



60 W Medical Power Supply SPECIFICATION

Model No. : **ATM065T-A120 (Level VI)**

Description : **12Volts / 5Amps**

Part No. : **ATM065TA120415201**

Version : **A1**

Date : **06-Apr.-2017**

Approved	Reviewed	Checked	Prepared	Sales
				



1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ◆ **Output** : +12V / 0~5A
- ◆ **Case Dimension** : 119 (L) * 60 (W) * 36 (H) mm
- ◆ **Efficiency** : Eff (av) \geq 88%
- ◆ **Safety** : I.T.E:PSE/ CB
Medical: 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)
- ◆ High frequency design, less power consumption.
- ◆ Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.
- ◆ Meet DoE VI / ErP (Stage 2) / GEMS / NRCAN / CEC / EPA

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	50 ~ 60 Hz
2.3 Current	1.6A Max.
2.4 Inrush Current	80A Max. / 240Vac (Cold start at 25 °C, full load)
2.5 Efficiency	Eff (av) \geq 88% (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi \leq 0.21 W (At 230Vac & No 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

3. Output :

3.1 DC Output	Voltage	+12V \pm 5%
	Current	5A Max.
	Regulation	11.40Vmin. ~ 12.00Vtyp. ~ 12.60Vmax.
	Ripple & Noise	150mV Max.
	Total Power	60 W 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. (10 μ F) at output connector terminals. (At nominal line voltage, full load)



4. Protection :

4.1 Over Voltage Protection (OVP)	(V out *150%) Max.
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	(I out *170%) 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 latch .

5. Safety、EMI and EMC Requirement :

5.1 Safety Requirement

a. Safety : I.T.E:PSE/ CB
Medical: UL / cUL/ T-mark

b. Dielectric Strength : Cut off current 10mA

(1)	Primary to Secondary	4000Vac 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 / FCC Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 0.1mA

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. : 300,000 Hrs.(Calculated Hours At 25°C, By Telcordia SR-332)

8. Mechanical :

8.1 Weight : 310 g Typical

8.2 Cable Type : Black UL1185 16AWG

(Wire + Plug)

Plug : $\phi 5.5 \times \phi 2.1 \times 9.5 \text{mm}$ L Type

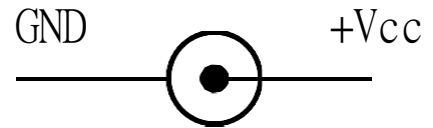
(Tuning Fork & Cannelure)

8.3 Cable Length : 1500mm

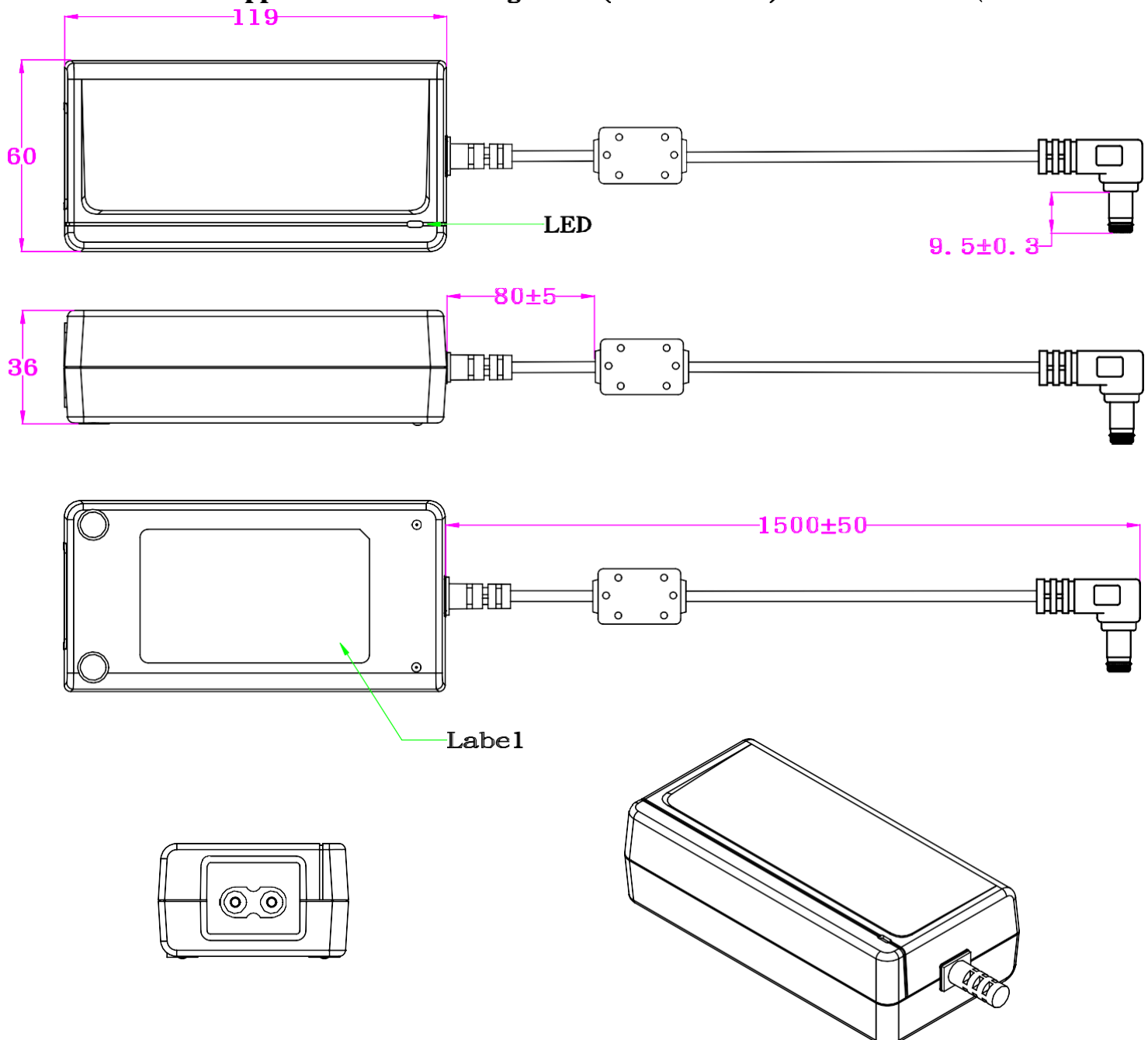
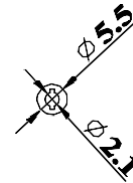
8.4 Case Dimension : 119mm(L)*60mm(W)*36mm(H)

