

Specification for Approval

Customer : Linkman CO.,LTD

Part Name : AC ADAPTER

Description : **15.0Volts / 2.4Amps**

Model No. : ATS036T-W150U(Level VI)

Customer P / N :

Product P / N : ATS036TW150U415202

Issued Date : 12 - Jan. - 2023

Version : **A1**

Issued Stamp :

Customer's Approval Signature

36.0W
AC ADAPTER
SPECIFICATION

Model No. : **ATS036T-W150U(Level VI)**

Description : **15.0Volts / 2.4Amps**

Part No. : **ATS036TW150U415202**

Version : **A1**

Date : **12 - Jan. - 2023**

Approved	Reviewed	Checked	Prepared	Sales

■ Approval Documents/Spec. Revised Records

■ Customer : Linkman CO.,LTD

■ Model No. : ATS036T-W150U

■ Original Documents Content : SPEC. 10 Page(s) , Attachment 4 Pages

Revised Records : No.	Date	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Remark
1	Jan./12/2023	Issue	-	Jordan	A1
2					
3					
4					
5					
6					
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1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ◆ **Output** : 15.0V / 0~2.4A
- ◆ **Case Dimension** : 79(L) * 34 (W) * 74(H) mm
- ◆ **Efficiency** : Eff (av) $\geq$ 87.40%
Eff $\geq$ 78.303% (At 230V/50Hz input@10% load for CoC Tier2)
- ◆ **Safety** : UL / CUL / PSE / BSMI
- ◆ **EMI** : FCC (conduction & radiation Class B)
- ◆ **Protection** : OVP (Over Voltage Protection) 、 SCP (Short Circuit Protection) 、 OCP (Over Current Protection)
- ◆ Suitable for usage at I.T.E., industrial controller
- ◆ Meet DoE VI / ErP (Lot 7) / GEMS / NRCan / CEC

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	50 ~ 60 Hz
2.3 Current	1A Max.
2.4 Inrush Current	70A Max. / 230Vac (Cold Start At 25 °C , Full Load) (ac source chroma 6530)
2.5 Efficiency	Eff (av) $\geq$ 87.40 % (At 115 Vac & 230 Vac) Eff $\geq$ 78.303% (At 230V/50Hz input@10% load for CoC Tier2)
2.6 Power Consumption	Pi $\leq$ 0.1 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	15.0V $\pm$ 5%
	Current	2.4A Max.
	Regulation	14.25Vmin. ~ 15.00Vtyp. ~ 15.75Vmax.
	Ripple & Noise	150 mVpp Max.
	Total Power	36.0W Max.

Remark : For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1 μ F multilayer Cap. and a Low ESR Electrolytic Cap. (47 μ F) 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)	I out *200%(Max)

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 requirement :

5.1. Dielectric strength : Cut off current 10 mA

(1)	Primary to secondary	3000Vac (RMS) for 1 minute
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5.2. Insulation resistance :

(1)	Primary to secondary	10 MΩ for 500Vdc
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5.3 Leakage current : Less than 0.25 mA

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.Mechanical :

8.1 Weight : 160 g Typical

8.2 Cable Type : Black UL2468 18AWG

(Wire + Plug)

Plug : $\varnothing 5.5 \times \varnothing 2.1 \times 9.5 \text{mm}$

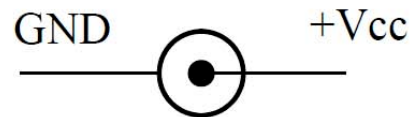
(Tuning Fork & Cannelure)

8.3 Cable Length : 1500mm

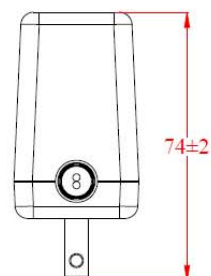
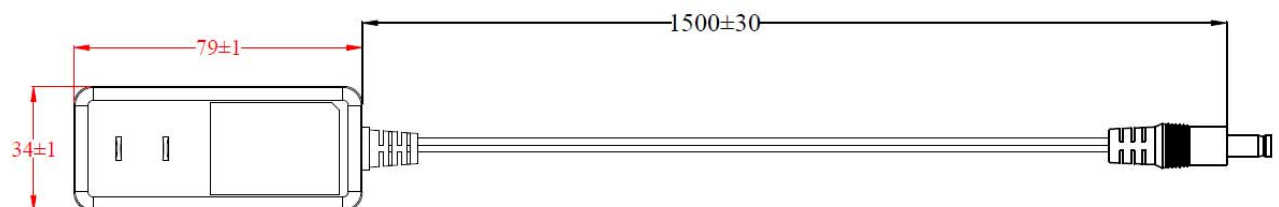
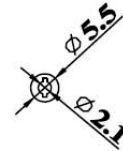
8.4 Case Dimension : 79mm(L)*34mm(W)*74mm(H)

8.5 Material Flammability : UL 94V-0

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



Output Cable Plug Pin Assignment



8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
 Color : Black Background with Silver Printing
 Label Dimension : 34.4mm(L)*24.4mm(W)+/-0.1mm
 Label Thickness : 75#

100%



300%



"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.

