

## 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 87%
- Output Voltage 12V DC



Image for Illustration Purpose  
Models may vary



Ideal Power's 44ATM036T-A120-RS-2.5 36W AC/DC External Desktop Medical Power Supply (PSU) Series are certified to UKCA, CE, TUV, cURus, RCM (C-Tick), 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<br>(V DC) | Output Current<br>(A) | Output Power<br>(W) | Efficiency<br>(%) |
|-----------------------|--------------------------|-----------------------|---------------------|-------------------|
| 44ATM036T-A120-RS-2.5 | 12                       | 3                     | 36                  | 87.403            |

### Input Data

|                   | Min | Typical | Max | Units | Notes                         |
|-------------------|-----|---------|-----|-------|-------------------------------|
| Input Voltage     | 90  | --      | 264 | V AC  | 100-240VAC +/- 10%            |
| Input Frequency   | 47  | --      | 63  | Hz    | 50-60Hz +/- 5%                |
| Input Current     | --  | 0.35    | --  | A     |                               |
| Inrush Current    | 0   | --      | 70  | A     | At cold start, 100 / 240V AC  |
| Power Consumption | --  | --      | --  | --    | Pi≤0.1W (At 230Vac & No Load) |

### Output Data

|                    | Min | Typical | Max | Units | Notes                                   |
|--------------------|-----|---------|-----|-------|-----------------------------------------|
| Output Voltage     | --  | --      | 12  | V     |                                         |
| Ripple & Noise     | --  | --      | 120 | mVp-p |                                         |
| Turn on Delay Time | --  | --      | 3   | s     | At 100 Vac to 240 Vac input & Full load |
| Hold up Time       | 5   | --      | --  | s     | At Full load & 100Vac/60Hz              |

### Protection Requirements

|                          |                               |
|--------------------------|-------------------------------|
| Over Current Protection  | V out *200%MAX, latch off.    |
| Short Circuit Protection | Auto recovery.                |
| Over Voltage Protection  | Iout *200%MAX, auto recovery. |

## Environmental Data

|                       | Min | Typical | Max | Units | Notes |
|-----------------------|-----|---------|-----|-------|-------|
| Operating Temperature | -20 | --      | +40 | °C    |       |
| Storage Temperature   | -20 | --      | +80 | °C    |       |
| Operating Humidity    | 20  | --      | 80  | %     |       |
| Storage Humidity      | 10  | --      | 90  | %     |       |

