

150 W Medical Power Supply

12Volts / 12.5Amps

- Input Universal 100 – 240 Vac / 50 – 60 Hz Input, without any slide switch.
- Output +12 V / 0 – 12.5A
- Case Dimension 183.2mm(L) * 81.0 mm(W) * 42.3 mm(H)
- Efficiency Eff (av) ≥ 88%
- Safety UL / CUL / T-mark
- 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)
- Suitable for usage at Medical Equipment.
- Meet DoE Level VI.

Item	Value Unit Remarks
------	------------------------

1. Input

Voltage	Universal 100 – 240 Vac, single phase
Frequency	50 ~ 60 Hz
Current	1.8~0.9 A
Inrush Current	100A Max. / 230Vac (Cold start at 25 °C, full load)
Efficiency	Eff (av) ≥ 88 % (at 115 Vac & 230 Vac)
Power Consumption	Pi ≤ 0.21 W (at 230 Vac & no load)
Power Factor (PF)	Pi ≥ 0.9 (at full load)

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

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load
 E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

2. Output

DC output	
Voltage	+12.00V ±5%
Current	12.5 A Max.
Regulation	11.4 V min. - 12.0 Vtyp. ~ 12.6 Vmax
Ripple & Noise	240 mVpp Max.
Total Power	150W 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)

3. Protection

Over Voltage Protection (OVP)	V out * 150%(Max)
Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
Over Current Protection(OCP)	I out * 150%(Max)
Over Temperature Protection (OTP)	Shut down.

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.

ATM160T-P120

4. Safety EMI and EMC Requirement

Safety Requirement		
a. Safety	UL / CUL / T-mark	
b. Dielectric Strength	Cut off current 10 mA	
1	Primary to Secondary	4000Vac for 1 Minute
2	Primary to Frame Ground	1500Vac for 1 Minute
c. Insulation Resistance		
1	Primary to Secondary	10 M Ohm for 500Vdc
2	Primary to Frame Ground	10 M ohm for 500Vdc
EMI Requirement		CE / FCC Class B, Conduction & Radiation Met.
Leakage Current		Less than 100 uA

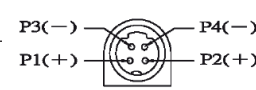
5. Operation and Environment Performance

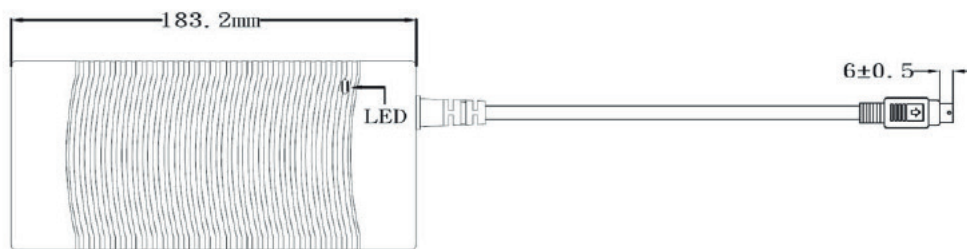
Temperature Range		
	operating	+0°C ~ +50° C
	storage	-20°C ~ +80° C
Humidity Range(Non-condensing)		
	operating	20% ~ 80% RH
	storage	10% ~ 90% RH
Cooling		By natural air

6. M.T.B.F.

300,000Hrs.(Calculated Hours at 25 , By Telcordia SR-332)