Label Part No.:9443127240
REV.: A

A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
115Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
132Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
180Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
230Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
264Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	87.40% Min	88.23 %	88.34 %	88.41 %
230Vac	87.40% Min	88.30 %	88.32 %	88.33 %
230Vac@10% load	78.30% Min	84.21 %	84.25 %	84.28 %

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

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	14.25 V ~ 15.75 V	15.06 V	15.05 V	15.09 V
115Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
115Vac / 100 % Load	14.25 V ~ 15.75 V	14.86 V	14.85 V	14.89 V
230Vac / 0 % Load	14.25 V ~ 15.75 V	15.06 V	15.05 V	15.09 V
230Vac / 50 % Load	14.25 V ~ 15.75 V	14.96 V	14.95 V	14.99 V
230Vac / 100 % Load	14.25 V ~ 15.75 V	14.86 V	14.85 V	14.89 V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	150 mVpp Max.	83.8 mV	89.6 mV	74.0 mV
230Vac / 100 % Load	150 mVpp Max.	83.6 mV	89.7 mV	74.4 mV

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	70A Max	60.8 A	53.1 A	54.5 A

F. Output Current Protection

Test Result Test Result

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	Iout*200%(Max)	154 %	148 %	147 %
230Vac	Iout*200%(Max)	153 %	144 %	142 %

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

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	≤ 0.10 W	0.040 W	0.041 W	0.040 W
230Vac / 0 % Load	≤ 0.10 W	0.067 W	0.068 W	0.067 W

Efficiency Test Report

A.	Model Number	: ATS036T-W150Z	15.0V	2.40A	36.00W
B.	DC Power Cord	: UL2468 18AWG , 1.5M			
C.	Average Efficiency	:			
	Erp (Lot 7)	$0.071 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.67 =$	87.403%	Min.	
	DoE Level VI	$0.071 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.67 =$	87.403%	Min.	
	GEMS Level VI	$0.071 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.67 =$	87.403%	Min.	
	CoC Tier 2	$0.071 \cdot \ln(P_{no}) - 0.00115 \cdot P_{no} + 0.67 =$	88.303%	Min.	
	CoC Tier 2 (10% Load)	$0.071 \cdot \ln(P_{no}) - 0.00115 \cdot P_{no} + 0.57 =$	78.303%	Min.	
D.	NO Load Power Consumption	:			
	Erp (Lot 7)	0.1W Max.			
	DoE Level VI	0.1W Max.			
	GEMS Level VI	0.1W Max.			
	CoC Tier 2	0.075W Max.			
E.	Testing Equipment	:			
	a. AC Power Source	: " Zentech " 2700M-10			
	b. Electronic Load	: " PRODIGIT " 3311C			
	c. Power Meter	: " YOKOGAWA " WT-210A			
	d. Digital Meter	: " FLUKE " 45			
F.	AC Input Voltage	: 115Vac/60Hz			

