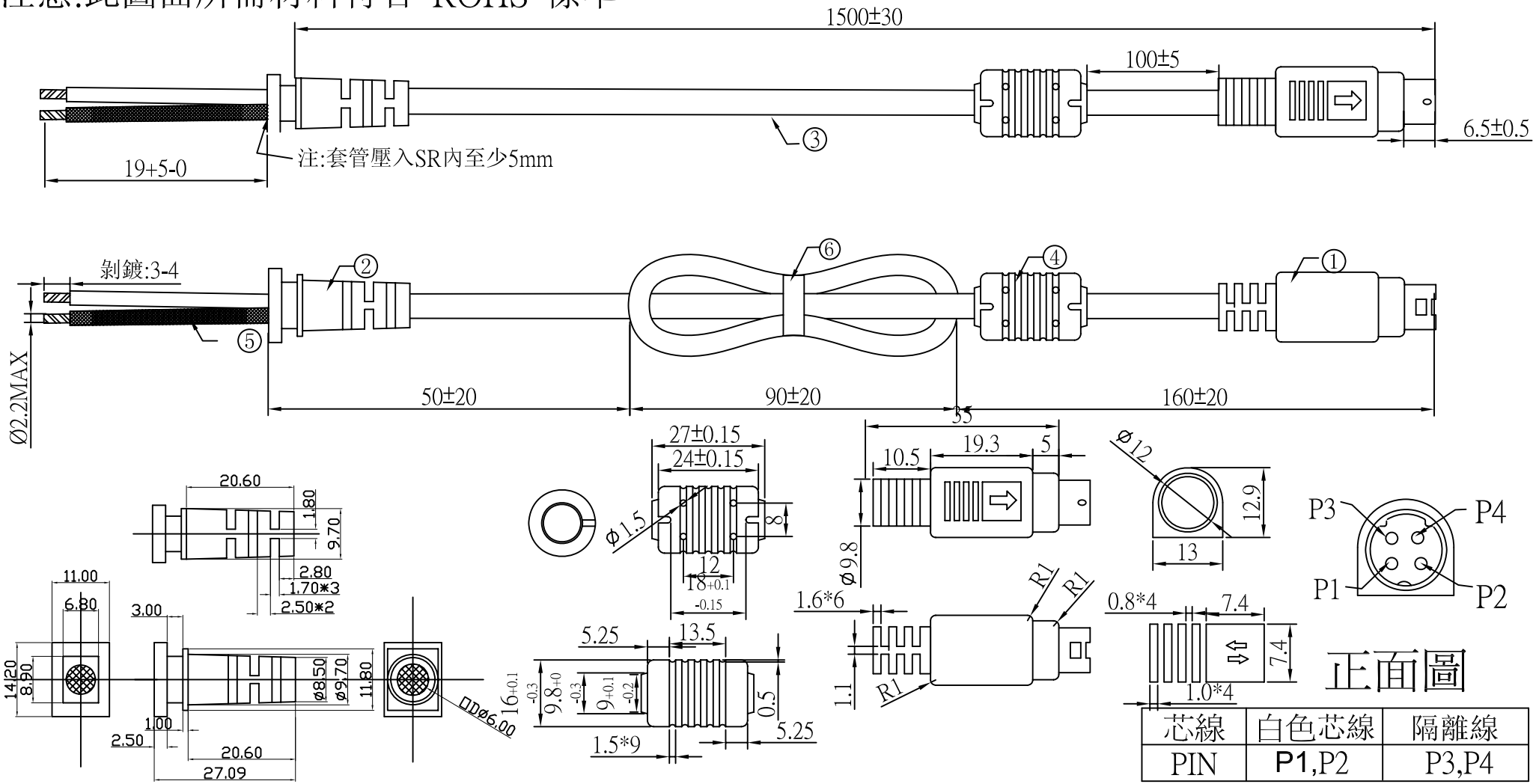
A.	Model Number	:	STD-12090 (12V / 9A)	
B.	DC Power Cord	:	UL1185 , 14AWG , 1.5M	
C.	Average Efficiency	:		
	Energy Star V		87% min.	
	Erp (Stage 2)		87% min.	
	MEPS V		87% min.	
D.	NO Load Power Consumption	:		
	Energy Star V		0.5W max.	
	Erp (Stage 2)		0.5W max.	
	MEPS V		0.5W max.	
E.	Testing Dequipment	:		
	1. AC Power Source	:	"APE"	APW-110N
	2. Electronic Load	:	" PRODIGIT "	3356
	3. Power Meter	:	"YOKOGAWA"	WT210
	4. Digital Meter	:	" FLUKE "	45
F.	AC Input Voltage	:	115Vac/60Hz	

