Adapter Technology Co., Ltd.

Specification for Approval

Customer	:	**AKON CO.,LTD.**
Part Name	:	**AC ADAPTER**
Description	:	**48.0 Volts / 2.5 Amps**
Model No.	:	**ATS120A1-P480 (Level VI)**
Customer P / N	:	
Product P / N	:	**ATS120A1P480D15202**
Issued Date	:	**25 – Feb. – 2026**
Version	:	**A2**
Issued Stamp	:	

Customer's approval signature

ADAPTER TECHNOLOGY CO.,LTD.
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TEL：+886-2-8226-2279 FAX：+886-2-8226-2238
E-mail : service@adaptertech.com.tw；service_tw@adaptertech.com.tw

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

120.0 W
Switching Power Adapter
SPECIFICATION

Model No.	:	**ATS120A1-P480 (Level VI)**
Description	:	**48.0 Volts / 2.5 Amps**
Part No.	:	**ATS120A1P480D15202**
Version	:	**A2**
Date	:	**25 – Feb. – 2026**

Approved	Reviewed	Checked	Prepared	Sales
		阿達特 2026.02.25 吳煒毅	阿達特 2026.02.25 吳煒毅	

■ Approval documents / spec. revised records

■ Customer ： **AKON CO.,LTD.**

■ Model no ： **ATS120A1-P480**

■ Original documents content ： Spec. 11 pages， Attachment 3 pages

Revised Records : No.	Date	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Version
1	Oct./26/2023	Issue	-	Jeff	A1
2	Feb./25/2026	Modify packaging design	Attachment	Eric	A2

1. Feature：

- ♦ Input ： Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ♦ Output ： +48.0 V / 0 ~ 2.5 A
- ♦ 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 / CCC
- ♦ 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 25ºC，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)

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

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	+48.0 V ± 5%
	Current	2.5 A Max.
	Regulation	45.6 Vmin. ~ 48.0 Vtyp. ~ 50.4 Vmax.
	Ripple & Noise	480 mVp-p max.
	Total Power	120.0 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 connected 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 connected 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	-20ºC ~ +40ºC
Storage	-20ºC ~ +80ºC

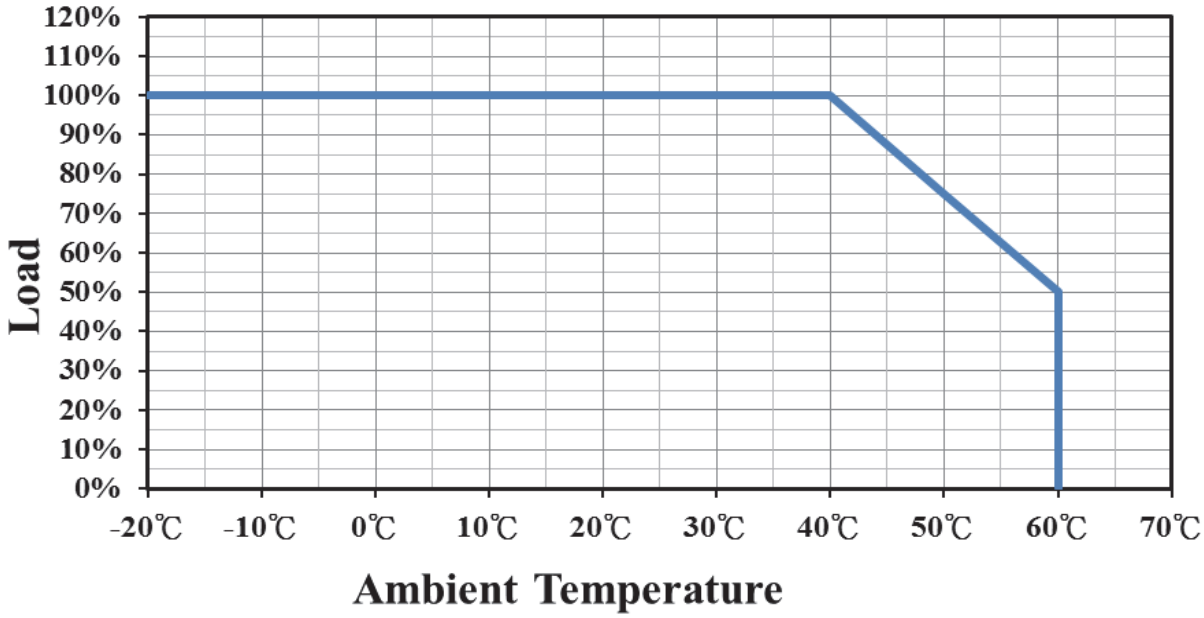
6.2 Humidity range (non-condensing)

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

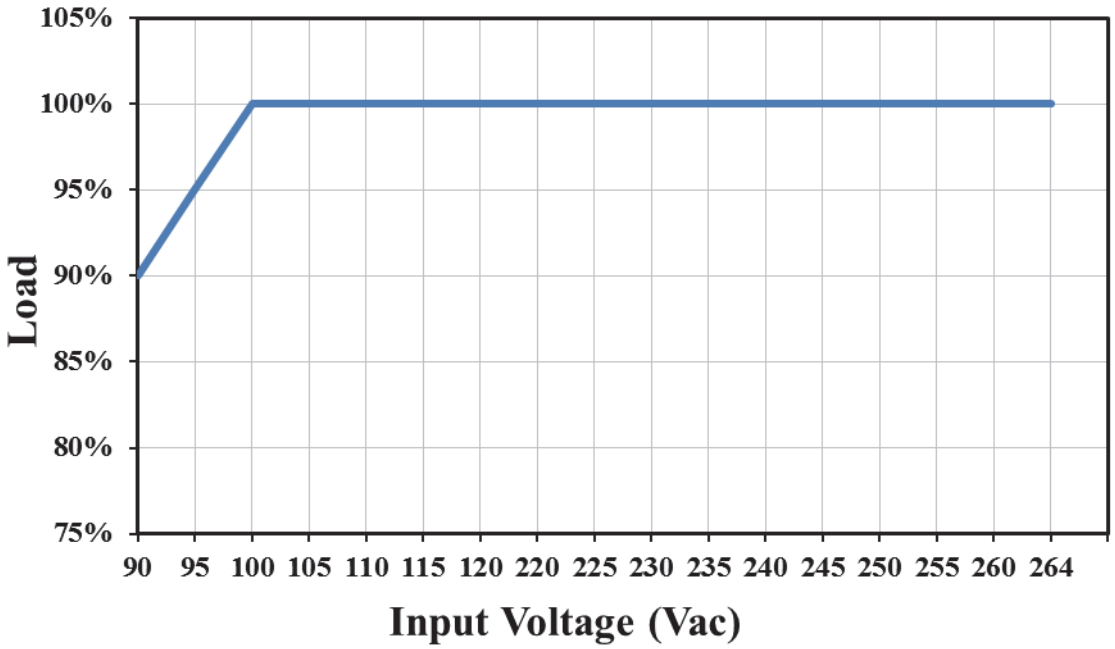
6.3 Cooling : By natural air.

