AC – DC

Features

- Universal 80~264V AC input voltage
- Operating ambient temperature range: -20°C ~ +40°C
- Approved to UKCA, CE, TUV-GS, cURus, RCM (C-Tick), FCC, RoHS
- EN/IEC/ES60601-1 Safety Approved
- Output SCP, OCP, OVP
- Efficiency up to 89%
- Output Voltage 24V DC

Image for Illustration Purpose
Models may vary

Ideal Power's 44ATM250T-P240-RS 250W AC/DC External Desktop Medical Power Supply (PSU) Series are certified to UKCA, CE, TUV, cURus, FCC, RoHS & EN 60601-1/IEC 60601-1/ES 60601-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in Medical, ITE, Audio & Video Industries and customised solutions are available upon request.

Models

Model Number	Output Voltage (V DC)	Output Current (A)	Output Power (W)	Efficiency (%)
44ATM250T-P240-RS	24	10.4	250	89

Input Data

	Min	Typical	Max	Units	Notes
Input Voltage	90	--	264	V AC	100-240VAC +/- 10%
Input Frequency	47	--	63	Hz	50-60Hz +/- 5%
Inrush Current	0	--	120	A	At cold start, 115 / 230V AC
Power Consumption	--	--	--	--	Pi≤ 0.15W (At 230Vac & No Load)
Power Factor (PF)	--	--	--	--	Pi≥ 0.9W (At Full Load)

Output Data

	Min	Typical	Max	Units	Notes
Output Voltage	--	--	24	V	
Current	--	--	10.4	A	
Regulation	22.8	24	25.2	V	Typ
Ripple & Noise		--	240	mVp-p	

Protection Requirements

Over Current Protection	V out *150%MAX, latch off.
Short Circuit Protection	Auto recovery.
Over Voltage Protection	Iout *150%MAX, auto recovery.
Over Temperature Protection	Latch protection

Environmental Data

	Min	Typical	Max	Units	Notes
Operating Temperature	-20	--	+40	ºC	
Storage Temperature	-20	--	+80	ºC	
Operating Humidity	20	--	80	ºC	
Storage Humidity	10	--	90	ºC	

