



Specification for Approval

Customer : AKON CO.,LTD.

Part Name : AC ADAPTER

Description : 12.0 Volts / 9.0 Amps

Model No. : ATS120A1-P120 (Level VI)

Customer P / N :

Product P / N : ATS120A1P120D12206

Issued Date : 24 - Dec. - 2025

Version : A1

Issued Stamp :

Customer's approval signature

ADAPTER TECHNOLOGY CO.,LTD.

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Factory (China) : BOAYANG ELECTRONICS CO., LTD.

(Philippines) : Adapter Technology Co., Ltd - Philippines Corp.

Elecsys Manufacturing Corporation



<p>108.0 W</p> <p>Switching Power Adapter</p> <p>SPECIFICATION</p>

Model No.	:	ATS120A1-P120 (Level VI)	
<hr/>			
Description	:	12.0 Volts / 9.0 Amps	
<hr/>			
Part No.	:	ATS120A1P120D12206	
<hr/>			
Version	:	A1	
<hr/>			
Date	:	24 - Dec. - 2025	
<hr/>			

Approved	Reviewed	Checked	Prepared	Sales
				



1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ◆ **Output** : +12.0 V / 0 ~ 9.0A
- ◆ **Case Dimension** : 140.5(L) * 60.0(W) * 35.0(H) mm ± 1 mm
- ◆ **Efficiency** : Eff_(av) ≥ 88%
Eff ≥ 79%@10% load (At 230 Vac)
- ◆ **Safety** : UL / CUL / GS / PSE / BSMI / UKCA
- ◆ **EMC** : CE / FCC (conduction & radiation Class B)
- ◆ **Protection** : OVP (Over Voltage Protection) 、 SCP (Short Circuit Protection) 、
OCP (Over Current Protection) 、 OTP (Over Temperature Protection)
- ◆ Suitable for usage at I.T.E., industrial controller
- ◆ Meet DoE Level VI/ ErP (Lot 7) / GEMS / NRCan.

2. Input :

2.1 Voltage	Universal 100 ~ 240 Vac , single phase
2.2 Frequency	50 ~ 60 Hz
2.3 Current	1.6 A Max.
2.4 Inrush Current	100 A max. / 230 Vac (Cold start at 25°C , full load) (ac source chroma 6530)
2.5 Efficiency	Eff _(av) ≥ 88% (At 115 Vac & 230 Vac) Eff ≥ 79%@10% load (At 230 Vac)
2.6 Power Consumption	Pi ≤ 0.21 W (At 115 Vac & 230 Vac & At No load)
2.7 Power Factor (PF)	Pi ≥ 0.9 (At 115 Vac & 230 Vac, At Full load)

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

E_1 =efficiency with 25% rated load , E_2 = efficiency with 50% rated load
 E_3 =efficiency with 75% rated load , E_4 = efficiency with 100% rated load

3. Output :

3.1 DC Output	Voltage	+12.0 V ± 5%
	Current	9.0 A Max.
	Regulation	11.4 Vmin. ~ 12.0 Vtyp. ~ 12.6 Vmax.
	Ripple & Noise	120 mVp-p max.
	Total Power	108.0 W 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)



4. Protection :

4.1 Over Voltage Protection (OVP)	Vout * 150% max., latch off.(50% Load)
4.2 Over Current Protection(OCP)	Iout * 180% max. Autorecovery
4.3 Short Circuit Protection (SCP)	Autorecovery
4.4 Over Temperature Protection (OTP)	Autorecovery

5. Safety requirement :

5.1. Dielectric strength : Cut off current 10 mA

(1)	Primary to secondary	3000 Vac (RMS) for 1 minute
(2)	Primary to Frame Ground	1770 Vac (RMS) for 1 minute
※ Secondary return isolated to FG		

5.2. Insulation resistance :

(1)	Primary to secondary	10 MΩ for 500 Vdc
(2)	Primary to Frame Ground	10 MΩ for 500 Vdc
※ Secondary return isolated to FG		

5.3 Leakage Current : Less than 5 mA (RMS) or 7.07 mA (Peak)

5.4 Grounding test : < 0.1Ω

6. Operation and environment performance :

6.1 Temperature range

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

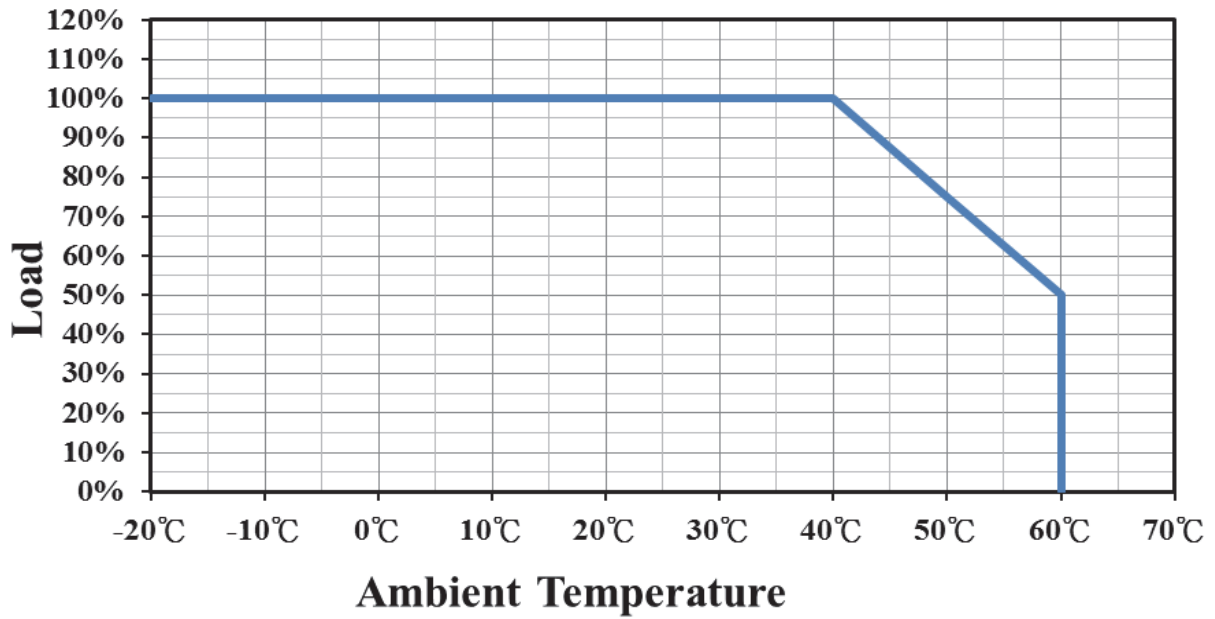
6.2 Humidity range (non-condensing)

