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**19.2 W**  
**AC Adapter**  
**SPECIFICATION**

**Model No.** : **ATS018T-W120U (Level VI)**

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**Description** : **12.0 Volts / 1.6 Amps**

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**Part No.** : **ATS018TW120U415215**

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**Version** : **A4**

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**Date** : **06-Feb.-2020**

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## 1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 50 - 60 Hz Input, without any slide switch.
- ◆ **Output** : +12.0 V / 0 ~ 1.6 A
- ◆ **Case Dimension** : 72 (L) \* 34 (W) \* 69 (H) mm (±1mm)
- ◆ **Efficiency** :  $\text{Eff}_{(av)} \geq 85.292 \% \text{ Min.}$   
 $\text{Eff} \geq 75.772 \% @ 10\% \text{ Load}$
- ◆ **Safety** : PSE
- ◆ **EMI** : CE Class B ; Conduction & Radiation Met.
- ◆ **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 DoE Level 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	0.48A Max.
2.4 Inrush Current	50A Max. / 100Vac ; 60A Max. / 230Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	$\text{Eff}_{(av)} \geq 85.292 \% \text{ Min. (At 115 Vac \& 230 Vac)}$ $\text{Eff} \geq 75.772 \% @ 10\% \text{ Load}$
2.6 Power Consumption	$P_i \leq 0.10 \text{ W ( at 230Vac \& No Load)}$

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

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	+12.0 V ± 5 %
	Current	1.6 A Max.
	Regulation	11.4 Vmin. ~ 12.0 V typ. ~ 12.6 V max.
	Ripple & Noise	120 mV <sub>p-p</sub> Max.
	Total Power	19.2 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. (10 μF) at output connector terminals. (At nominal line voltage, Full Load)

#### 4. Protection :

4.1 Over Voltage Protection (OVP)	22V Max
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	5A Max

Remark : When Short Circuit 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 : PSE

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 : CE Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 0.25 mA

#### 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. : 300000Hrs.(Calculated Hours at 25°C , By Telcordia SR-332)

## 8.Mechanical :

8.1 Weight : 170 g Typical

8.2 Cable Type : Black UL2468 22AWG  
( Wire + Plug )

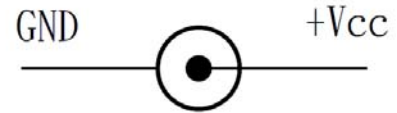
Plug :  $\varnothing 5.5 * \varnothing 2.1 * 9.5 \text{mm}$   
( Tuning Fork & Cannelure )

8.3 Cable Length : 1500mm

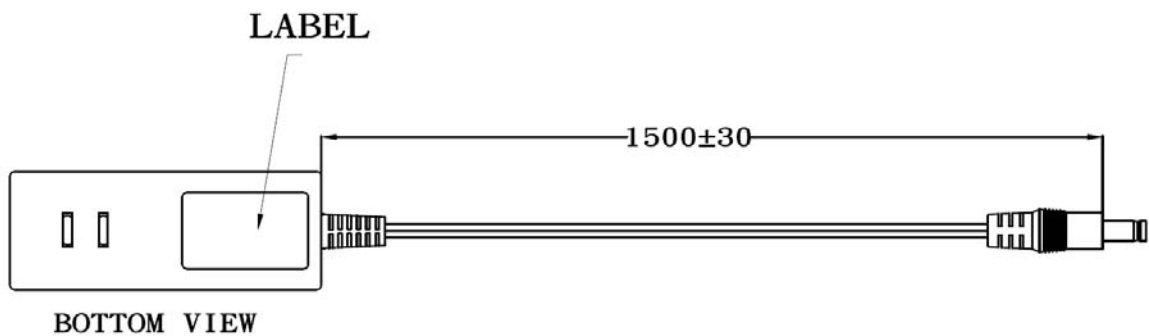
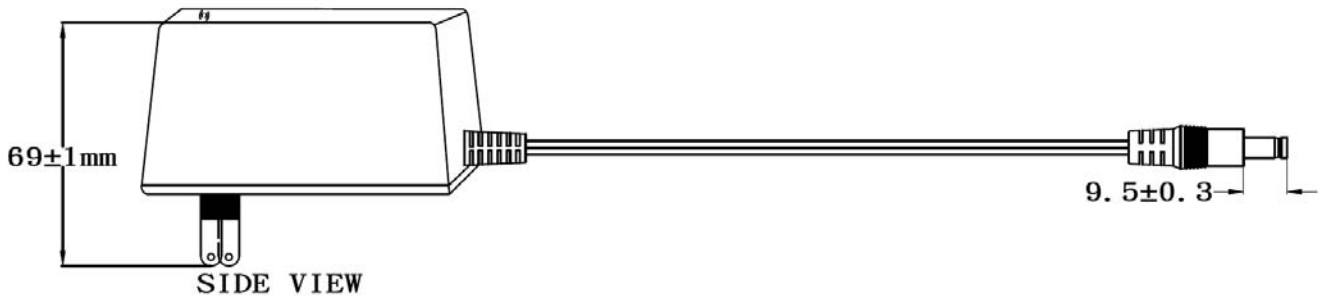
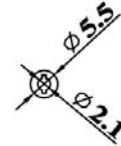
8.4 Case Dimension : 72 (L) \* 34 (W) \* 69 (H) mm (  $\pm 1 \text{mm}$  )