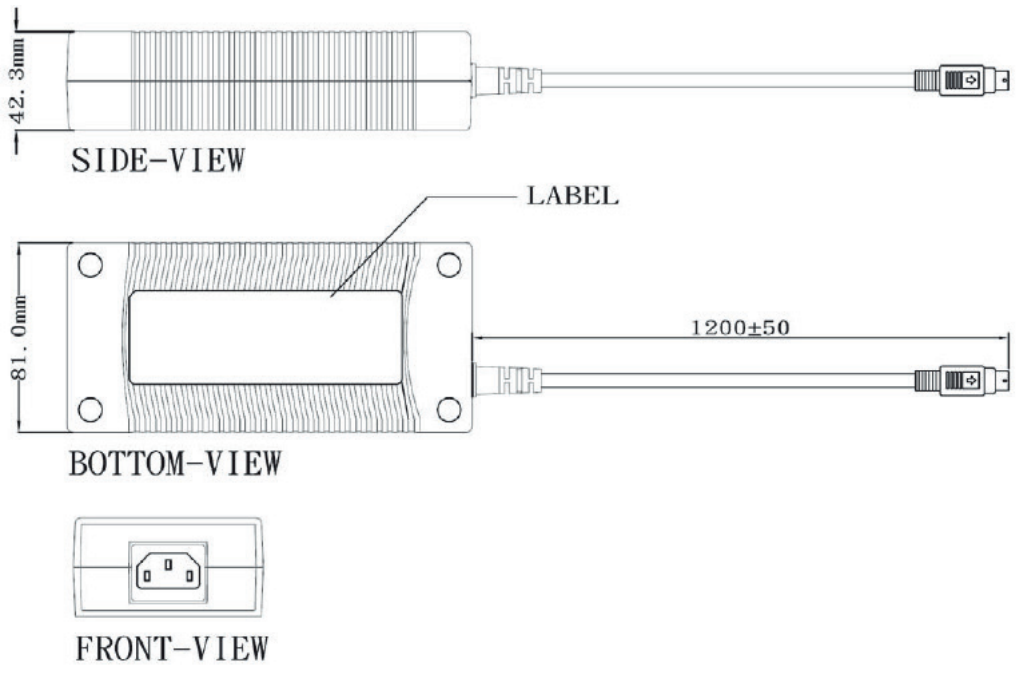
7. Mechanical

Weight	720 g Ref.	
Cable Type	Black UL2464 AWG16 (Wire + Plug) Plug : 4 PIN DIN	
Cable Length	1200mm	
Case Dimension	183.2mm(L) * 81.0 mm(W) * 42.3 mm(H)	
Material Flammability	UL 94V-0	
External Apperance	As drawing below (Scale - mm)	



TOP-VIEW

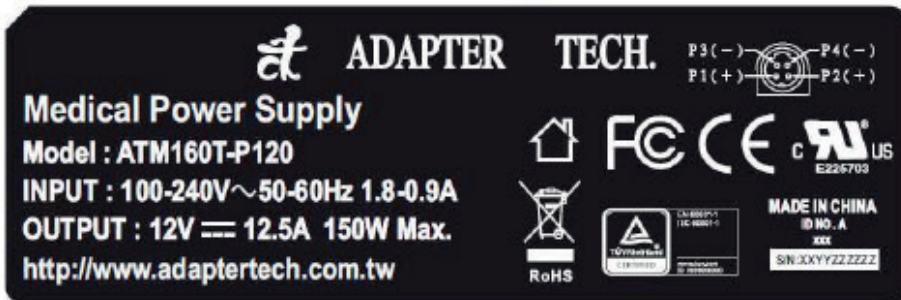
ATM160T-P120



8. Label

Label materials	Metalized polyester label (silver gloss)
Color	Black background with silver printing
Label dimension	39 (L)*119 (W)
Label thickness	75#

100%



"XXX"

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

S/N:XXYYZZZZZZ
XX=Year=2017=17
YY=Week=01
ZZZZZZ=Serial number
=000001~999999

ATM160T-P120

Line Regulation Test

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
115Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
132Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
180Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
230Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
264Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	

Efficiency Test

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	88% Min.	89.25%	89.11%	
230Vac	88% Min.	89.80%	89.96%	

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

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

Load Regulation Test

Test Result:

9.07 V	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	11.4 V ~ 12.6 V	12.12 V	12.24V	
115Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
115Vac / 100 % Load	11.4 V ~ 12.6 V	11.88 V	11.90 V	
230Vac / 0 % Load	11.4 V ~ 12.6 V	12.12 V	12.24V	
230Vac / 50 % Load	11.4 V ~ 12.6 V	12.02 V	12.05 V	
230Vac / 100 % Load	11.4 V ~ 12.6 V	11.88 V	11.90 V	

Ripple & Noise Test

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	240mV Max	110 mV	112mV	
230Vac / 100 % Load	240mV Max	113 mV	112mV	

Inrush Current

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	100A Max.	80A	79A	

ATM160T-P120

Over Voltage Protection

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	Vout* 150 %(Max)	124%	124%	
230Vac	Vout* 150 %(Max)	124%	124%	