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

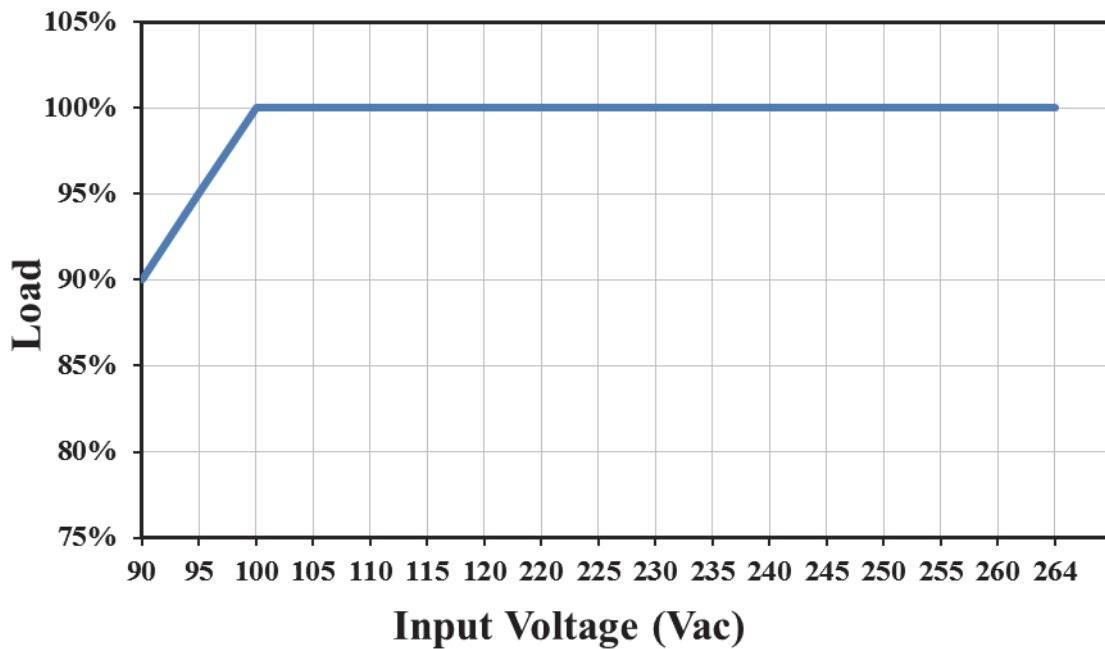
6.3 Cooling : By natural air.

7. M.T.B.F. : 300,000Hrs.(Calculated Hours at 25°C , By Telcordia SR-332)

8. Derating Curve :



9. Static Characteristics :



10. Mechanical :

10.1 Weight : 390 g Ref.

10.2 Cable type : Black UL11352 16 AWG
(wire + plug)

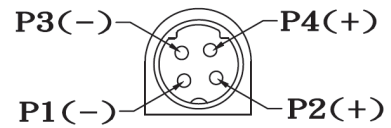
Plug : 4 Pin Din

10.3 Cable length : 1200 mm

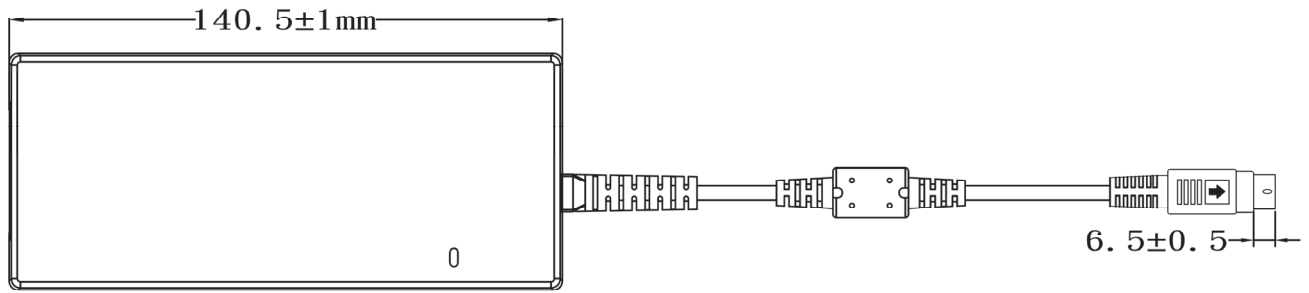
10.4 Case dimension : 140.5 (L) * 60.0 (W) * 35.0 (H) mm \pm 1 mm

10.5 Material flammability : UL 94V-0

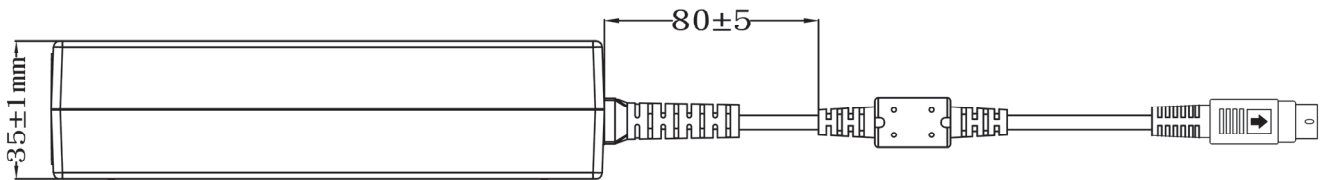
10.6 External appearance : As drawing below (scale \rightarrow mm)