8.5 Material Flammability : UL 94V-0

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

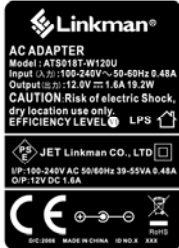


Output Cable Plug Pin Assignment



8.7 Spec. Label Materials : Metalized Polyester Label ( Silver Gloss )  
 Color : Black Background with Silver Printing  
 Label Dimension : 34.5mm(L)\*24.5mm(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. : 9443084383**

## A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
115 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
132 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
180 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
230 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
264 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V

## B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	85.292% min.	86.078 %	85.988 %	86.004 %
230 Vac	85.292 % min.	85.615 %	85.523 %	85.582 %
230Vac @10% load	75.772 % min.	79.672 %	79.332 %	79.592 %

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

$E_1$ =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 ~ 12.6 V	12.123 V	12.114 V	12.141 V
115 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
115 Vac / 100 % Load	11.4 ~ 12.6 V	11.811 V	11.801 V	11.833 V
230 Vac / 0 % Load	11.4 ~ 12.6 V	12.123 V	12.114 V	12.141 V
230 Vac / 50 % Load	11.4 ~ 12.6 V	11.966 V	11.952 V	11.984 V
230 Vac / 100 % Load	11.4 ~ 12.6 V	11.811 V	11.801 V	11.833 V

## D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100 % Load	120 mV <sub>p-p</sub> max.	36.4 mV <sub>p-p</sub>	38.4 mV <sub>p-p</sub>	32.6 mV <sub>p-p</sub>
230 Vac / 100 % Load	120 mV <sub>p-p</sub> max.	43.2 mV <sub>p-p</sub>	46.4 mV <sub>p-p</sub>	40.2 mV <sub>p-p</sub>

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## E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
100 Vac / 100 % Load	50 A max.	34.2 A	35.2 A	33.2 A
230 Vac / 100 % Load	60 A max.	54.3 A	52.4 A	52.4 A

## F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	5 A Max	3.05 A	3.00 A	3.10 A
230 Vac	5 A Max	3.01 A	2.98 A	3.04 A

## G. Short Circuit Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	Auto recovery	Ok	Ok	Ok
230 Vac	Auto recovery	Ok	Ok	Ok

## H. Input Power Consumption(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 0 % Load	$\leq 0.10$ W	0.048 W	0.049 W	0.047 W
230 Vac / 0 % Load	$\leq 0.10$ W	0.064 W	0.068 W	0.066 W