Over Current Protection

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Iout* 150% max.	115%	113%	
230Vac / 100 % Load	Iout* 150% max.	115%	113%	

Short Circuit Protection

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Auto recovery	OK	OK	
230Vac / 100 % Load	Auto recovery	OK	OK	

Input power consumption (no load)

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
250Vac / 0 % Load	≤0.21 W	0.10W	0.10W	

Power Factor

Test Result:

Test Condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	≥0.9	0.99	0.99	
230Vac / 100 % Load	≥0.9	0.95	0.95	

Technical drawing of the ATM160T-P120 cable assembly. The drawing includes a main view of the cable with dimensions: total length 1200±50, connector length 90±20, and a loop length of 150±20. It shows a 4-pin connector with pins labeled P1 (yellow), P2 (red), P3 (white), and P4 (black). Detailed views show the connector housing with dimensions like 11, 10.3, 8.3, 4.7, 2.5, 1.8, and 10.4. A note indicates that the copper wire should not exceed the terminal by 0.2mm. A table on the right provides a pinout: P1 (yellow), P2 (red), P3 (white), P4 (black).

芯線	黃色	紅色	白色	黑色
PIN	P1	P2	P3	P4

一般公差表	
1.0mm以下	±0.1mm
2.0mm以下	±0.15mm
3.0mm以下	±0.20mm
10.0mm以下	±0.50mm
15.0mm以下	±0.60mm
20.0mm以下	±0.80mm
30.0mm以下	±1.0mm
30.0mm以上	±1.2mm

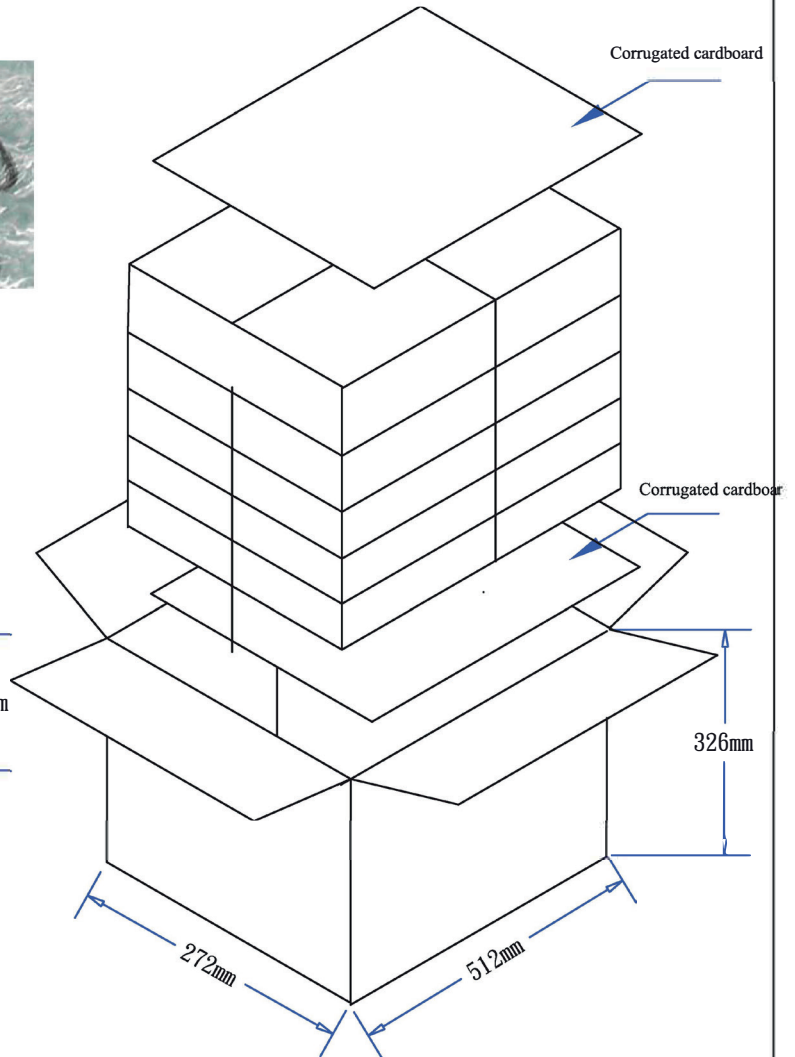
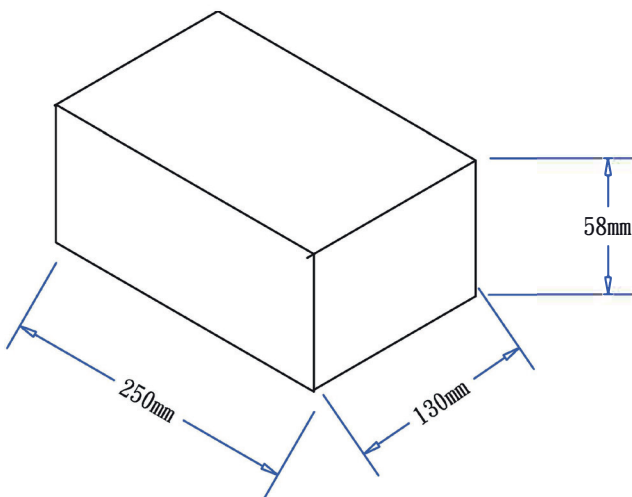
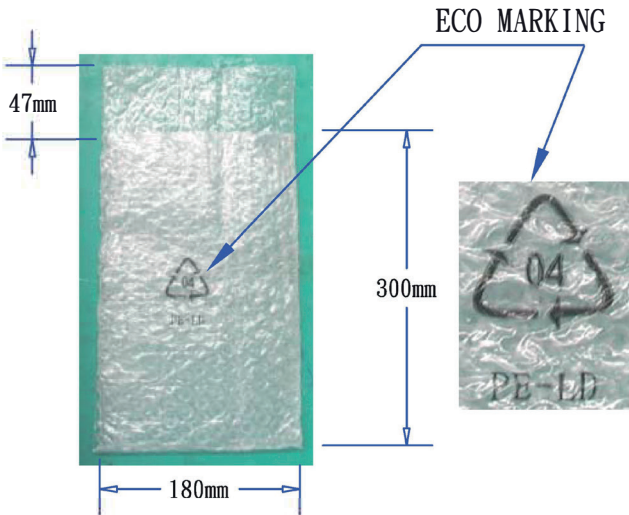
料號	R44R15120149	
客戶	阿達特	制圖 潘勝
頁數	01	審核 批准
泰岳電子有限公司		
圖號	ADT-4432	日期 2016/10/15