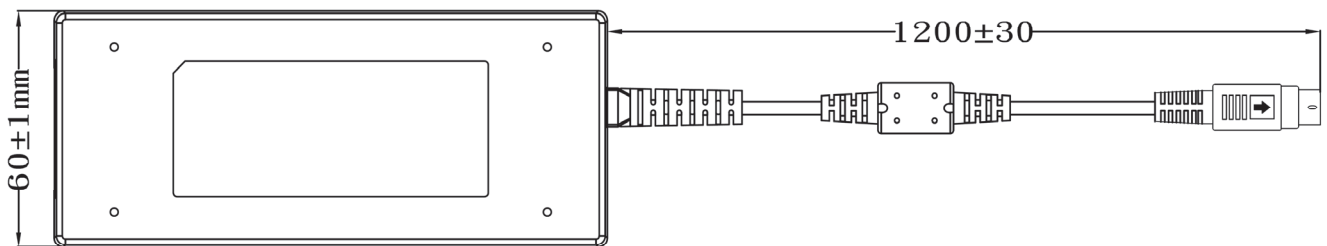
Output cable plug pin assignment



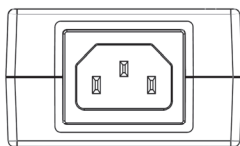
TOP-VIEW



SIDE-VIEW



BOTTOM-VIEW

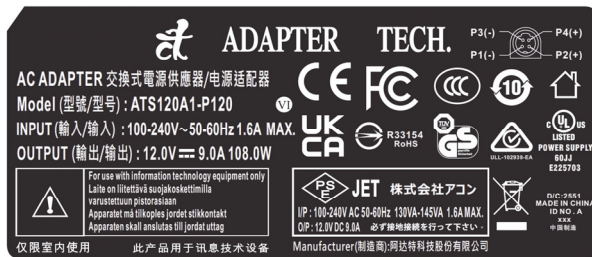


FRONT-VIEW

11. Label :

- 11.1 Label materials : Metalized polyester label (silver gloss)
- 11.2 Color : Black background with silver printing
- 11.3 Label dimension : 79 (L)mm * 33.5 (W)mm ± 0.2 mm
- 11.4 Label thickness : 75#

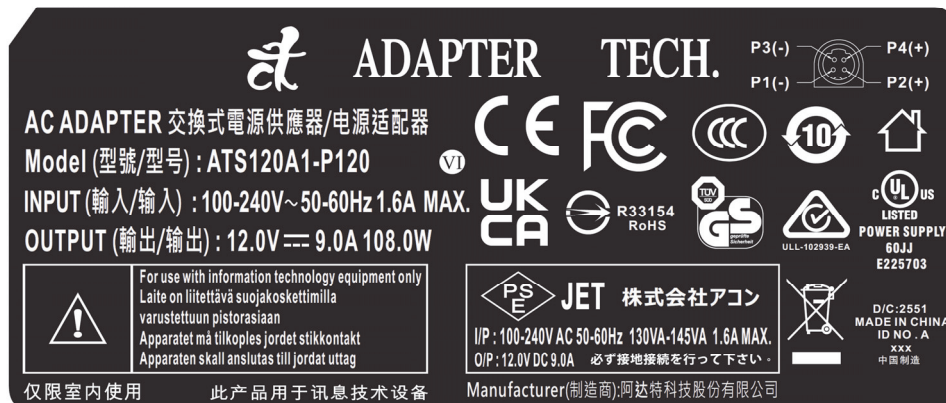
100%



"XXX"

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

160%



Label Part No :9443136990



A. Line regulation test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
115 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
132 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
180 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
230 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
264 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V

B. Efficiency test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	88% Min.	88.63%	88.66%	88.74%
230 Vac	88% Min.	89.45%	89.57%	89.63%
230Vac	79 %Min. (10% Load)	79.67%	79%	81.93%

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

E_1 =efficiency with 25% rated load ; E_2 = efficiency with 50% rated load
 E_3 =efficiency with 75% rated load ; E_4 = efficiency with 100% rated load

C. Load regulation test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 0 % Load	11.4 V ~ 12.6 V	12.20 V	12.20 V	12.20 V
115 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
115 Vac / 100 % Load	11.4 V ~ 12.6 V	11.65 V	11.65 V	11.65 V
230 Vac / 0 % Load	11.4 V ~ 12.6 V	12.20 V	12.20 V	12.20 V
230 Vac / 50 % Load	11.4 V ~ 12.6 V	11.92 V	11.92 V	11.92 V
230 Vac / 100 % Load	11.4 V ~ 12.6 V	11.65 V	11.65 V	11.65 V

D. Ripple & Noise test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100 % Load	120 mV _{p-p} max.	40 mV _{p-p}	42 mV _{p-p}	42 mV _{p-p}
230 Vac / 100 % Load	120 mV _{p-p} max.	37 mV _{p-p}	40 mV _{p-p}	45 mV _{p-p}

E. Inrush current

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230 Vac / 100 % Load	100 A max.	72 A	72 A	71 A

F. Over voltage protection

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 50% Load	Vout * 150% max.	118 %	118 %	118 %
230 Vac / 50% Load	Vout * 150% max.	118 %	118 %	118 %

G. Over current protection

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	Iout * 180% Max.	124 %	128 %	125 %
230 Vac	Iout * 180% Max.	124 %	128 %	125 %

H. Short circuit protection

Test result :

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

I. Input power consumption (no load)

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230 Vac / 0 % Load	≤ 0.21 W	0.11 W	0.11 W	0.11 W

J. Power factor

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100 % Load	≥ 0.9	0.98	0.98	0.98
230 Vac / 100 % Load	≥ 0.9	0.92	0.92	0.92