## Efficiency Test Report

- A. Model Number** : ATS018T-A/P/W120Z 12.0V    1.60A    19.20W
- B. DC Power Cord** : UL2468 22AWG , 1.5M
- C. Average Efficiency** :
- Erp ( Lot 7 )                     $0.071*\ln(Pout)-0.0014*Pout+0.67=$     85.292%    Min.
- DoE Level VI                     $0.071*\ln(Pout)-0.0014*Pout+0.67=$     85.292%    Min.
- GEMS Level VI                    $0.071*\ln(Pout)-0.0014*Pout+0.67=$     85.292%    Min.
- CoC Tier 2                         $0.071*\ln(Pno)-0.00115*Pno+0.67=$     85.772%    Min.
- CoC Tier 2 (10% Load)         $0.071*\ln(Pno)-0.00115*Pno+0.57=$     75.772%    Min.
- D. NO Load Power Consumption** :
- Erp ( Lot 7 )                    0.10W Max.
- DoE Level VI                    0.10W Max.
- GEMS Level VI                   0.10W 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

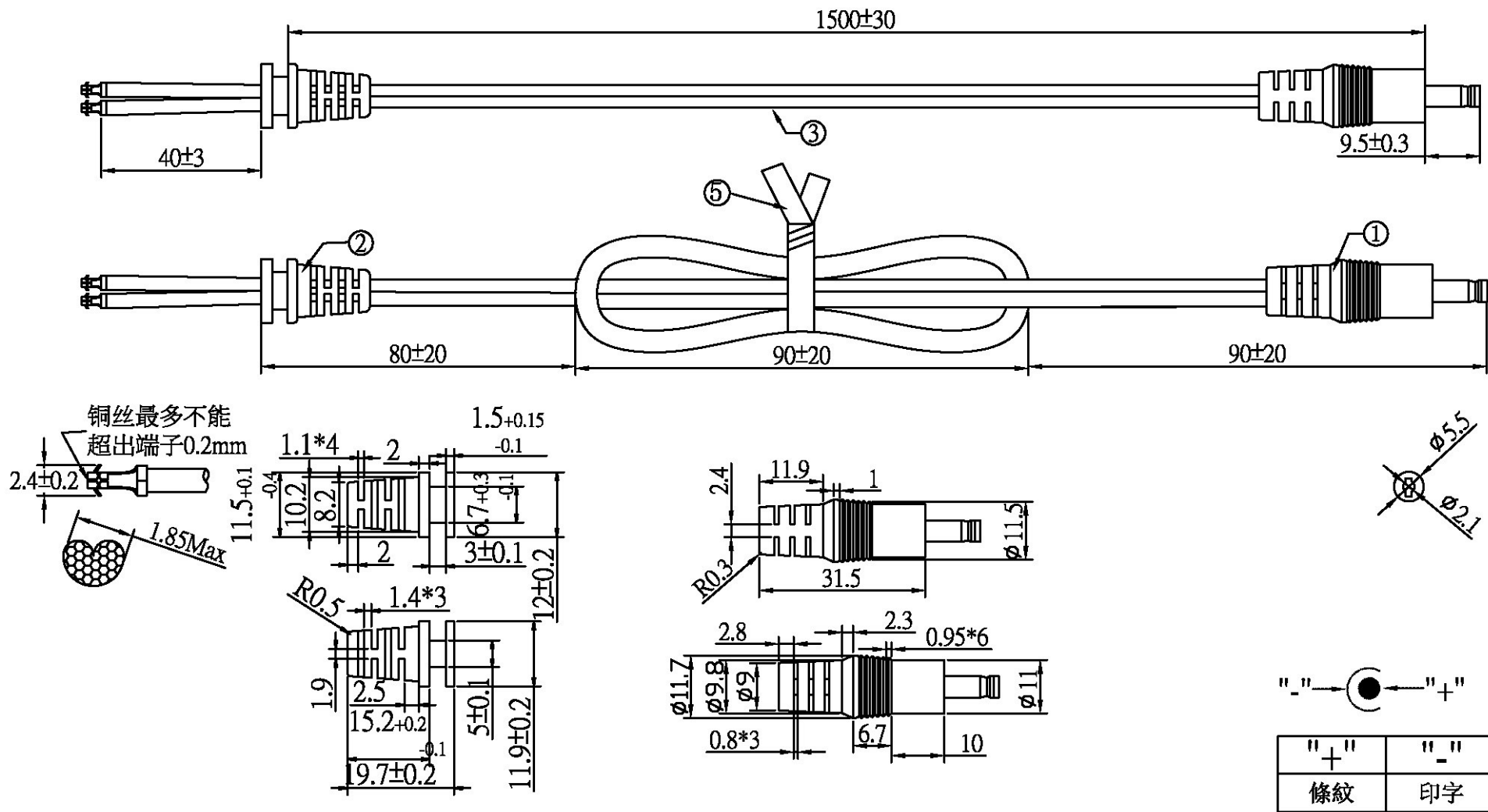
Load Conditions	100%* I <sub>0</sub>	75%* I <sub>0</sub>	50%* I <sub>0</sub>	25%* I <sub>0</sub>	10%* I <sub>0</sub>	0%* I <sub>0</sub>
Reported Quantity						
Rms Output Current(mA)	1600mA	1200mA	800mA	400mA	160mA	0mA
Rms Output Voltage(V)	11.830V	11.912V	11.996V	12.079V	12.128V	12.161V
Active Output Power(W)	18.93W	14.29W	9.60W	4.83W	1.94W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	0.361A	0.283A	0.207A	0.122A	0.058A	0.010A
Rms Input Power(W)	22.243W	16.619W	11.091W	5.586W	2.334W	0.048W
True Power Factor (PF)	0.534	0.510	0.466	0.396	0.349	0.041
Total Harmonic Distortion of the input current	137.4A%	150.4A%	171.6A%	209.8A%	233.4A%	41.6A%
Power Consumed by UUT(W)	3.315W	2.325W	1.494W	0.754W	0.394W	0.048W
Active Efficiency	85.096%	86.012%	86.528%	86.495%	83.140%	*
Average Efficiency	86.033%				83.140%	*