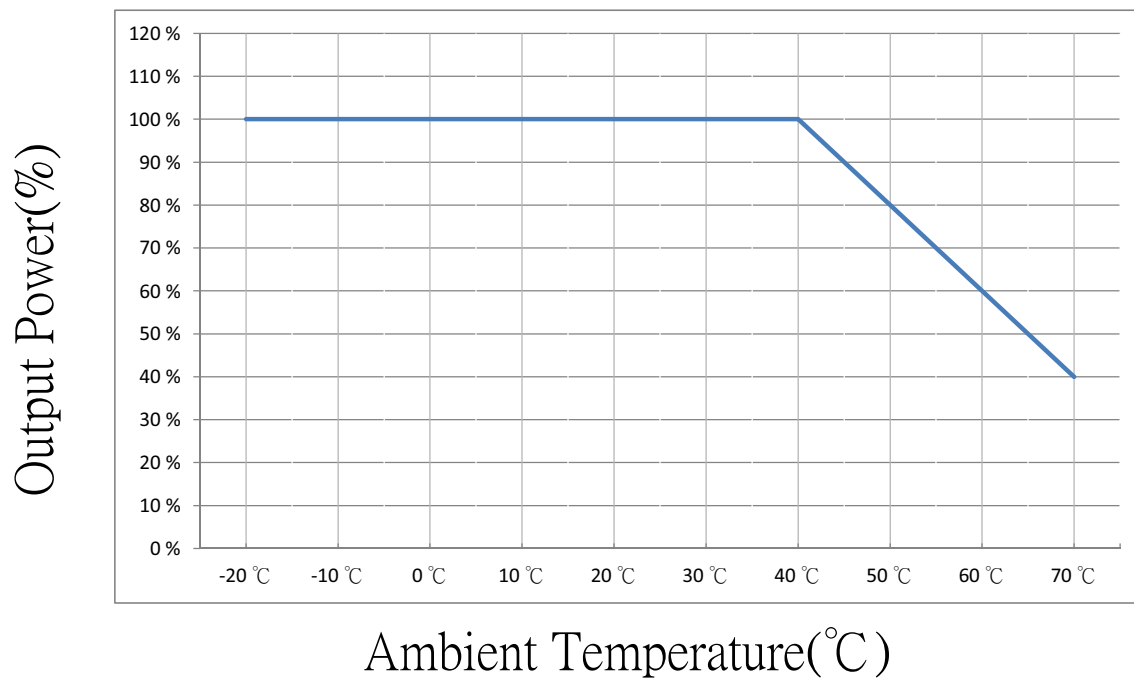
Load Conditions Reported Quantity	100% * I ₀	75% * I ₀	50% * I ₀	25% * I ₀	10% * I ₀	0% * I ₀
Rms Output Current(mA)	2400mA	1800mA	1200mA	600mA	240mA	0mA
Rms Output Voltage(V)	14.925V	14.987V	15.047V	15.109V	15.145V	15.169V
Active Output Power(W)	35.82W	26.98W	18.06W	9.07W	3.63W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	0.664A	0.520A	0.378A	0.222A	0.106A	0.014A
Rms Input Power(W)	40.990W	30.580W	20.370W	10.230W	4.208W	0.040W
True Power Factor (PF)	0.535	0.509	0.466	0.398	0.344	0.024
Total Harmonic Distortion of the input current	143.0A%	156.0A%	179.6A%	220.8A%	247.5A%	19.3A%
Power Consumed by UUT(W)	5.170W	3.603W	2.314W	1.165W	0.573W	0.040W
Active Efficiency	87.387%	88.216%	88.642%	88.616%	86.378%	*
Average Efficiency	88.215%				86.378%	*