Load Conditions / Reported Quantity	100%* I_0	75%* I_0	50%* I_0	25%* I_0	0%* I_0
Rms Output Current(mA)	9000mA	6750mA	4500mA	2250mA	0mA
Rms Output Voltage(V)	11.903V	11.994V	12.096V	12.196V	12.298V
Active Output Power(W)	107.13W	80.96W	54.43W	27.44W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	1.082A	0.809A	0.548A	0.537A	0.016A
Rms Input Power(W)	123.30W	91.80W	61.10W	30.50W	0.22W
Voltage T.H.D.(%)	0.11	0.10	0.10	0.10	0.08
True Power Factor	0.992	0.989	0.972	0.495	0.115
Power Consumed by UUT(W)	16.17W	10.84W	6.67W	3.06W	0.22W
Efficiency	86.88%	88.19%	89.09%	89.97%	*
Average Efficiency	88.53%				

G. AC Input Voltage : 230Vac/50Hz

Load Conditions / Reported Quantity	100%* I_0	75%* I_0	50%* I_0	25%* I_0	0%* I_0
Rms Output Current(mA)	9000mA	6750mA	4500mA	2250mA	0mA
Rms Output Voltage(V)	11.903V	12.004V	12.096V	12.196V	12.298V
Active Output Power(W)	107.13W	81.03W	54.43W	27.44W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.560A	0.431A	0.304A	0.305A	0.031A
Rms Input Power(W)	121.50W	91.40W	62.00W	30.60W	0.30W
Voltage T.H.D.(%)	0.11	0.11	0.10	0.11	0.09
True Power Factor	0.947	0.926	0.892	0.437	0.043
Power Consumed by UUT(W)	14.37W	10.37W	7.57W	3.16W	0.30W
Efficiency	88.17%	88.65%	87.79%	89.68%	*
Average Efficiency	88.57%				*

注意:此圖面所需材料符合"ROHS"標準



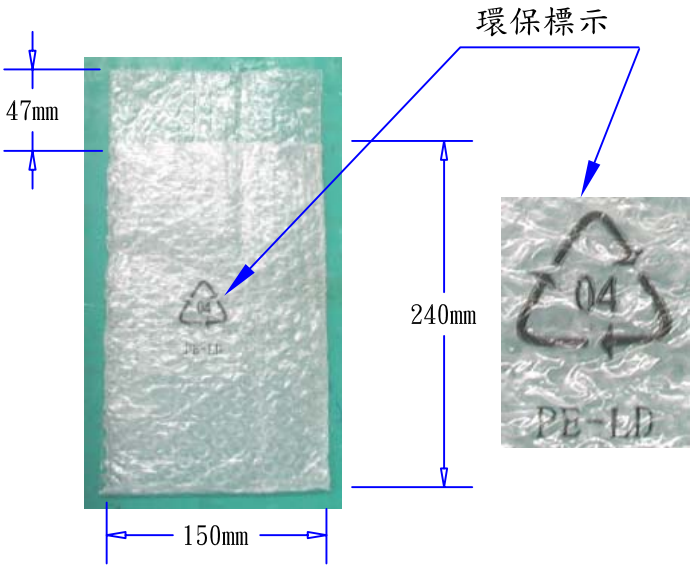
芯線	白色芯線	隔離線
PIN	P1,P2	P3,P4

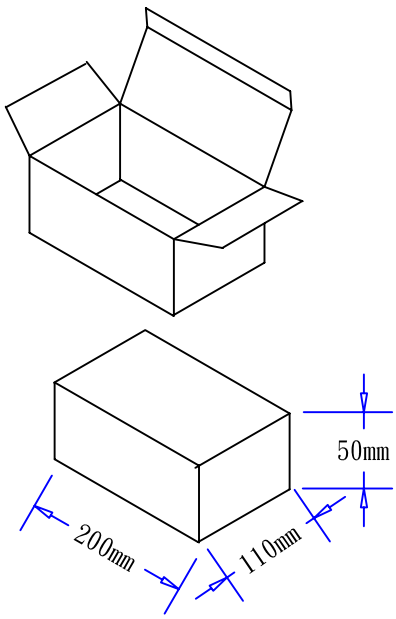
① 4PIN 粗針成型式,外模P-180号模(二次成型)大網尾,单箭頭, 用料PVC60P黑色
② SR-462號模,用料PVC75P黑色(YY-PV-00031),吊重:1米/20磅/60秒
③ UL 1185 14AWG(0.254*41)單芯隔離線加粗 (0.16*105)BK亮 OD:5.6裁線長度:1540+10/-0
④ 鐵芯規格:12*20*6.0(YY-CR-00038),外模SR-136號模用料PVC60P黑色(YY-PV-00009)
⑤ 熱縮套管:Ø3*22(YY-ES-00008)
⑥ PE有鐵芯紮帶12CM(YY-ES-00001)
⑦ 單位:MM