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

8. Derating Curve：



9. Static Characteristics：



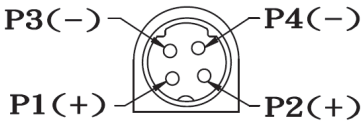
10. Mechanical :

10.1 Weight : 390 g Ref.

10.2 Cable type : Black UL1185 18AWG

(wire + plug)

Plug : 4PIN DIN



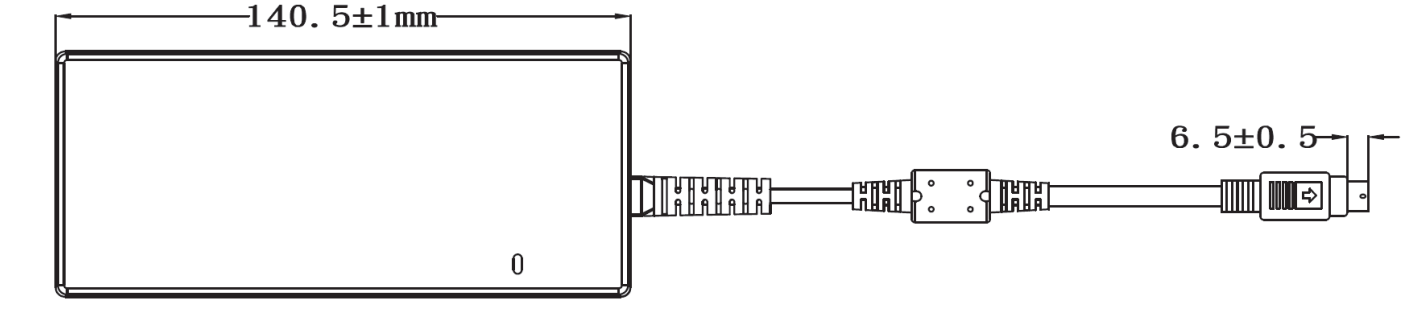
Output cable plug pin assignment

10.3 Cable length : 1500 mm

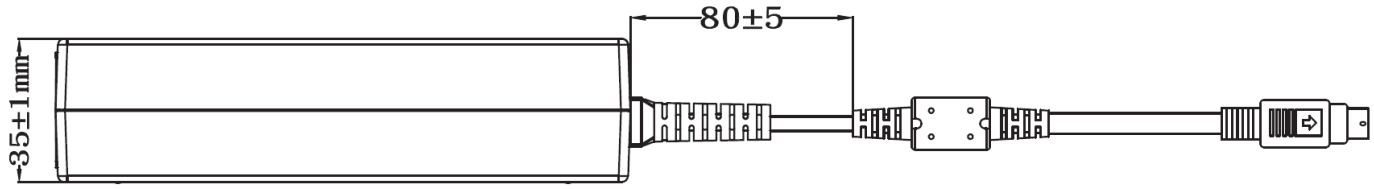
10.4 Case dimension : 140.5 (L) * 60.0 (W) * 35.0 (H) mm ± 1 mm

10.5 Material flammability : UL 94V-0

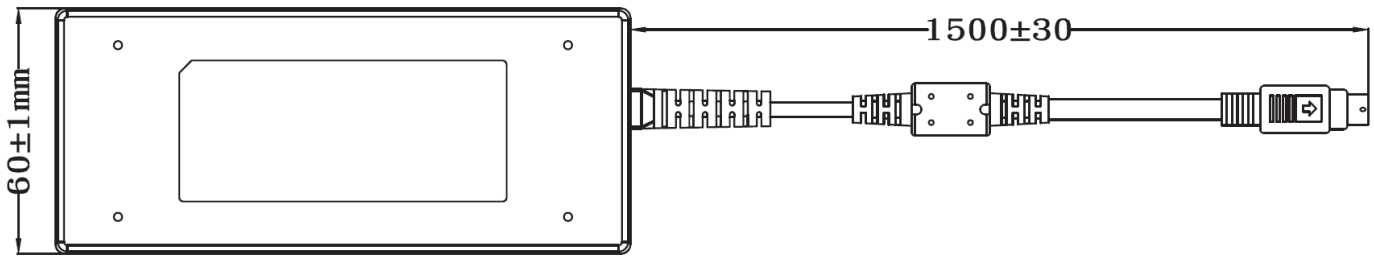
10.6 External appearance : As drawing below (scale → mm)



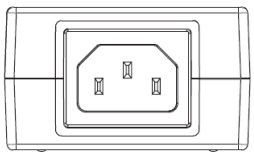
TOP-VIEW



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 :9443130250

A. Line regulation test

Test result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
115 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
132 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
180 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
230 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
264 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V