8.5 Material Flammability : UL 94V-0

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



Output Cable Plug Pin Assignment



A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
115Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
132Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
180Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
230Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
264Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	88 % Min.	89.10 %	89.07%	89.10 %
230Vac	88 % Min.	89.38 %	89.15%	89.47 %

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

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	11.40 V ~ 12.60V	12.33 V	12.33 V	12.31 V
115Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
115Vac / 100 % Load	11.40 V ~ 12.60V	12.03 V	12.00 V	11.98V
230Vac / 0 % Load	11.40 V ~ 12.60V	12.25 V	12.33 V	12.31 V
230Vac / 50 % Load	11.40 V ~ 12.60V	12.18 V	12.16 V	12.15 V
230Vac / 100 % Load	11.40 V ~ 12.60V	12.03 V	12.00 V	11.98V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	150mV Max.	63.4 mV	60.8 mV	65.4 mV
230Vac / 100 % Load	150mV Max.	61.2 mV	62.1 mV	63.3 mV

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	80A Max	63 A	65 A	64 A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	(Iout *170%) Max.	122 %	120 %	121 %
230Vac / 100 % Load	(Iout *170%) Max.	121 %	122 %	123 %

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(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	\leq 0.21 W	0.05 W	0.05 W	0.05 W



INSTALLATION INSTRUCTION

Manufacturer: ADAPTER TECHNOLOGY CO LTD

Models: ATM065T-Ax (where x = 120, 150, 180, 190, 240 or 480)

1. The switching power supply is intended used for medical electrical equipment.
The equipment has not been evaluated applied parts that suitable for direct patient contact! It shall be evaluated for the end system configuration.

2. Circuit diagrams, descriptions and component parts list will be made available only upon request when servicing is required. Please, contact the address below for related information.

ADAPTER TECHNOLOGY CO LTD

6F-9, No.258, Liancheng Rd., Zhonghe District, New Taipei City 235, Taiwan

3. Environmental conditions:

Transportation temperature, humidity, pressure	-20 to +80°C / 10% ~ 90 %, 540 ~ 1060 hPa
Storage temperature, humidity, pressure	-20 to +80°C / 10% ~ 90 %, 540 ~ 1060 hPa
Operation temperature, humidity, pressure	0°C ~ 40°C / 20% ~ 80 %, 540 ~ 1060 hPa

4. The equipment has not been evaluated according to IEC60601-1-2. The EMC assessment shall be conducted for the end system configuration.

5. Input Rating: 100-240Vac, 50-60Hz, 1.6A-0.7A

6. The output load shall not exceed the rating:

Output:

Model	O/P Voltage	O/P Current
ATM065T-A120	12V	5A
ATM065T-A150	15V	4.34A
ATM065T-A180	18V	3.62A
ATM065T-A190	19V	3.43A
ATM065T-A240	24V	2.71A
ATM065T-A480	48V	1.36A

7. Any inspection and maintenance tasks must be carried out only by authorized by the manufacturer service personnel.

8. "WARNING" Do not modify this equipment without authorization of the manufacturer.



9. "Do not dispose this product in the household waste, please, follow the respective national law for proper disposal."



10. INDOOR USE ONLY "The equipment intend indoor use only"

11. The classification of the equipment is:

- Class II
- The equipment has not been evaluated applied parts
- Not AP or APG type
- Protection class IPX0
- Not intended for use in the presence of flammability an aesthetic mixture with air or with oxygen or nitrous oxide
- Intended for continuous operation

12. The equipment provided with one fuse (F1) on line conductor, fuse rated T3.15AL, 250Vac, size approximately 8.5 x 8.5 x 4.0 mm.

13. "WARNING" Long cord for Strangulation hazard.

14. Expected service life of the power supply: 100,000 hours.



15. Upper limit of temperature. Indicates the upper limit of temperature to which the medical device can be safety exposed. The upper limit of temperature shall be indicated adjacent to the upper horizontal line.

[illegible]

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|----------|---------|----------|--------|
| 1.0mm以下 | ±0.1mm | 15.0mm以下 | ±0.6mm |
| 2.0mm以下 | ±0.15mm | 20.0mm以下 | ±0.8mm |
| 3.0mm以下 | ±0.20mm | 30.0mm以下 | ±1.0mm |
| 10.0mm以下 | ±0.50mm | 30.0mm以上 | ±1.2mm |

01	新出	2017/03/3
版次	变更内容	日期

料號	R44M11150146		
客戶	阿達特	制圖	陶勝英
頁數	01	審核	
		批准	

泰岳電子有限公司

圖號	ADT-4719	日期	2017/03/31
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