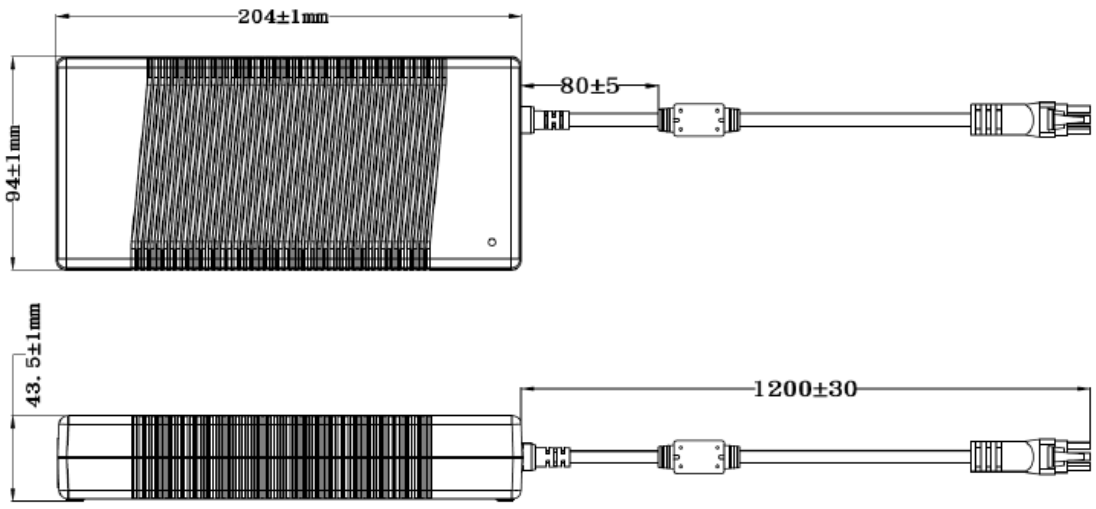
Other Information

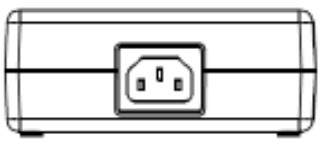
	Min	Typical	Max	Units	Notes
Dielectric Strength	--	--	10	mA	Max. Cut off current. Primary to Secondary 4000V ac Primary to Ground 150V ac for 1 min
Insulation	--	10	--	MΩ	For 500V dc test voltage
MTBF	--	300,000	--	hrs	At 25℃
Leakage Current					Less than 0.1 mA
Dimensions	204x94x43.5mm				
Approvals	UKCA, CE, TUV, cURus, FCC, RoHS				

EMI Emissions

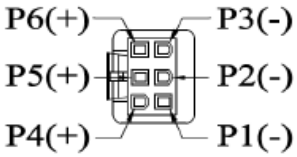
Conducted & radiated	CE / FCC (Class B)

Mechanical Drawing





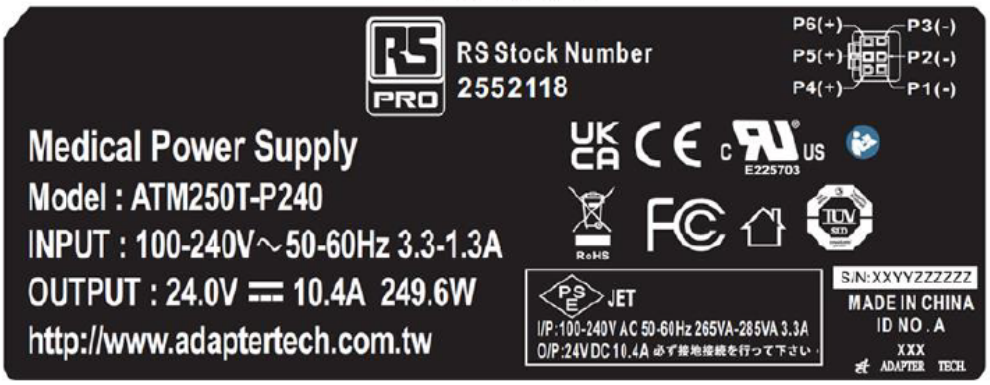
FRONT-VIEW



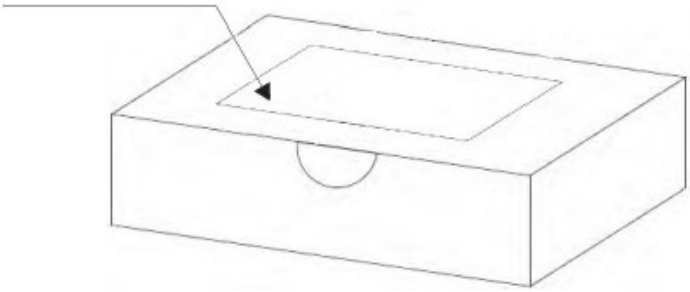
Output cable plug pin assignment

Label Drawing

Typical product label



Packaging Label



Test Results

A. Line regulation test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90 Vac / 50 % Load	22.8 V ~ 25.2V	24.10V	24.00V	23.99V
115 Vac / 50 % Load	22.8 V ~ 25.2V	24.10V	24.00V	23.99V
132 Vac / 50 % Load	22.8 V ~ 25.2V	24.10V	24.00V	23.99V
180 Vac / 50 % Load	22.8 V ~ 25.2V	24.10V	24.00V	23.99V
230 Vac / 50 % Load	22.8 V ~ 25.2V	24.10V	24.00V	23.99V
264 Vac / 50 % Load	22.8 V ~ 25.2V	24.10V	24.00V	23.99V

B. Efficiency test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	89 % Min.	92.47%	92.24%	91.91%
230 Vac	89 % Min.	93.35%	93.28%	92.97%
230Vac@10% load	79 % Min.	87.55%	87.32%	87.40%