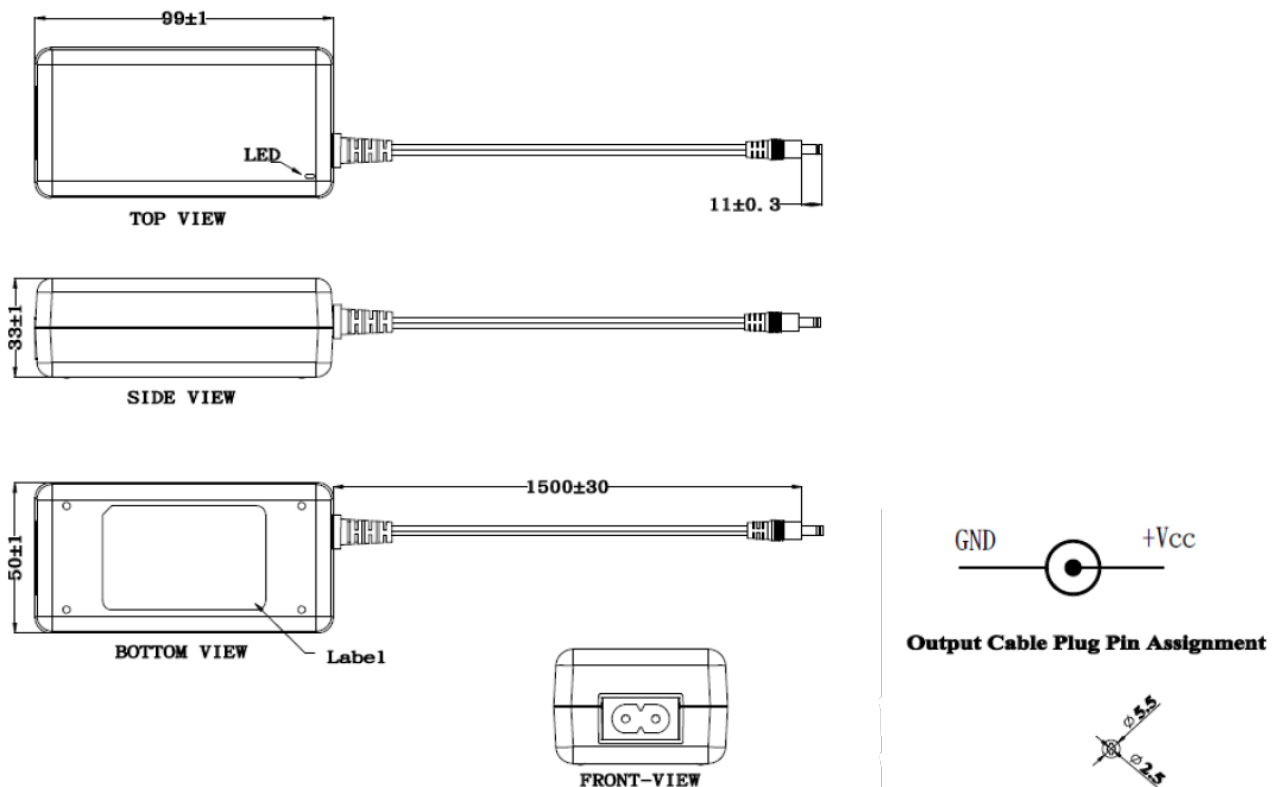
## Other Information

|                     | Min                                           | Typical | Max | Units | Notes                    |
|---------------------|-----------------------------------------------|---------|-----|-------|--------------------------|
| Dielectric Strength | --                                            | --      | 10  | kV    | Max. Cut off current     |
| Insulation          | --                                            | 10      | --  | MΩ    | For 500V dc test voltage |
| MTBF                | --                                            | 300,000 | --  | hrs   | At 25°C                  |
| Leakage Current     | Less than 100uA                               |         |     |       |                          |
| Dimensions          | 99x50x33mm                                    |         |     |       |                          |
| Approvals           | UKCA, CE, TUV, cURus, RCM (C-Tick), FCC, RoHS |         |     |       |                          |

## EMI Emissions

|                      |                    |  |  |  |  |
|----------------------|--------------------|--|--|--|--|
| Conducted & radiated | CE / FCC (Class B) |  |  |  |  |
|----------------------|--------------------|--|--|--|--|

## Mechanical Drawing



## Label Drawing

Typical product label



## Packaging Label



## Test Results

### A. Line Regulation Test

Test Result :

| Test condition     | Spec.           | Reading 1 | Reading 2 | Reading 3 |
|--------------------|-----------------|-----------|-----------|-----------|
| 90Vac / 50 % Load  | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 115Vac / 50 % Load | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 132Vac / 50 % Load | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 180Vac / 50 % Load | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 230Vac / 50 % Load | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 264Vac / 50 % Load | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |

### B. Efficiency Test

Test Result :

| Test condition  | Spec.        | Reading 1 | Reading 2 | Reading 3 |
|-----------------|--------------|-----------|-----------|-----------|
| 115Vac          | 87.403% Min. | 88.13 %   | 88.26 %   | 88.14 %   |
| 230Vac          | 87.403% Min. | 88.15 %   | 88.02 %   | 88.24 %   |
| 230Vac@10% load | 78.303% Min  | 85.07 %   | 84.89 %   | 85.23 %   |

### C. Load Regulation Test

Test Result :

| Test condition      | Spec.           | Reading 1 | Reading 2 | Reading 3 |
|---------------------|-----------------|-----------|-----------|-----------|
| 115Vac / 0 % Load   | 11.40V ~ 12.60V | 12.24 V   | 12.19 V   | 11.21 V   |
| 115Vac / 50 % Load  | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 115Vac / 100 % Load | 11.40V ~ 12.60V | 11.90 V   | 11.84 V   | 11.87 V   |
| 230Vac / 0 % Load   | 11.40V ~ 12.60V | 12.24 V   | 12.19 V   | 11.21 V   |
| 230Vac / 50 % Load  | 11.40V ~ 12.60V | 12.07 V   | 12.02 V   | 12.04 V   |
| 230Vac / 100 % Load | 11.40V ~ 12.60V | 11.89 V   | 11.84 V   | 11.87 V   |

## Test Results

### D. Ripple & Noise Test

Test Result :

| Test condition      | Spec.        | Reading 1 | Reading 2 | Reading 3 |
|---------------------|--------------|-----------|-----------|-----------|
| 115Vac / 100 % Load | 120mVpp Max. | 57.8 mV   | 61.2 mV   | 44.3 mV   |
| 230Vac / 100 % Load | 120mVpp Max. | 49.2 mV   | 51.2 mV   | 32.2 mV   |