B. Efficiency test

Test result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	88% Min.	92.01%	92.22%	91.89%
230 Vac	88% Min.	92.45%	92.57%	92.20%
230 Vac	79%Min. (10% Load)	86.11%	86.32%	85.88%

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

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	45.6 V ~ 50.4 V	48.06 V	48.16 V	48.13 V
115 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
115 Vac / 100% Load	45.6 V ~ 50.4 V	47.68 V	47.81 V	47.78 V
230 Vac / 0% Load	45.6 V ~ 50.4 V	48.06 V	48.16 V	48.13 V
230 Vac / 50% Load	45.6 V ~ 50.4 V	47.87 V	47.98 V	47.95 V
230 Vac / 100% Load	45.6 V ~ 50.4 V	47.68 V	47.81 V	47.78 V

D. Ripple & Noise test

Test result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100% Load	480 mVp-p max.	106 mV_{p-p}	100 mV_{p-p}	102 mV_{p-p}
230 Vac / 100% Load	480 mVp-p max.	81.3 mV_{p-p}	80 mV_{p-p}	75 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	72 A

F. Over voltage protection

Test result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 50% Load	Vout * 150% max.	119%	119%	119%
230 Vac / 50% Load	Vout * 150% max.	119%	119%	119%

G. Over current protection

Test result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	Iout * 180% Max.	129%	129%	129%
230 Vac	Iout * 180% Max.	130%	130%	130%

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	0.1 W	0.1 W	0.1 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-P480 (48V/2.5A)

B. DC Power Cord : UL1185 , 18AWG , 1.5M

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 Dequipment :

a. AC Power Source	: " Chroma "	6600
b. Electronic Load	: " PRODIGIT "	3311F
c. Power Meter	: " YOKOGAWA "	WT-210
d. Digital Meter	: " ITALLA "	HT326

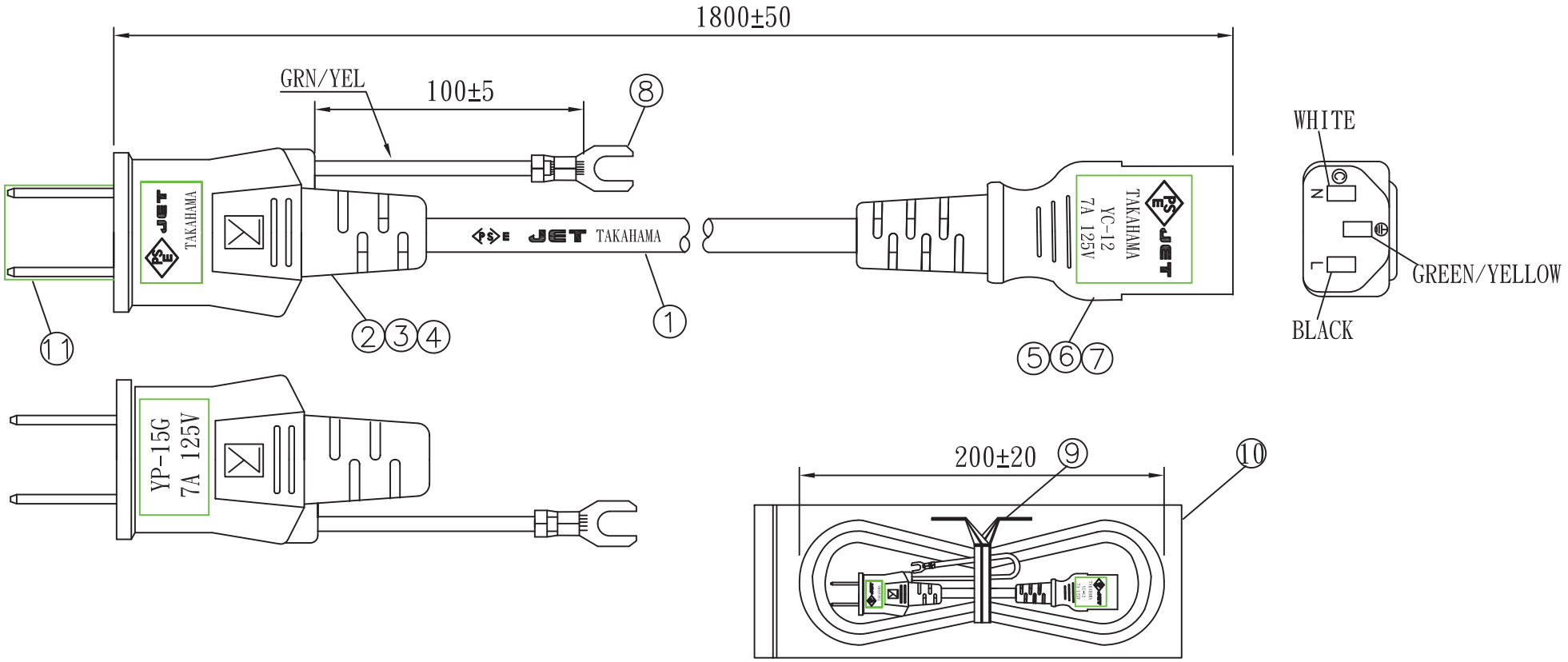
F. AC Input Voltage : 115Vac/60Hz

	100%* I_0	75%* I_0	50%* I_0	25%* I_0	10%* I_0	0%* I_0
Rms Output Current(mA)	2500mA	1875mA	1250mA	625mA	250mA	0mA
Rms Output Voltage(V)	47.92V	48.00V	48.08V	48.16V	48.20V	48.23V
Active Output Power(W)	119.79W	90.00W	60.10W	30.10W	12.05W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	1.153A	0.874A	0.601A	0.316A	0.153A	0.051A
Rms Input Power(W)	129.01W	97.02W	65.00W	33.45W	14.35W	0.09W
Total Harmonic Distortion of the input current						
True Power Factor	0.975	0.966	0.941	0.920	0.813	0.002
Power Consumed by UUT(W)	9.22W	7.02W	4.90W	3.35W	2.30W	0.09W
Efficiency	92.86%	92.76%	92.46%	89.98%	83.97%	*
Average Efficiency	92.01%				*	*