Efficiency Test Report

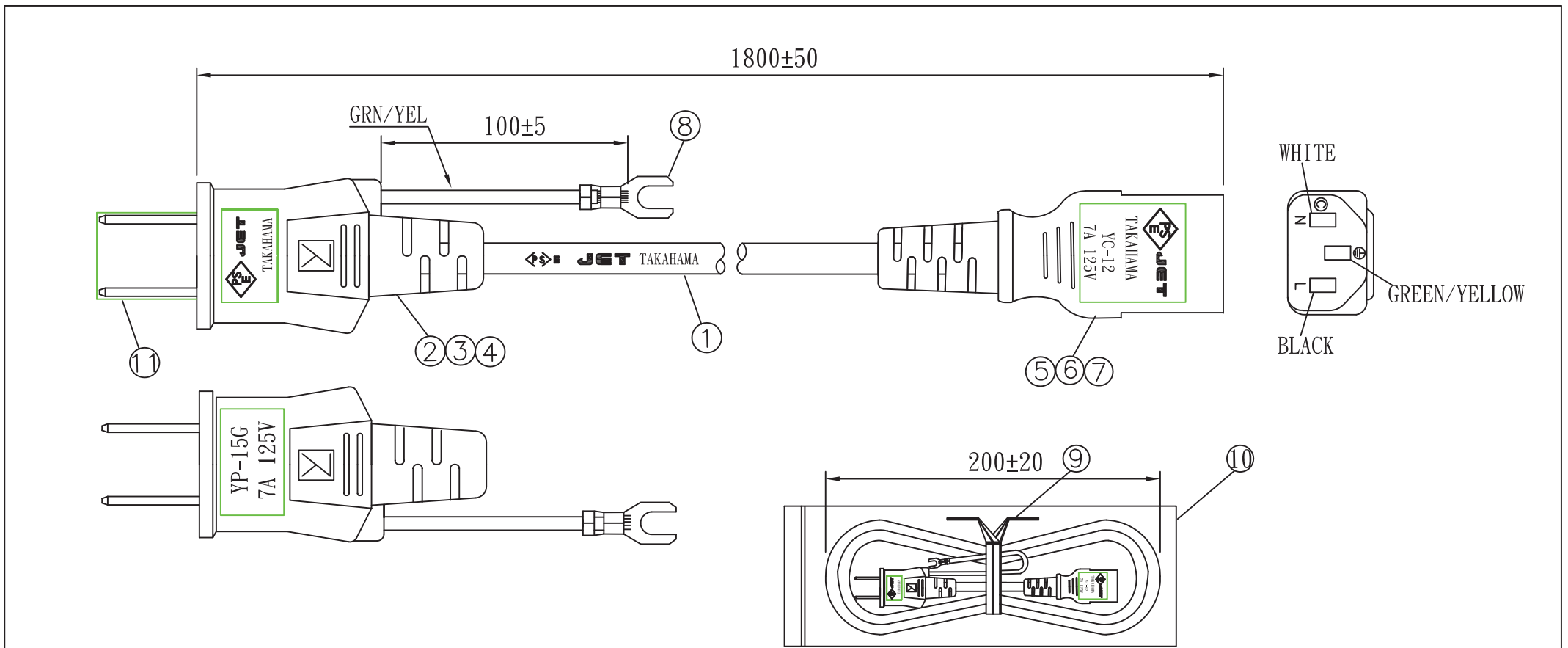
- A. Model Number : ATS120A1-P120 (12V/9A)
- B. DC Power Cord : UL11352 , 16AWG , 1.2M
- C. Average Efficiency :
- | | | |
|-----------------------|-------|------|
| Erp (LOT 7) | 88.0% | Min. |
| DoE Level VI | 88.0% | Min. |
| GEMS Level VI | 88.0% | Min. |
| CoC Tier 2 | 89.0% | Min. |
| CoC Tier 2 (10% Load) | 79.0% | Min. |
- D. NO Load Power Consumption :
- | | |
|---------------|------------|
| Erp (LOT 7) | 0.21W Max. |
| DoE Level VI | 0.21W Max. |
| GEMS Level VI | 0.21W Max. |
| CoC Tier 2 | 0.15W Max. |
- E. Testing Equipment :
- | | | |
|--------------------|----------------|--------|
| a. AC Power Source | : " Chroma " | 6600 |
| b. Electronic Load | : " PRODIGIT " | 3311F |
| c. Power Meter | : " YOKOGAWA " | WT-210 |
| d. Digital Meter | : " ITALLA " | HT326 |
- F. AC Input Voltage : 115Vac/60Hz

	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	10%* I ₀	0%* I ₀
Rms Output Current(mA)	9000mA	6750mA	4500mA	2250mA	900mA	0mA
Rms Output Voltage(V)	11.74V	11.87V	12.01V	12.14V	12.22V	12.27V
Active Output Power(W)	105.62W	80.12W	54.04W	27.32W	11.00W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	1.075A	0.812A	0.562A	0.299A	0.152A	0.051A
Rms Input Power(W)	119.87W	89.71W	60.06W	31.36W	14.14W	0.08W
Total Harmonic Distortion of the input current						
True Power Factor	0.972	0.964	0.932	0.914	0.809	0.002
Power Consumed by UUT(W)	14.25W	9.59W	6.02W	4.04W	3.14W	0.08W
Efficiency	88.11%	89.32%	89.98%	87.12%	77.80%	*
Average Efficiency	88.63%				*	*

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

	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	10%* I ₀	0%* I ₀
Rms Output Current(mA)	9000mA	6750mA	4500mA	2250mA	900mA	0mA
Rms Output Voltage(V)	11.74V	11.88V	12.01V	12.14V	12.22V	12.27V
Active Output Power(W)	105.66W	80.16W	54.05W	27.32W	11.00W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	0.561A	0.436A	0.312A	0.193A	0.120A	0.080A
Rms Input Power(W)	117.73W	88.42W	59.57W	31.58W	13.83W	0.11W
Total Harmonic Distortion of the input current						
True Power Factor	0.915	0.885	0.833	0.713	0.502	0.005
Power Consumed by UUT(W)	12.07W	8.26W	5.52W	4.26W	2.83W	0.11W
Efficiency	89.77%	90.69%	90.77%	86.58%	79.67%	*
Average Efficiency	89.45%				*	*

Tester : jeff.Huang

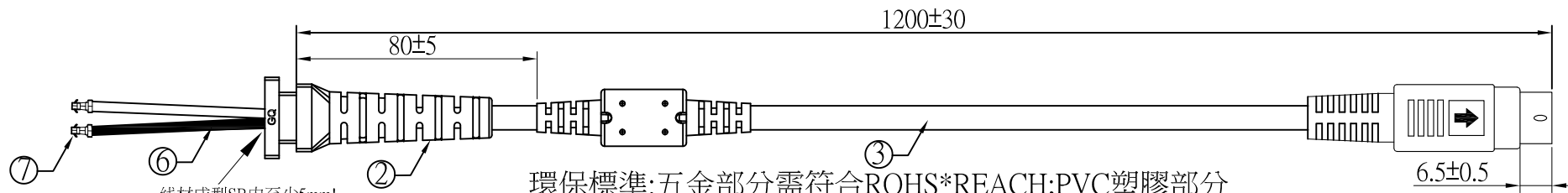


NO.	SPECIFICATION	Q' TY	REMARK
1	VCTF 0.75/3C BLACK PSE	1PC	
2	YP-15G TER:98675BS-1	2PCS	
3	TP-15G INNER BODY	1PC	
4	YP-15G PVC PLASTIC:50P BLACK	23g/PC	
5	YC-12 PVC PLASTIC:50P BLACK	18g/PC	
6	YC-12 TER:97740PS-0	3PCS	
7	YC-12 INNER BODY	1PC	
8	"Y"TER:96552BS-2	1PC	
9	MINI TIE:L=130mm	1PC	
10	LOCK BAG:250*110*0.04mm	1PC	
11	SLEEVE WHITE	1PC	