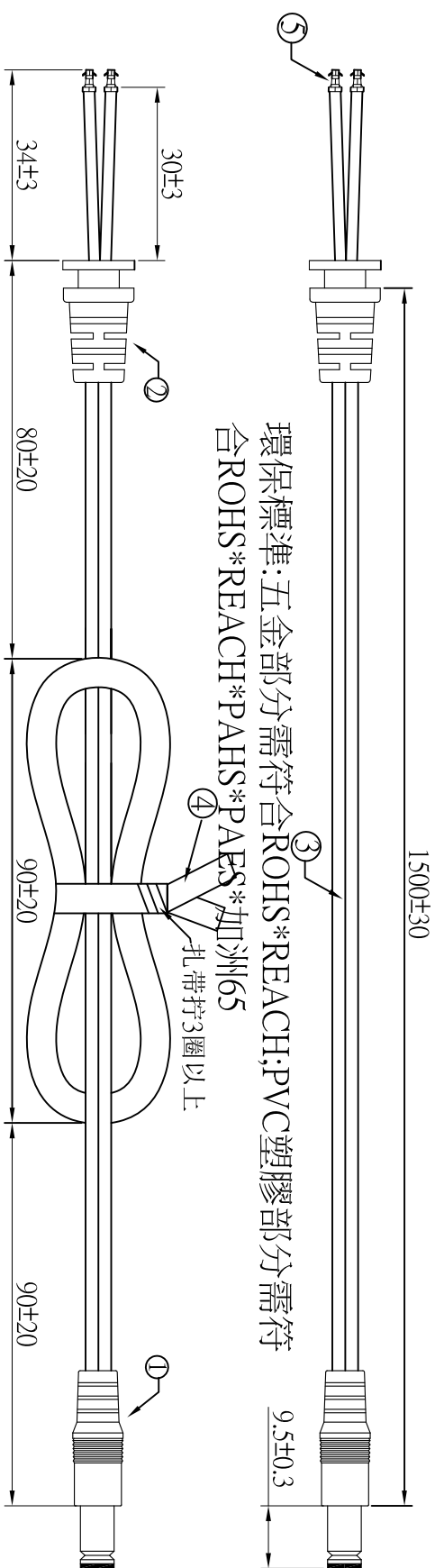
G. AC Input Voltage : 230Vac/50Hz

Load Conditions Reported Quantity	100% * I ₀	75% * I ₀	50% * I ₀	25% * I ₀	10% * I ₀	0% * I ₀
Rms Output Current(mA)	2400mA	1800mA	1200mA	600mA	240mA	0mA
Rms Output Voltage(V)	14.924V	14.985V	15.047V	15.108V	15.145V	15.169V
Active Output Power(W)	35.82W	26.97W	18.06W	9.06W	3.63W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	0.498A	0.388A	0.263A	0.145A	0.066A	0.023A
Rms Input Power(W)	40.580W	30.510W	20.380W	10.284W	4.316W	0.067W
True Power Factor (PF)	0.354	0.341	0.336	0.308	0.285	0.013
Total Harmonic Distortion of the input current	248.3A%	261.7A%	264.7A%	264.9A%	201.2A%	6.0A%
Power Consumed by UUT(W)	4.762W	3.537W	2.324W	1.219W	0.681W	0.067W
Active Efficiency	88.264%	88.407%	88.599%	88.145%	84.217%	*
Average Efficiency	88.354%				84.217%	*

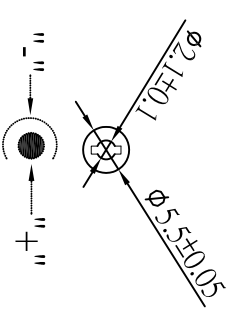
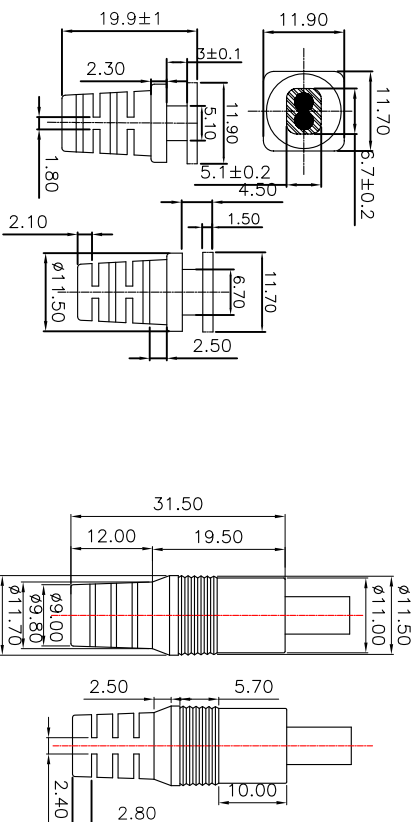
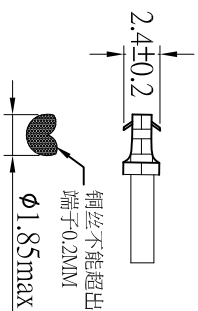
Tester : Jordan

ATS036T-W150U Derating Curve





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*加洲65



" + "	" - "
條紋	印字

- ⑤ 5.5*2.1*21 音叉叉沟黑色带尾,外模P-224(泰岳P-184)号模(两次成型),外模用PVC 60P黑色胶粒成型
- ④ SR-122 (泰岳SR-101) 號模 用PVC 60P黑色膠粒成型 吊重:1米/20磅/60秒
- ③ UL 2468 18AWG(0.16/BC*41)*2C 黑色 OD:2.1*4.2 裁線長度:1560+10-0
- ② PET无鐵芯紮帶10CM黑色
- ① 18双钩基板端子*2PCS