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)	2500mA	1875mA	1250mA	625mA	250mA	0mA
Rms Output Voltage(V)	47.91V	47.99V	48.07V	48.15V	48.20V	48.23V
Active Output Power(W)	119.78W	89.99W	60.09W	30.10W	12.05W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	0.602A	0.466A	0.333A	0.199A	0.120A	0.078A
Rms Input Power(W)	127.72W	96.22W	64.79W	33.59W	14.02W	0.10W
Total Harmonic Distortion of the input current						
True Power Factor	0.923	0.897	0.846	0.732	0.509	0.007
Power Consumed by UUT(W)	7.94W	6.23W	4.70W	3.49W	1.97W	0.10W
Efficiency	93.80%	93.55%	92.79%	89.67%	86.11%	*
Average Efficiency	92.45%				*	*

Tester : jeff.Huang



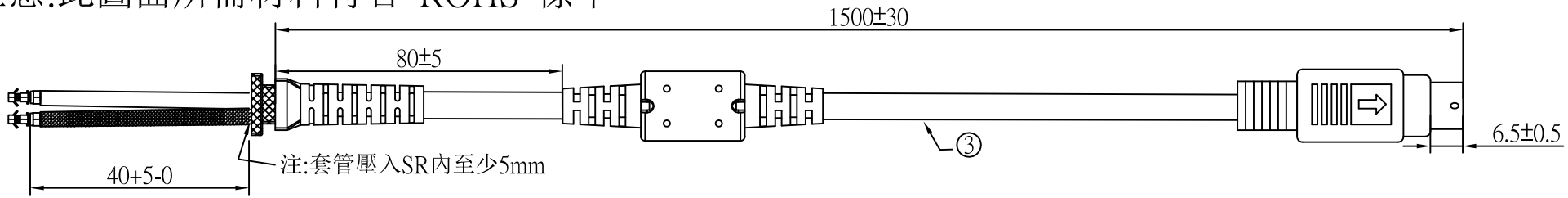
NO.	SPECIFICATION	Q'TY	REMARK
1	VCTF 0.75/3C BLACK PSE	1PC	
2	YP-15G TER:98675BS-1	2PCS	
3	TP-15G INNER BODY	1PC	
4	YP-15G PVC PLASTIC:50P BLACK	23g/PC	
5	YC-12 PVC PLASTIC:50P BLACK	18g/PC	
6	YC-12 TER:97740PS-0	3PCS	
7	YC-12 INNER BODY	1PC	
8	"Y"TER:96552BS-2	1PC	
9	MINI TIE:L=130mm	1PC	
10	LOCK BAG:250*110*0.04mm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

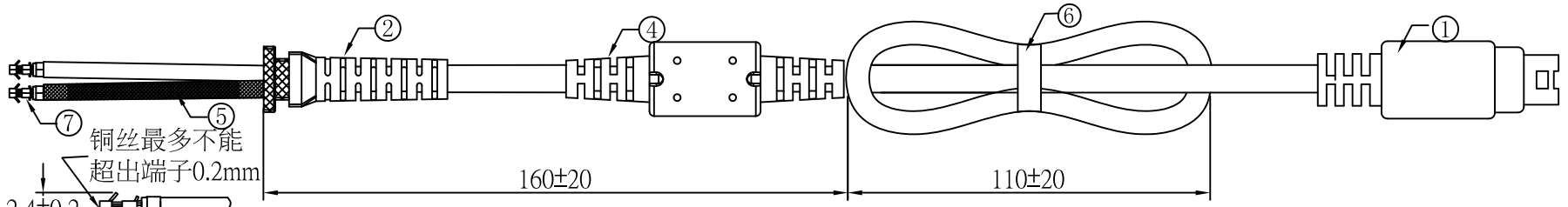
CORD MARKING:

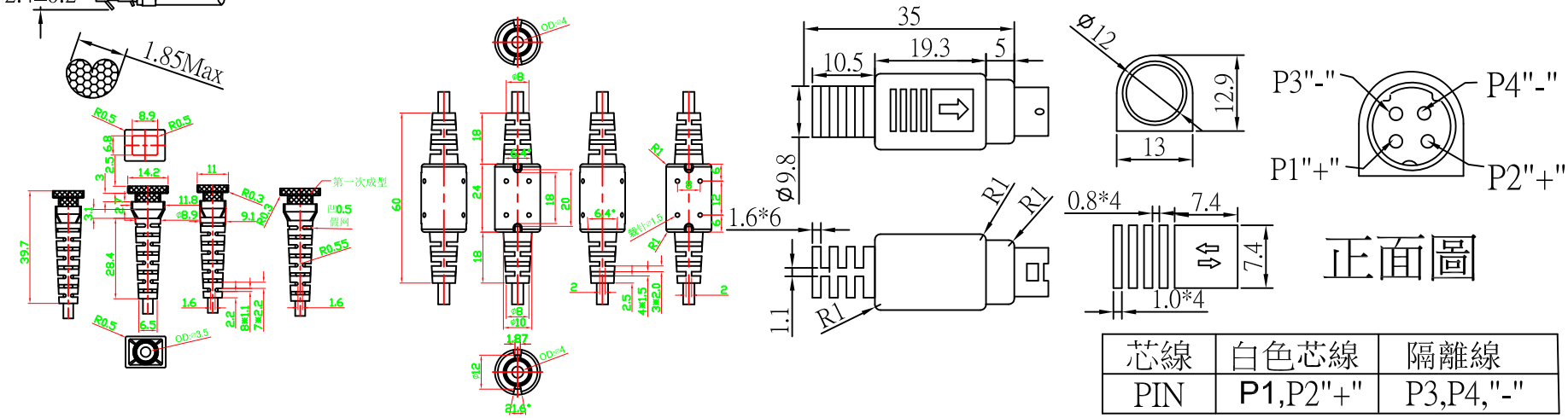
PS E JET TAKAHAMA VCTF 3G 0.75mm^2 20XX -F-