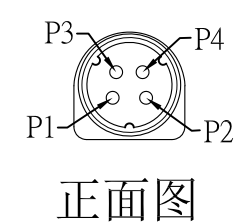
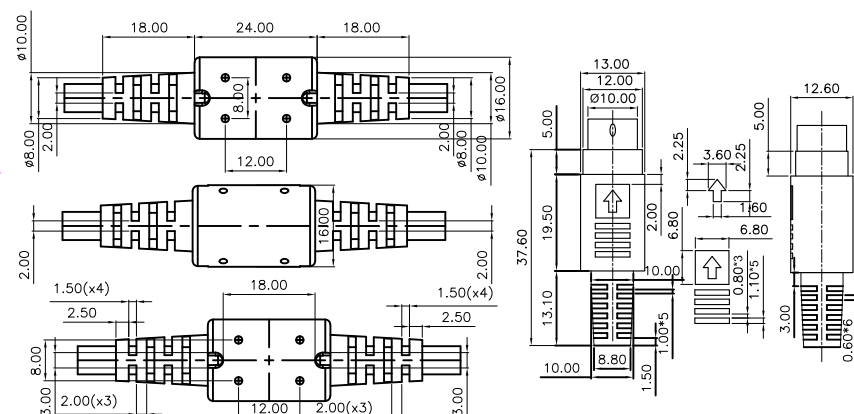
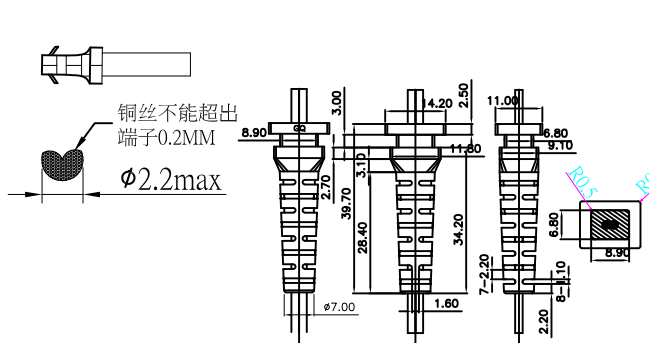
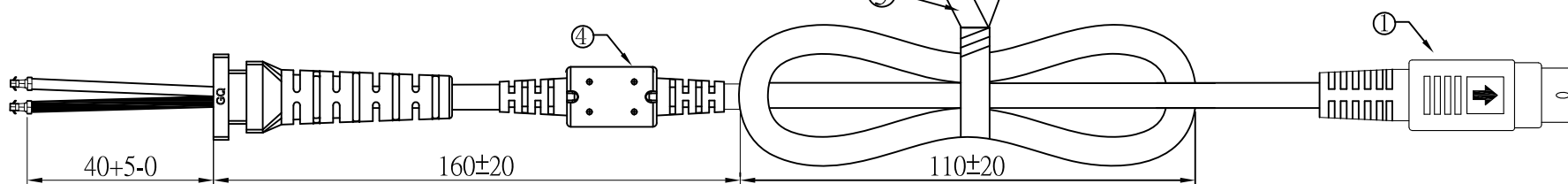
CORD MARKING:

《P》E JET TAKAHAMA VCTF 3G 0.75mm² 20XX -F-

Tolerance >0±0.30 >1.0±0.50 >10.0±1.0 >20.0±2.0 Angle: ±1°	Approved		Date		YUNG LI CO.,LTD			
	Checked		Date					
	Drawn	黃方	Date	15.12.24	Customer	阿達特		
	Cat. No.	YP-15G/YC-12			P/N.	R427A218011		
	Drawing No.	CY-P0335		Rev.	B	Material	P.V.C	Unit
					HEFT(g)			



環保標準:五金部分需符合ROHS*REACH;PVC塑膠部分需符合ROHS*REACH*PAHS*PAES*加州65



正面图

线材	芯线“+”	隔离线“-”
PIN	P2/P4	P1/P3

⑦ 注意:此款线材的隔离线为加粗!

- ① 4PIN粗针公头成型式,外模P-111(泰岳P-180)号模*小网尾(两次成型),外模用PVC 60P黑色胶粒成型
- ② 阿達特模號:外模:SR-A003003,SR-238C号模(SR-BY-033號模),用PVC 75P黑色膠粒成型 吊重:1米/20磅/60秒
- ③ UL 11352 16AWG(TC/0.16*65)*1C+隔离线(TC/0.16*65) 黑亮面 OD:4.0 裁線長度:1260+10-0
- ④ 阿達特模号CO-A008,T-026C号模(BY-041),铁芯规格:12*20*5.6,用PVC 60P黑色胶粒成型
- ⑤ PET无鐵芯紮帶12CM黑色
- ⑥ 黑色热缩套管:φ2.0*50*1PCS
- ⑦ φ2.2双钩基板端子*2PCS