注意:此圖面所需材料符合"ROHS"標準

- ① 4PIN 粗針成型式, 外模P-180号, 单箭头, 大网尾, 用料PVC 60P 黑色
- ② UL 2464 16AWG(0.16*65)*4C(紅,黑,白,黃)过粉线 BK亮 OD:6.5 裁線長度:1260+10/-0
- ③ SR-511号模,用料PVC60P黑色(YYPVC-00009):吊重:1米/20磅/60秒
- ④ PE无鐵芯紮帶14CM(YE-ES-00001)
- ⑤ 2.9双钩机板端*2PCS(进文提供:P1811-U)
- ⑥ 热缩套管(黑色):φ4*10*2Pcs
- ⑦ 單位:MM

PIS200W0006

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
⚠	A	按客户要求, 初版制作	10/07/22	
	B			
	C			



- | | | | |
|---|---------|------------|-------|
| 1. Corrugated cardboard: .500*260*6mm | B=B | 9550013001 | 2/20 |
| 2. Q'ty: 4*5=20PCS | | | |
| 3. Master carton: L*W*H=512*272*326mm | K=K | 9520023601 | 1/20 |
| 4. White box: L*W*H=250*130*58mm | 350P+CE | 9510011701 | 20/20 |
| 5. PE bubble bag: 300*180*47mm, no color and clear. | | 9540005101 | |
| 5. Carton, box marks with dimension | | | |
| 6. Above materials should be compliance with RoHS | | | |

DRAWING NO. 10-07-22-1		APPROVAL2	
UNIT	200W 白盒装	APPROVAL1	
mm	ADT-0045	ENGINEER	
SCALE	REV. A	SHEET 1/1	DRAWN BY