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)		

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,"-"

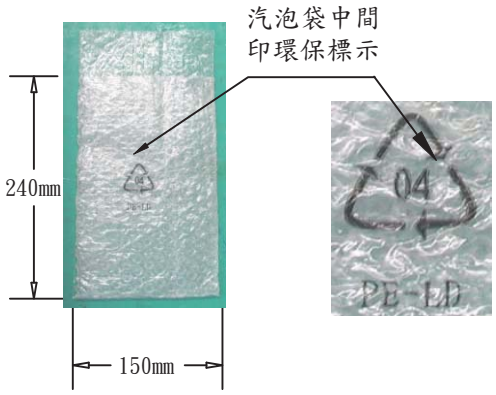
① 4PIN 粗針成型式,外模P-180号模(二次成型)大網尾,单箭頭, 用料PVC60P黑色(防火等级:94V-0)
② SR-BY-034号模(阿达特模号：外模:SR-A004001/内模:SR-A003001-IN）(二次成型),外模 用料PVC75P黑色, 内模用料 PVC25P黑色(防火等级:94V-0)), 吊重:1米/20磅/60秒
③ UL 1185 18AWG(0.18*34)單芯隔離線 (0.12*54)BK亮(防火等级:VW-1) OD:3.5裁線長度:1560+10/-0
④ 鐵芯規格:12*20*5.6 ,外模:BY-041(阿达特模号:CO-A008)用料PVC60P黑色(防火等级:94V-0)
⑤ 熱縮套管:ø2*50
⑥ PE无鐵芯紮帶12CM
⑦ 1.8双钩机板端*2PCS(进文提供:P1815-A)
⑧ 單位:MM
*注:BY-031(SR-A003001)&BY-032(SR-A003002)&BY-033(SR-A003003)&BY-034(SR-A004001) 共用内模(SR-A003001-IN)

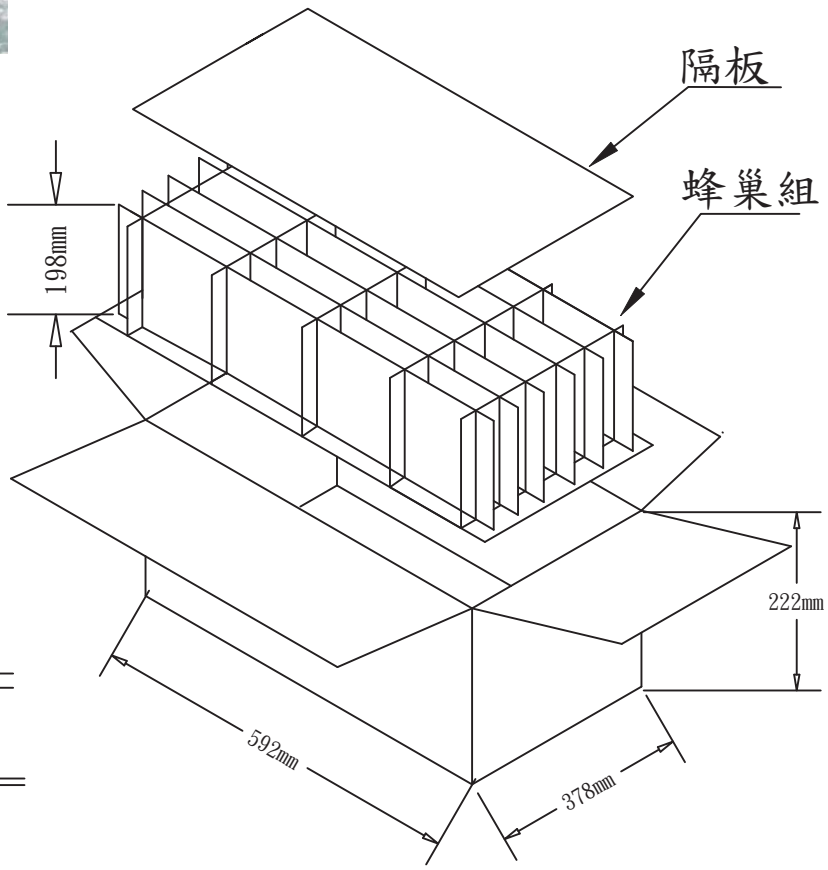
一 般 公 差 表			
1.0mm以下	±0.1mm	15.0mm以下	±0.60mm
2.0mm以下	±0.15mm	20.0mm以下	±0.80mm
3.0mm以下	±0.20mm	30.0mm以下	±1.0mm
10.0mm以下	±0.50mm	30.0mm以上	±1.2mm

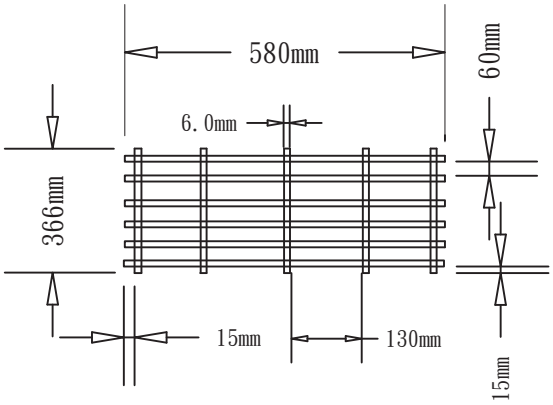
版次	变更内容	日期
02		
01	新出	2023/10/19

料號	D7122222411152101713		
客戶	阿達特	制圖	陶胜英
頁數	01	審核	
		批準	
泰岳電子有限公司			
圖號	ADT-7429	日期	2023/10/19

	REVISIONS				
☑ 用膠帶封口	SHOW	REV	DESCRIPTION	DATE	APPROVED
☐ 無需膠帶封口	⚠	A	初版制作	14/01/02	SUN
	⚠	B	更新格式	22/04/02	SUN







PIS120W0016 包裝(FOR 120W)(K=K) 環保雙面汽泡袋-刀卡-AC線-20

95500248011.	隔板:580(L)*366(W)*6mm		K=K	2/20
	2. 數量:20*1=20PCS			
9520009201	3. 外箱:592(L)*378(W)*222(H)mm		K=K	1/20
9560025901	4. 5刀卡:580(L)*198(W)*6mm	(邊分)	K=K	6/20
9560026001	5. 6刀卡:366(L)*198(W)*6mm	(邊分)	K=K	5/20
9540003901	6. 環保雙面汽泡袋:240(L)*150(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, 對折袋口, LABEL朝向環保標示, SR部份朝上放入蜂巢內, AC線放在成品的右側. 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.