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

Load Conditions	100%* I <sub>0</sub>	75%* I <sub>0</sub>	50%* I <sub>0</sub>	25%* I <sub>0</sub>	10%* I <sub>0</sub>	0%* I <sub>0</sub>
Reported Quantity						
Rms Output Current(mA)	1600mA	1200mA	800mA	400mA	160mA	0mA
Rms Output Voltage(V)	11.833V	11.915V	11.998V	12.080V	12.130V	12.161V
Active Output Power(W)	18.93W	14.30W	9.60W	4.83W	1.94W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	0.253A	0.210A	0.154A	0.084A	0.041A	0.016A
Rms Input Power(W)	22.110W	16.621W	11.132W	5.649W	2.436W	0.068W
True Power Factor (PF)	0.380	0.345	0.315	0.292	0.257	0.018
Total Harmonic Distortion of the input current	220.9A%	246.1A%	268.8A%	257.1A%	189.9A%	11.9A%
Power Consumed by UUT(W)	3.177W	2.323W	1.534W	0.817W	0.495W	0.068W
Active Efficiency	85.630%	86.024%	86.223%	85.537%	79.672%	*
Average Efficiency	85.854%				79.672%	*

**Tester : Wei**





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,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,吊重:1米/20磅/60秒
- ③ UL 2468 22AWG(0.16\*17) BK OD:1.8\*3.6 裁線長度:1560+10/-
- ④ PE无鐵芯紮帶10CM黑色(YY-ES-00001)
- ⑤ 1.8双钩机板端\*2PCS(进文提供:P1815-A)
- ⑥ 單位:MM

一般公差表		
1.0mm以下	±0.1mm	15.0mm以下 ±0.80mm
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

料號	R44M1C150170		
客戶		制圖	
頁數	01	審核	
		批準	

02	SR后留尺寸	2015/08/29
01	新出	2015/04/20
版次	變更內容	日期

圖號	ADT-3433	日期	2015/08/29
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