摇摆测试标准:吊重200g,左右60度,40次/分钟,摇摆2000次
單位:mm

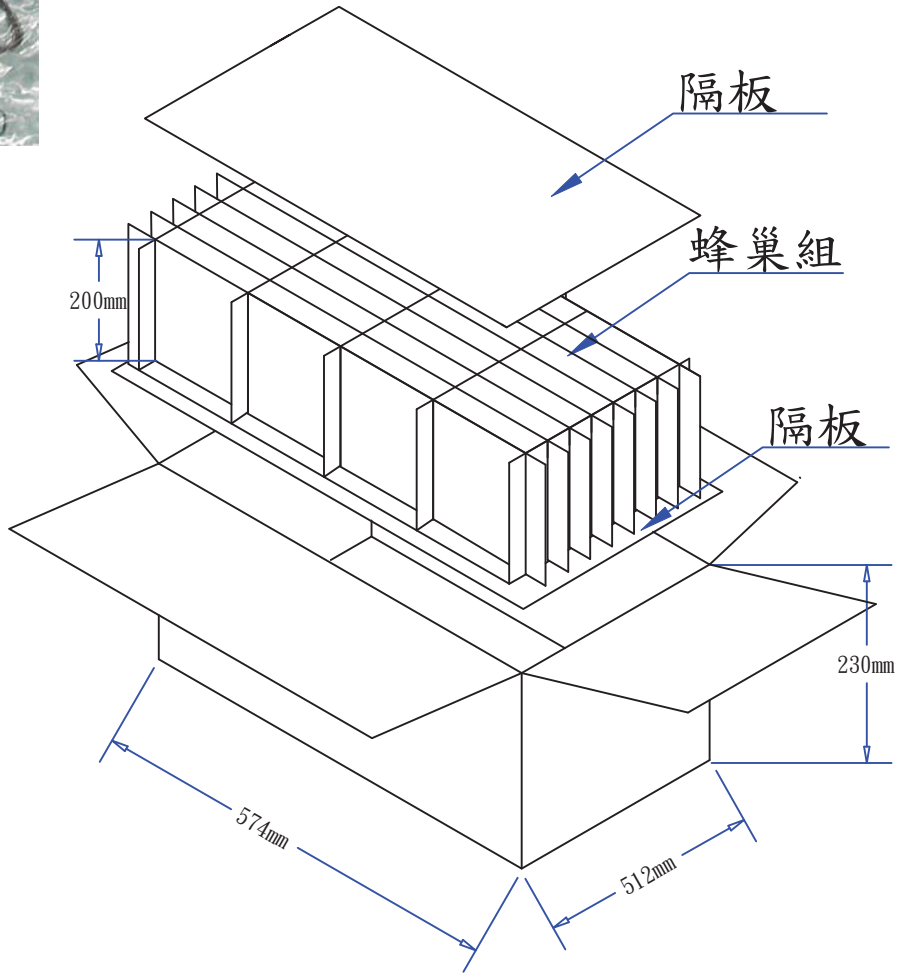
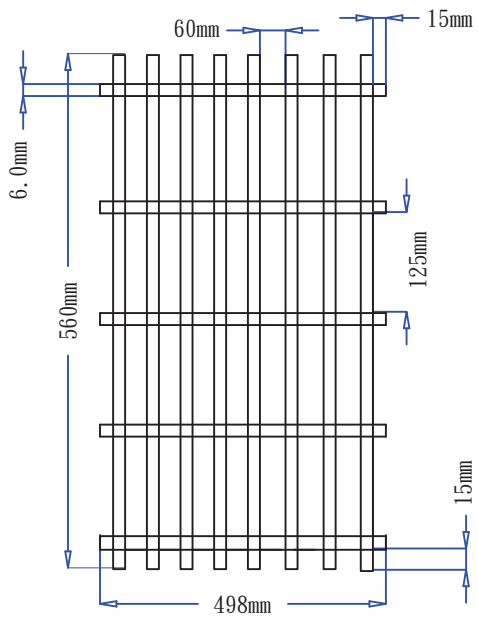
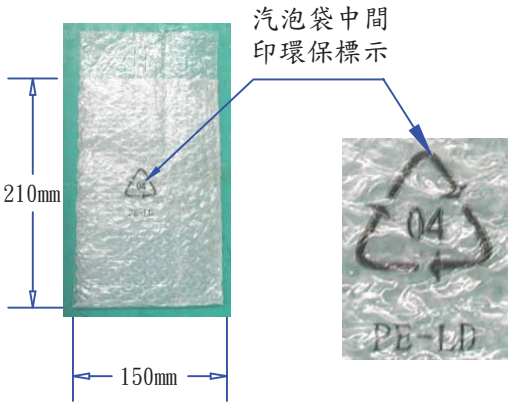
長度(mm)	公差(mm)
2以下	±0.15
2-5	±0.2
5-10	±0.5
10-30	±1
31以上	±1.5

版本	變更內容	變更人	日期
A	新出	李堅圩	2025-12-19

GD 东莞市广多贸易有限公司
廣東省東莞市大朗鎮新馬蓮村新馬路19号A1棟3樓
TEL:0769-83019738 83019739 FAX:0769-83201033

料號	D71B2225312122101613		
客戶	阿達特	制圖	李堅圩
廣多版本	A	頁數	01/01
客戶版本	01	審核	
圖號	ADT-Q3487	日期	2025-12-19

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
△	A	初版制作	15/06/17	SUN
△	B	更新格式	22/09/23	SUN



PIS90W00012 包裝(FOR 90W)-環保雙面氣泡袋-刀卡(邊分)+AC CORD-28

- 9550029101 1. 隔板:560(L)*498(W)*6mm H7H7H 2/28
- 2. 數量:4*7*1=28PCS
- 9520043301 3. 外箱:574(L)*512(W)*230(H)mm K=K 1/28
- 9560029401 4. 5刀卡:560(L)*200(W)*6mm(邊分) H7H7H 8/28
- 9560029501 5. 8刀卡:498(L)*200(W)*6mm(邊分) H7H7H 5/28
- 9540000901 6. 環保雙面汽泡袋:210(L)*150(W)*47mm 無色透明,中間位置須加印環保標示. 1/1
- 7. 成品SR朝上裝入氣泡袋中,對折袋口,然後成品SR朝上裝入蜂巢,AC線材大頭朝上裝入蜂巢位於DC線側,方向須統一.
- 8. 外箱標示為外徑尺寸,以上材料需符合RoHS標準.



阿達特科技股份有限公司
Adapter Technology Co., Ltd.

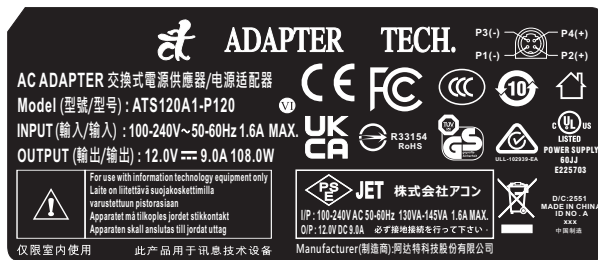
DRAWING NO. PIS90W00012		APPROVAL 1 BY		
UNIT	MODEL NO. 90W刀卡+3芯AC線	APPROVAL 2 BY		
mm	FILE NO. ADT-0346	CHECKED BY(ENGINEER)	Sun	2022/09/23
SCALE	REV. B	SHEET 1/1	DRAWN BY	Moon
Apply for sales		Apply for engineer		Use the sales
				Use the engineer



11. Label

- 11.1 Label materials : Metalized polyester label (silver gloss)
- 11.2 Color : Black background with silver printing
- 11.3 Label dimension : 79 (L)*33.5 (W) +/-0.2 mm
- 11.4 Label thickness : 75#