阿達特科技股份有限公司 正式 工程二部 發行章

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

DRAWING NO. PIS120W0016		APPROVAL 1 BY		
UNIT mm	MODEL NO. STD24050-120W(AC)	APPROVAL 2 BY		
	FILE NO. ADT-0245	CHECKED BY(ENGINEER)	Sun	2022/04/02
SCALE	REV. B SHEET 1/1	DRAWN BY	Moon	2022/04/02

Apply for sales	Apply for engineer	Use the sales	Use the engineer
	阿達特 2022.04.06 林詠育		

9.Label

9.1 Label materials	:	Metalized polyester label (silver gloss)
9.2 Color	:	Black background with silver printing
9.3 Label dimension	:	79 (L)*33.5 (W) +/-0.2 mm
9.4 Label thickness	:	75#

100%

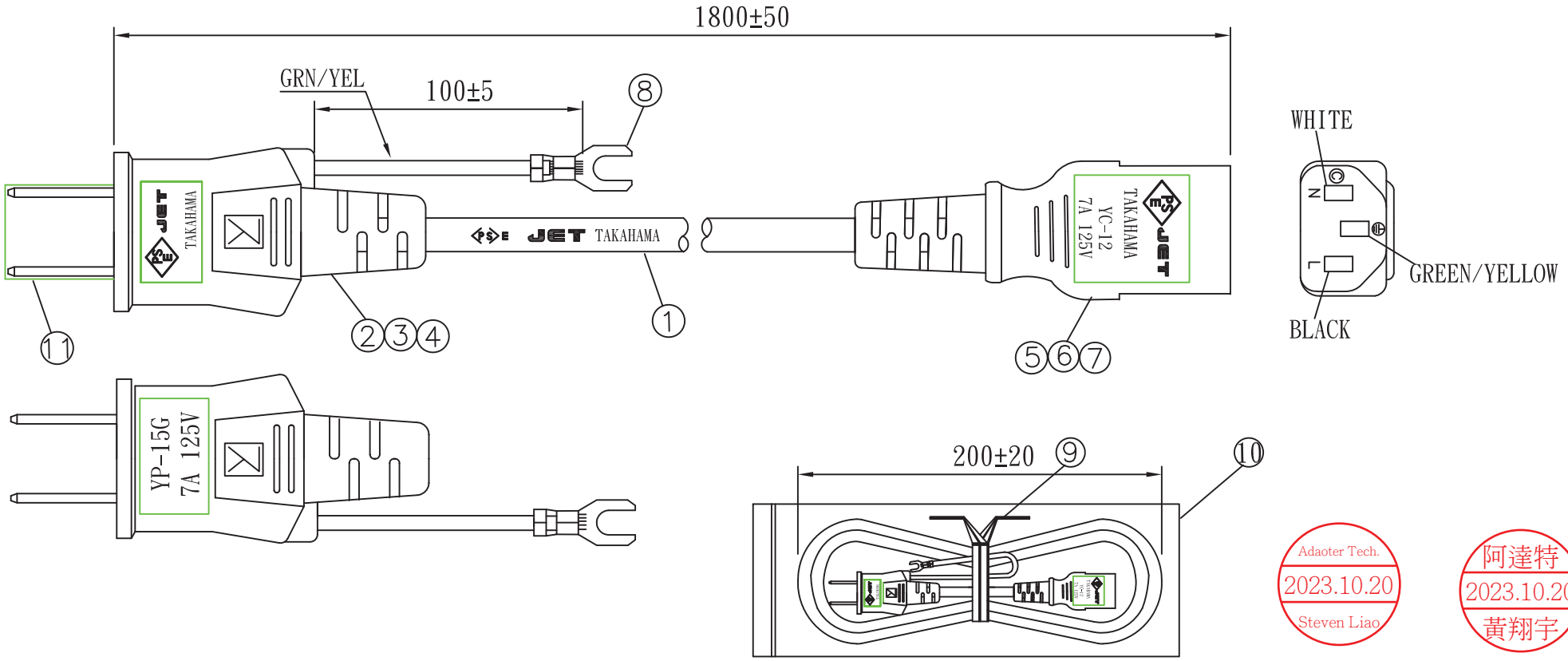
"XXX"
Label supplier's code
It is accurate that the number of words depends on the real finished product