### E. Inrush Current

Test Result :

| Test condition      | Spec.   | Reading 1 | Reading 2 | Reading 3 |
|---------------------|---------|-----------|-----------|-----------|
| 230Vac / 100 % Load | 70A Max | 62.9 A    | 63.5 A    | 62.1 A    |

### F. Over Current Protection

Test Result :

| Test condition      | Spec.           | Reading 1 | Reading 2 | Reading 3 |
|---------------------|-----------------|-----------|-----------|-----------|
| 115Vac / 100 % Load | I out *200% MAX | 140 %     | 139 %     | 138 %     |
| 230Vac / 100 % Load | I out *200% MAX | 146%      | 145 %     | 144 %     |

### 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 | ≤ 0.1 W | 0.07W     | 0.07W     | 0.07W     |

## Test Results

### Efficiency Test Report

- A. Model Number : ATM036T-A120(12.0V/3.0A)
- B. DC Power Cord : UL1185 , 18AWG ,1.5M
- C. Efficiency :  
LEVEL VI EFF(av)  $\geq$  87.403% & Eff  $\geq$  78.303% @10% Load
- D. NO Load Power Consumption :  
LEVEL VI 0.1W max.
- E. Testing Dequpment :
1. AC Power Source : " Chroma 61605
2. Electronic Load : " PRODIGIT " 3311F
3. Power Meter : "YOKOGAWA " WT310
4. Digital Meter : " FLUKE " 179
- 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                                       |                       |                      |                      |                      |                      |                     |
| Rms Output Current(mA)                         | 3000mA                | 2250mA               | 1500mA               | 750mA                | 300mA                | 0mA                 |
| Rms Output Voltage(V)                          | 11.850V               | 11.939V              | 12.027V              | 12.114V              | 12.174V              | 12.201V             |
| Active Output Power(W)                         | 35.55W                | 26.86W               | 18.04W               | 9.09W                | 3.65W                | 0.00W               |
| Rms Input Voltage(V)                           | 115V                  | 115V                 | 115V                 | 115V                 | 115V                 | 115V                |
| Rms Input Current(A)                           | 0.733A                | 0.594A               | 0.456A               | 0.310A               | 0.266A               | 0.199A              |
| Rms Input Power(W)                             | 40.86W                | 30.55W               | 20.33W               | 10.21W               | 4.20W                | 0.050W              |
| Total Harmonic Distortion of the input current | 162.00%               | 177.50%              | 194.32%              | 217.72%              | 239.97%              | 154.21%             |
| True Power Factor                              | 0.487                 | 0.450                | 0.393                | 0.289                | 0.225                | 0.002               |
| Power Consumed by UUT(W)                       | 5.31W                 | 3.69W                | 2.29W                | 1.12W                | 0.55W                | 0.05W               |
| Efficiency                                     | 87.01%                | 87.93%               | 88.74%               | 88.99%               | 86.96%               | *                   |
| Average Efficiency                             | 88.17%                |                      |                      |                      |                      | *                   |

#### 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                                       |                       |                      |                      |                      |                      |                     |
| Rms Output Current(mA)                         | 3000mA                | 2250mA               | 1500mA               | 750mA                | 300mA                | 0mA                 |
| Rms Output Voltage(V)                          | 11.845V               | 11.935V              | 12.023V              | 12.112V              | 12.174V              | 12.201V             |
| Active Output Power(W)                         | 35.54W                | 26.85W               | 18.03W               | 9.08W                | 3.65W                | 0.00W               |
| Rms Input Voltage(V)                           | 230V                  | 230V                 | 230V                 | 230V                 | 230V                 | 230V                |
| Rms Input Current(A)                           | 0.504A                | 0.419A               | 0.328A               | 0.235A               | 0.218A               | 0.184A              |
| Rms Input Power(W)                             | 40.82W                | 30.49W               | 20.40W               | 10.28W               | 4.32W                | 0.064W              |
| Total Harmonic Distortion of the input current | 223.85%               | 239.25%              | 253.31%              | 276.62%              | 365.71%              | 456.32%             |
| True Power Factor                              | 0.352                 | 0.315                | 0.272                | 0.191                | 0.141                | 0.002               |
| Power Consumed by UUT(W)                       | 5.29W                 | 3.64W                | 2.37W                | 1.20W                | 0.67W                | 0.06W               |
| Efficiency                                     | 87.11%                | 88.15%               | 88.52%               | 88.60%               | 85.07%               | *                   |
| Average Efficiency                             | 88.10%                |                      |                      |                      |                      | *                   |