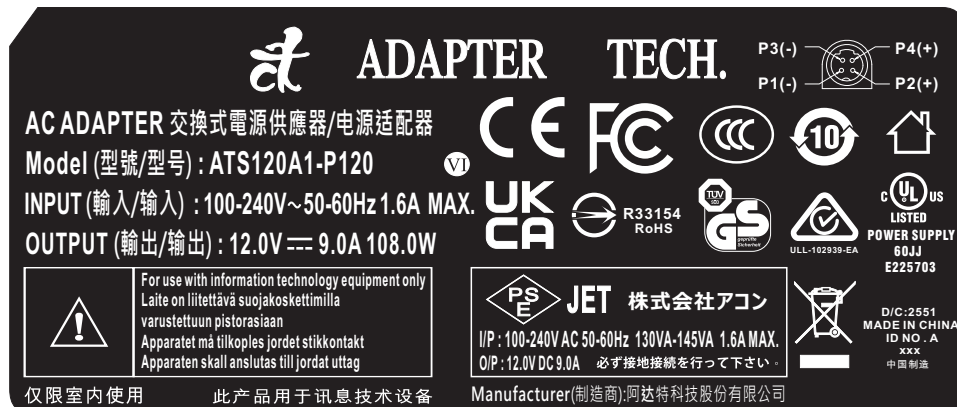
100%



"XXX"

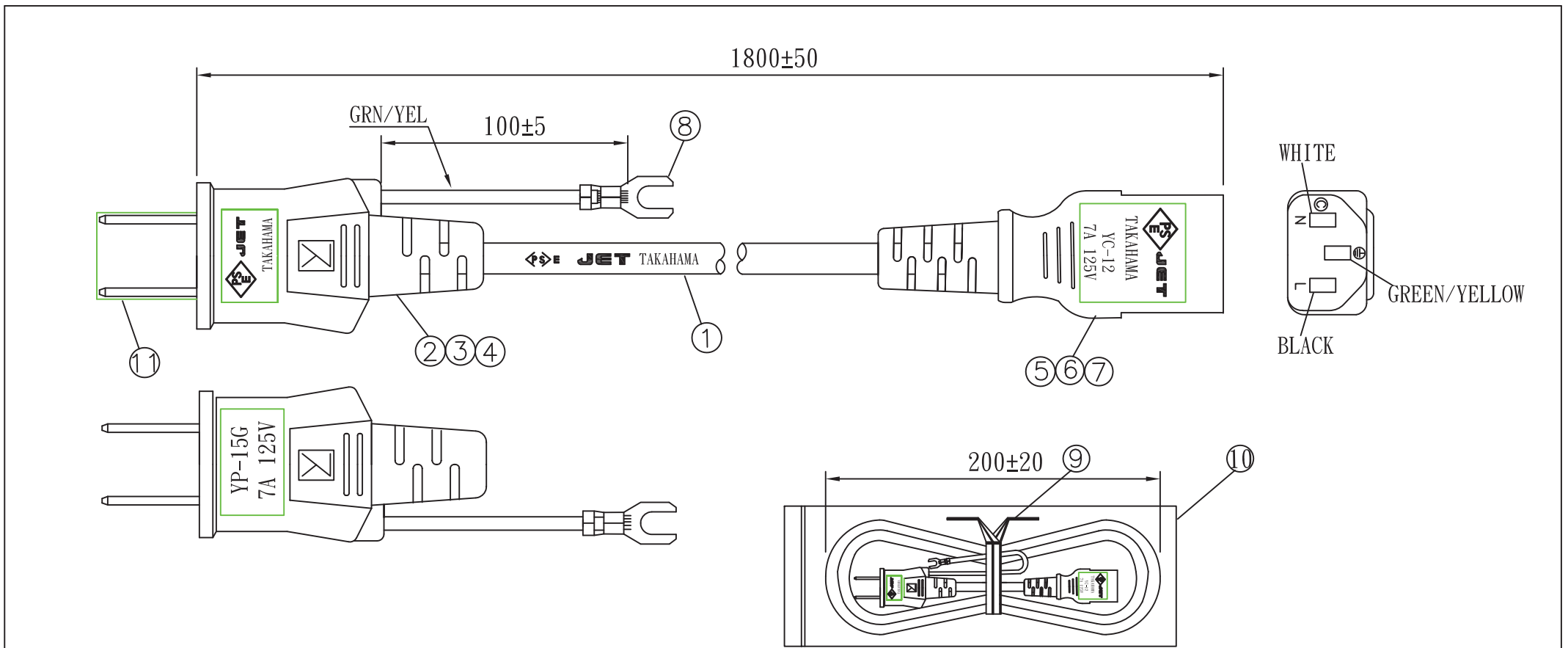
Label supplier's code
It is accurate that the number of words depends on the real finished product

160%



Label Part No :9443136990





NO.	SPECIFICATION	Q' TY	REMARK
1	VCTF 0.75/3C BLACK PSE	1PC	
2	YP-15G TER:98675BS-1	2PCS	
3	TP-15G INNER BODY	1PC	
4	YP-15G PVC PLASTIC:50P BLACK	23g/PC	
5	YC-12 PVC PLASTIC:50P BLACK	18g/PC	
6	YC-12 TER:97740PS-0	3PCS	
7	YC-12 INNER BODY	1PC	
8	"Y"TER:96552BS-2	1PC	
9	MINI TIE:L=130mm	1PC	
10	LOCK BAG:250*110*0.04mm	1PC	
11	SLEEVE WHITE	1PC	