160%

Label Part No :9443130250

阿達特 2023.10.20 黃翔宇

Adaoter Tech. 2023.10.20 Steven Liao



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2023.10.20
Steven Liao

阿達特
2023.10.20
黃翔宇

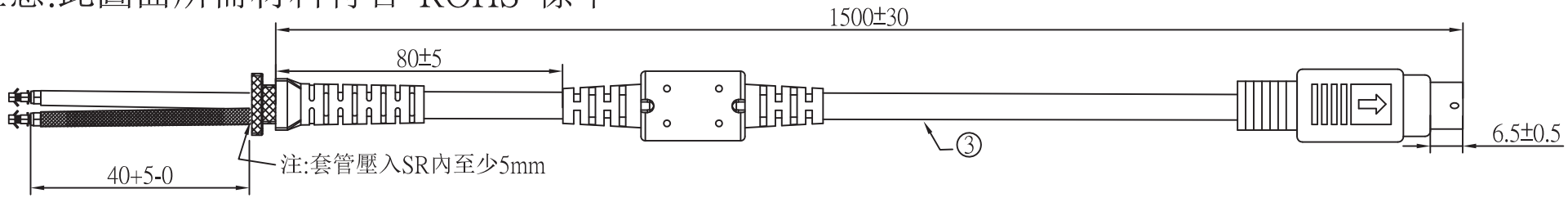
NO.	SPECIFICATION	Q'TY	REMARK
1	VCTF 0.75/3C BLACK PSE	1PC	
2	YP-15G TER:98675BS-1	2PCS	
3	TP-15G INNER BODY	1PC	
4	YP-15G PVC PLASTIC:50P BLACK	23g/PC	
5	YC-12 PVC PLASTIC:50P BLACK	18g/PC	
6	YC-12 TER:97740PS-0	3PCS	
7	YC-12 INNER BODY	1PC	
8	"Y"TER:96552BS-2	1PC	
9	MINI TIE:L=130mm	1PC	
10	LOCK BAG:250*110*0.04mm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

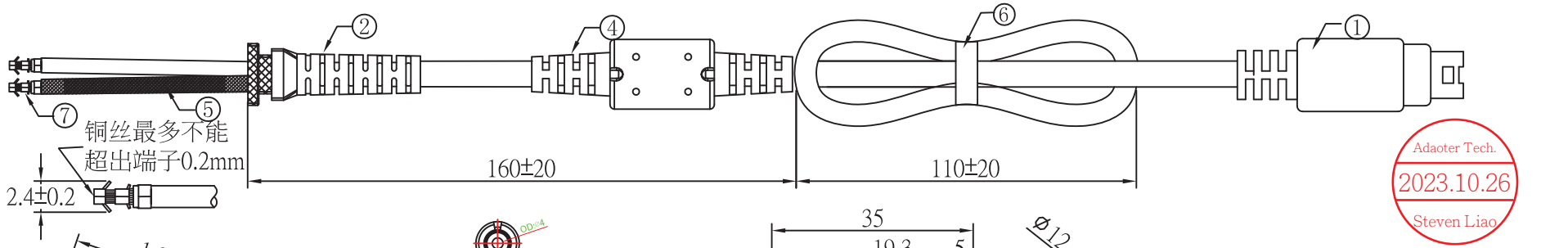
CORD MARKING:

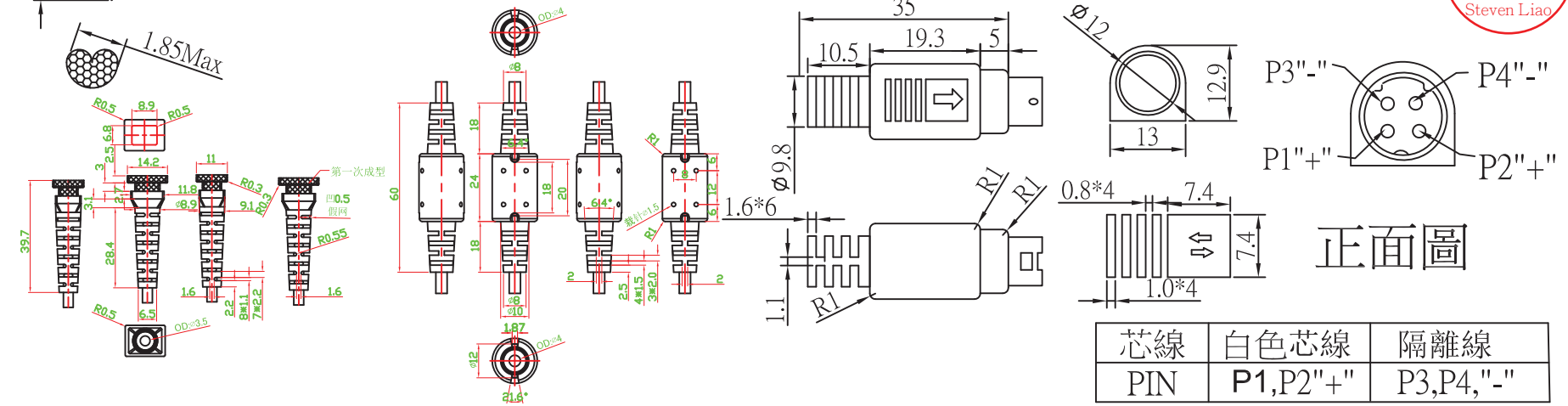
PS E JET TAKAHAMA VCTF 3G 0.75mm² 20XX -F-

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)		

注意:此圖面所需材料符合"ROHS"標準







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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(防火等级:94V-0)
② SR-BY-034号模(阿达特模号：外模:SR-A004001/内模:SR-A003001-IN）(二次成型),外模 用料PVC75P黑色, 内模用料 PVC25P黑色(防火等级:94V-0)), 吊重:1米/20磅/60秒
③ UL 1185 18AWG(0.18*34)單芯隔離線 (0.12*54)BK亮(防火等级:VW-1) OD:3.5裁線長度:1560+10/-0
④ 鐵芯規格:12*20*5.6 ,外模:BY-041(阿达特模号:CO-A008)用料PVC60P黑色(防火等级:94V-0)
⑤ 熱縮套管:ø2*50
⑥ PE无鐵芯紮帶12CM
⑦ 1.8双钩机板端*2PCS(进文提供:P1815-A)
⑧ 單位:MM
*注:BY-031(SR-A003001)&BY-032(SR-A003002)&BY-033(SR-A003003)&BY-034(SR-A004001) 共用内模(SR-A003001-IN)