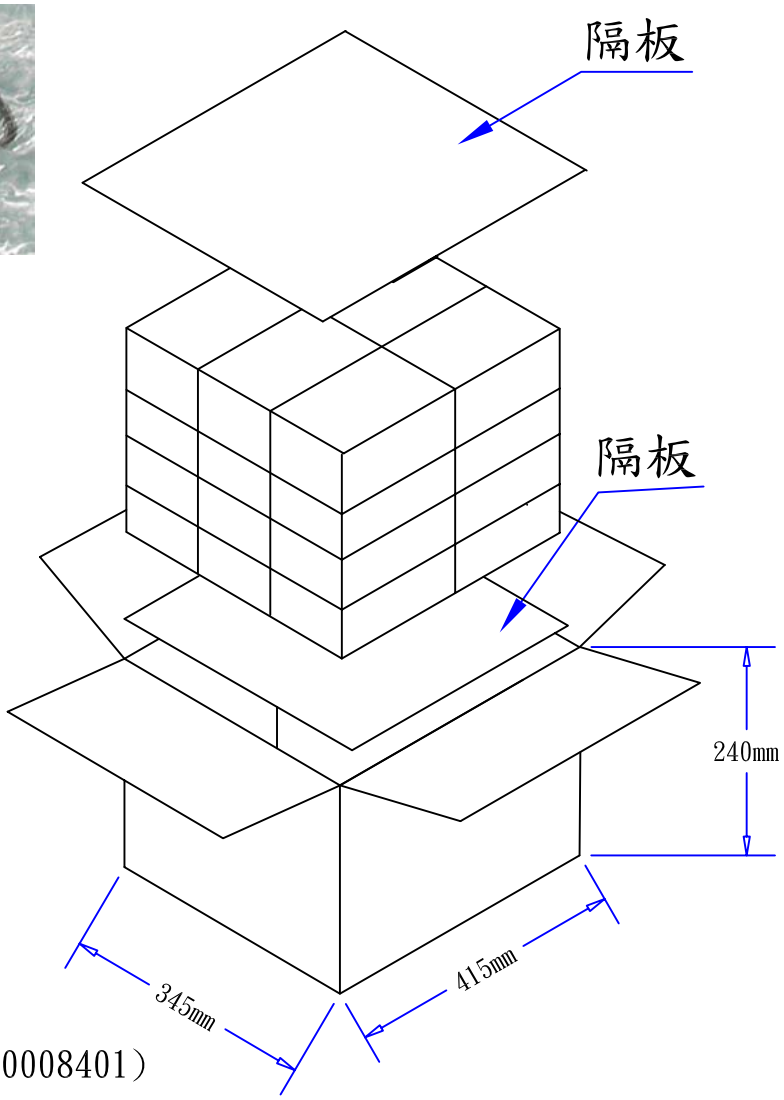
料號			
客戶	阿達特	制圖	吳远松
版次	01	初審	
		審核	
頁數	01	批準	
泰岳電子有限公司			
圖號	ADT-2261	日期	2011/12/19

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
△0	A	客戶指定紙盒尺寸,初版制作	09/6/17	

PIS120W0002







1. 隔板:400*330*6mm　B=B　2/24　(9550008401)
2. 數量:6*4=24PCS
3. 外箱:L*W*H=415*345*240mm　K=K　1/24　(9520010001)
4. E坑瓦楞盒:L*W*H=200*110*50mm;350P+CE(即C9紙加裱350磅白板紙)　(9510004602)
5. 環保汽泡袋:240*150*47mm　　無色透明,短邊單端開口,中間位置印環保標志　(9540003901)
6. 白盒,外箱標注為外徑尺寸.
7. 成品裝入汽泡袋折合袋口后用小膠紙封口,下蓋面位於環保標志側.
8. 成品下蓋向上平裝入白盒內,方向須統一.

阿達特科技股份有限公司	DRAWING NO. 20-0270-A		APPROVAL2		
	UNIT mm	MODEL NO.STD90w機种(阿達特)	APPROVAL1		
		FILE NO. PACKAGE_Y_388	ENGINER		
	SCALE	REV.A SHEET 1/1	DRAWN BY		