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

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 V ~ 12.6V	24.26V	24.15V	24.15V
115 Vac / 50% Load	11.4 V ~ 12.6V	24.10V	24.00V	23.99V
115 Vac / 100% Load	11.4 V ~ 12.6V	23.96V	23.85V	23.85V
230 Vac / 0% Load	11.4 V ~ 12.6V	24.26V	24.15V	24.15V
230 Vac / 50% Load	11.4 V ~ 12.6V	24.11V	24.00V	23.99V
230 Vac / 100% Load	11.4 V ~ 12.6V	23.96V	23.85V	23.85V

Test Results

D. Ripple & Noise test

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100% Load	240 mV_{p-p} max.	74.8 mV_{p-p}	59.8 mV_{p-p}	62.6 mV_{p-p}
230 Vac / 100% Load	240 mV_{p-p} max.	72.8 mV_{p-p}	61.2 mV_{p-p}	62.8 mV_{p-p}

E. Inrush current

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230 Vac / 100% Load	120 A max.	96.0A	98.1A	97.8A

F. Over voltage protection

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	Vout*150% max.	120%	120%	119%
230 Vac	Vout*150% max.	120%	120%	118%

G. Over current protection

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100% Load	Iout*170% max.	130%	131%	129%
230 Vac / 100% Load	Iout*170% max.	130%	129%	129%

H. Short circuit protection

Test result :

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

I. Input power consumption (no load)

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230 Vac / 0% Load	≦ 0.15 W	0.11W	0.10W	0.11W

J. Power factor

Test result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100% Load	≧ 0.9	0.991	0.991	0.991
230 Vac / 100% Load	≧ 0.9	0.959	0.957	0.956

Test Results

Efficiency Test Report

A.	Model Number	: ATM250T-P240		24.0V	10.40A	249.60W
B.	DC Power Cord	: UL2464 16AWG * 4C, 1.2M				
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 "	61604			
	b. Electronic Load	: " PRODIGIT "	3311F			
	c. Power Meter	: " YOKOGAWA "	WT-310A			
	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)	10400mA	7800mA	5200mA	2600mA	1040mA	0mA
Rms Output Voltage(V)	23.808V	23.885V	23.962V	23.990V	24.280V	24.260V
Active Output Power(W)	247.60W	186.30W	124.60W	62.37W	25.25W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	2.363A	1.768A	1.185A	0.622A	0.277A	0.015A
Rms Input Power(W)	268.17W	200.43W	133.38W	68.42W	28.771W	0.08W
True Power Factor (PF)	0.993	0.990	0.978	0.960	0.895	0.001
Total Harmonic Distortion of the input current	10.6A%	12.1A%	19.2A%	22.8A%	28.0A%	2.7A%
Power Consumed by UUT(W)	20.567W	14.127W	8.778W	6.046W	3.520W	0.080W
Active Efficiency	92.331%	92.952%	93.419%	91.163%	87.766%	*
Average Efficiency	92.466%				87.766%	*

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)	10400mA	7800mA	5200mA	2600mA	1040mA	0mA
Rms Output Voltage(V)	23.808V	23.820V	23.910V	23.990V	24.270V	24.260V
Active Output Power(W)	247.60W	185.80W	124.33W	62.37W	25.24W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	1.194A	0.914A	0.633A	0.354A	0.200A	0.096A
Rms Input Power(W)	263.47W	197.71W	132.27W	68.20W	28.830W	0.094W
True Power Factor (PF)	0.959	0.940	0.907	0.830	0.622	0.001
Total Harmonic Distortion of the input current	23.8A%	28.5A%	33.7A%	33.7A%	31.7A%	2.3A%
Power Consumed by UUT(W)	15.867W	11.914W	7.938W	5.826W	3.589W	0.094W
Active Efficiency	93.978%	93.974%	93.999%	91.457%	87.550%	*
Average Efficiency	93.352%				87.550%	*

Tester : Ray