阿達特
2023.10.26
黃翔宇

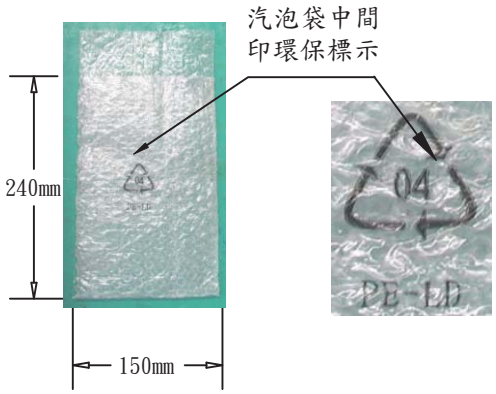
一 般 公 差 表			
1.0mm以下	±0.1mm	15.0mm以下	±0.60mm
2.0mm以下	±0.15mm	20.0mm以下	±0.80mm
3.0mm以下	±0.20mm	30.0mm以下	±1.0mm
10.0mm以下	±0.50mm	30.0mm以上	±1.2mm

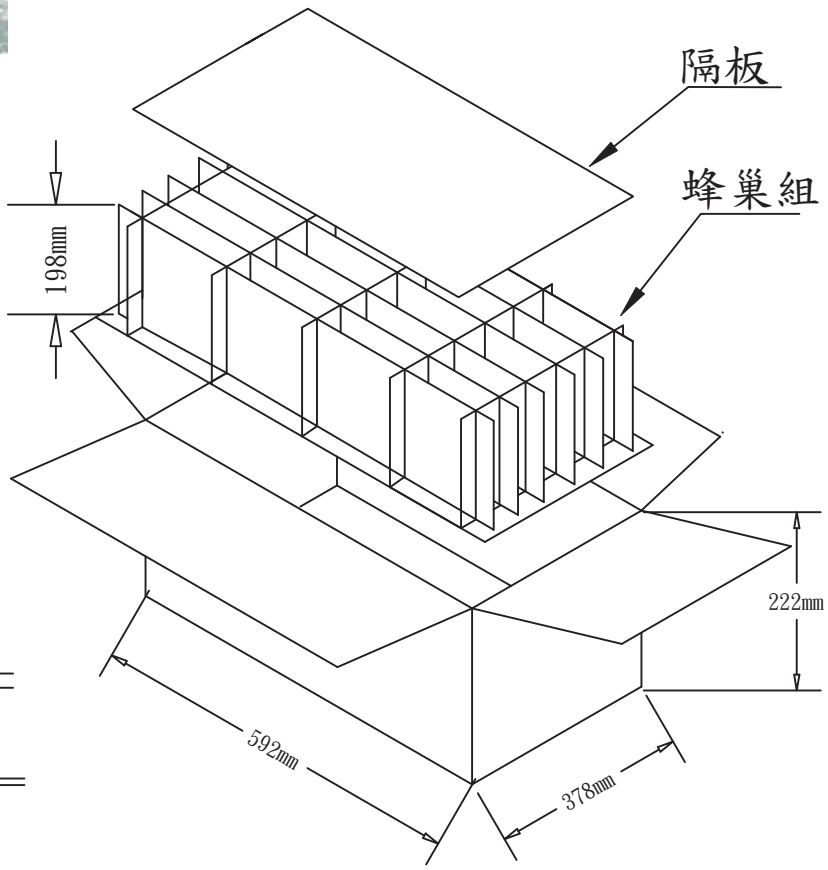
版次	变更内容	日期
02		
01	新出	2023/10/19

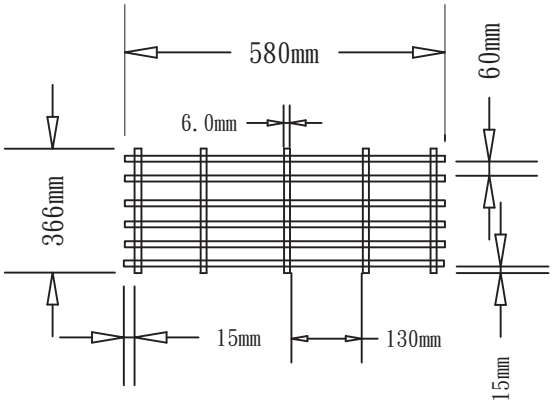
料號	D7122222411152101713		
客戶	阿達特	制圖	陶胜英
頁數	01	審核	
		批準	
泰岳電子有限公司			
圖號	ADT-7429	日期	2023/10/19

☑ 用膠帶封口
☐ 無需膠帶封口

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
⚠	A	初版制作	14/01/02	SUN
⚠	B	更新格式	22/04/02	SUN







PIS120W0016 包裝(FOR 120W)(K=K) 環保雙面汽泡袋-刀卡-AC線-20

9550024801	1. 隔板:580(L)*366(W)*6mm		K=K	2/20
	2. 數量:20*1=20PCS			
9520009201	3. 外箱:592(L)*378(W)*222(H)mm		K=K	1/20
9560025901	4. 5刀卡:580(L)*198(W)*6mm	(邊分)	K=K	6/20
9560026001	5. 6刀卡:366(L)*198(W)*6mm	(邊分)	K=K	5/20
9540003901	6. 環保雙面汽泡袋:240(L)*150(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, 對折袋口, LABEL朝向環保標示, SR部份朝上放入蜂巢內, AC線放在成品的右側. 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.			

阿達特科技股份有限公司 正式 工程二部 發行章

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

DRAWING NO. PIS120W0016		APPROVAL 1 BY		
UNIT mm	MODEL NO. STD24050-120W(AC)	APPROVAL 2 BY		
	FILE NO. ADT-0245	CHECKED BY(ENGINEER)	Sun	2022/04/02
SCALE	REV. B SHEET 1/1	DRAWN BY	Moon	2022/04/02

Apply for sales	Apply for engineer	Use the sales	Use the engineer
	阿達特 2022.04.06 林詠育	阿達特 2026.02.05 Steven Liao	阿達特 2026.02.05 吳煒毅