阿達特
2025.12.22
Steven Liao

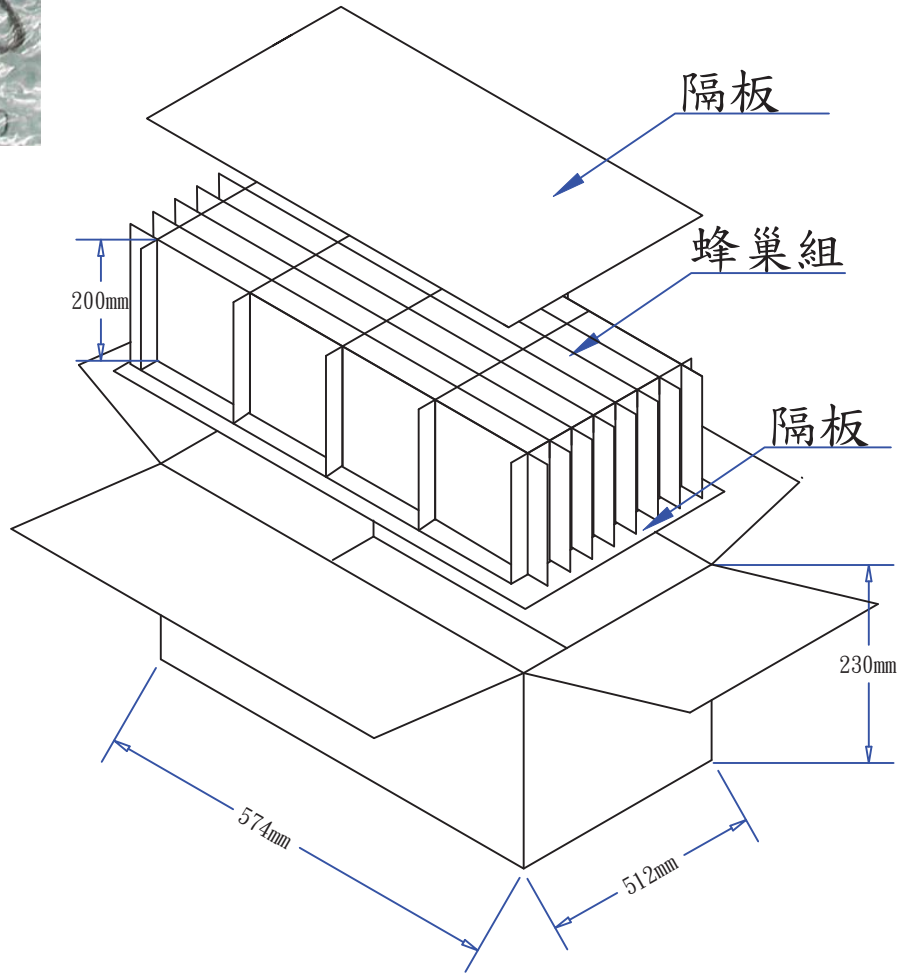
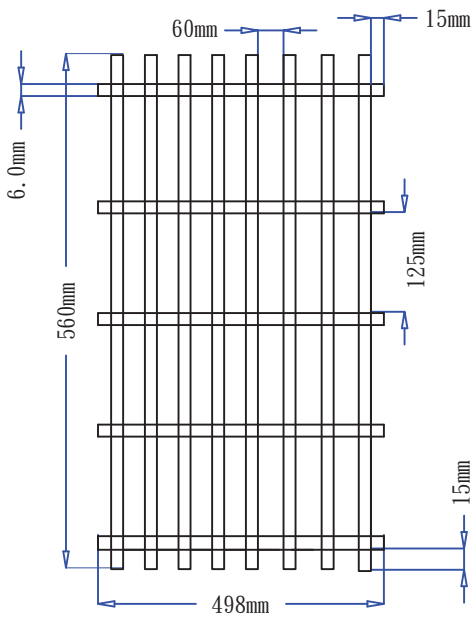
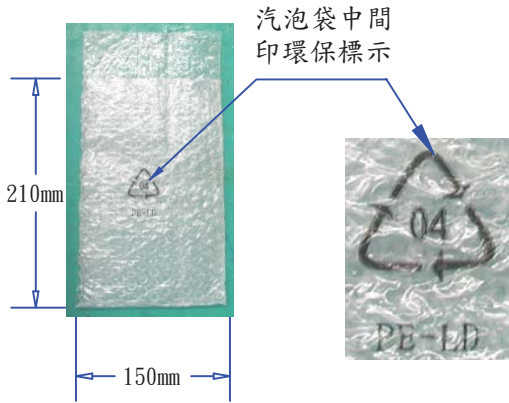
阿達特
2025.12.20
吳煒毅

CORD MARKING:

《P》E JET TAKAHAMA VCTF 3G 0.75mm² 20XX -F-

Tolerance >0±0.30 >1.0±0.50 >10.0±1.0 >20.0±2.0 Angle: ±1°	Approved	Date		YUNG LI CO.,LTD					
	Checked	Date							
	Drawn	黃方	Date	15.12.24	Customer	阿達特			
	Cat. No.	YP-15G/YC-12			P/N.	R427A218011			
	Drawing No.	CY-P0335		Rev.	B	Material	P.V.C	Unit	mm
						HEFT(g)			

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
<input checked="" type="checkbox"/>		用膠帶封口		
<input type="checkbox"/>		無需膠帶封口		
△	A	初版制作	15/06/17	SUN
△	B	更新格式	22/09/23	SUN



PIS90W00012 包裝(FOR 90W)-環保雙面氣泡袋-刀卡(邊分)+AC CORD-28

- | | | | |
|-------------------|---|-------|------|
| <u>9550029101</u> | 1. 隔板:560(L)*498(W)*6mm | H7H7H | 2/28 |
| | 2. 數量:4*7*1=28PCS | | |
| <u>9520043301</u> | 3. 外箱:574(L)*512(W)*230(H)mm | K=K | 1/28 |
| <u>9560029401</u> | 4. 5刀卡:560(L)*200(W)*6mm(邊分) | H7H7H | 8/28 |
| <u>9560029501</u> | 5. 8刀卡:498(L)*200(W)*6mm(邊分) | H7H7H | 5/28 |
| <u>9540000901</u> | 6. 環保雙面氣泡袋:210(L)*150(W)*47mm 無色透明, 中間位置須加印環保標示. 1/1 | | |
| | 7. 成品SR朝上裝入氣泡袋中, 對折袋口, 然後成品SR朝上裝入蜂巢, AC線材大頭朝上裝入蜂巢位於DC線側, 方向須統一. | | |
| | 8. 外箱標示為外徑尺寸, 以上材料需符合RoHS標準. | | |



阿達特科技股份有限公司
Adapter Technology Co., Ltd.

DRAWING NO. PIS90W00012		APPROVAL 1 BY		
UNIT	MODEL NO. 90W刀卡+3芯AC線	APPROVAL 2 BY		
mm	FILE NO. ADT-0346	CHECKED BY(ENGINEER)	Sun	2022/09/23
SCALE	REV. B	SHEET 1/1	DRAWN BY	Moon
				2022/09/23
Apply for sales		Apply for engineer		Use the sales