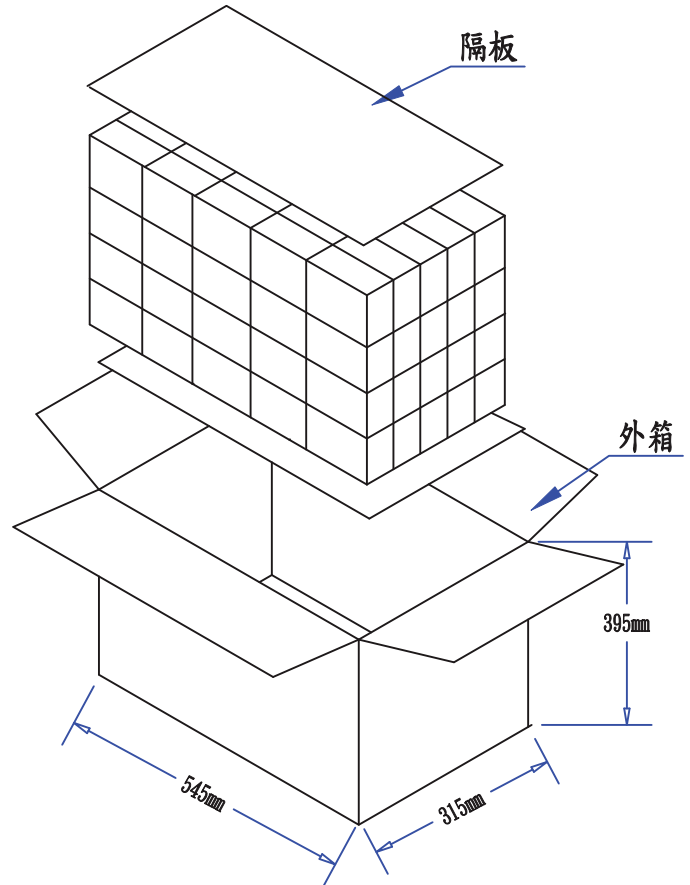
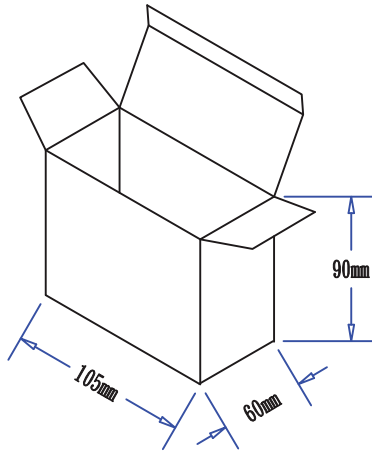
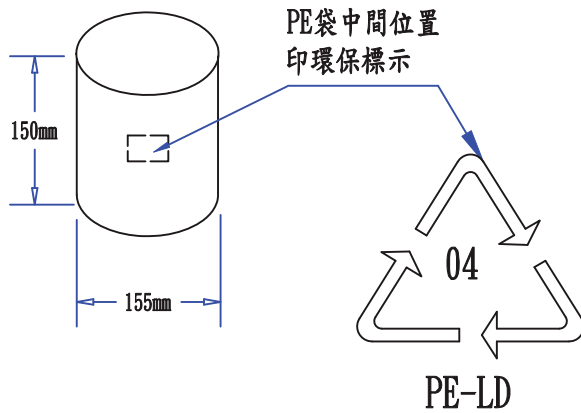
搖擺測試标准:吊重200g,左右60度,40次/分钟,搖擺2000次
絕緣阻抗:20M Ω 導通阻抗:1.5 Ω MAX
單位:mm

一般模具尺寸公差表	
長度(MM)	公差範圍(MM)
5以下(含)	±0.2
10以下(含)	±0.5
30以下(含)	±1
31以上(含)	±1.5

版本	變更內容	變更人	日期
A	初出	吳青喜	2017-09-08

料號		制圖	吳青喜
客戶		頁數	01/01
廣多版本	A	審核	
客戶版本	01	批准	
圖號	ADT-Q0201	日期	2017-09-08

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
	A	初版制作	13/08/12	SUN
	B	更新格式	21/11/17	SUN



PIS18W00048 包裝(FOR 18W, 24W插牆式) 短環保PE泡袋厚0.09-白盒-100

9550006001

1. 隔板:530(L)*300(W)*6mm

K=K

2/100

2. 數量:25*4=100PCS

9520006502

3. 外箱:545(L)*315(W)*395(H)mm

K=K

1/100

9510003502

4. 白盒:105(L)*60(W)*90(H)mm

350P+CE(即C9紙加裱350磅白板紙)

1/1

9540008801

5. 環保PE袋:150(L)*155(W)*0.09mm 無色透明,單端開口,中間位置印環保標示. 1/1

6. 成品裝入環保PE袋后對折袋口,再放入白盒內,方向必須統一.

7. 外箱,白盒標注為外徑尺寸

8. 上述所有材料須符合環保ROHS標準.

DRAWING NO. PIS18W00048			APPROVAL 1 BY		
UNIT mm	MODEL NO 18W, 24W(插牆式)		APPROVAL 2 BY		
	FILE NO. ADT-0211		CHECKED BY(ENGINEER)		Sun
SCALE	REV. B	SHEET 1/1	DRAWN BY		Moon
Apply for sales		Apply for engineer		Use the sales	
				Use the engineer	