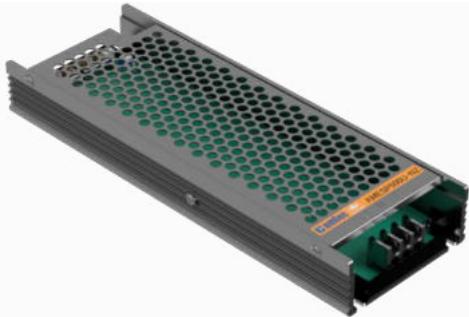


AMESP500U-NZ



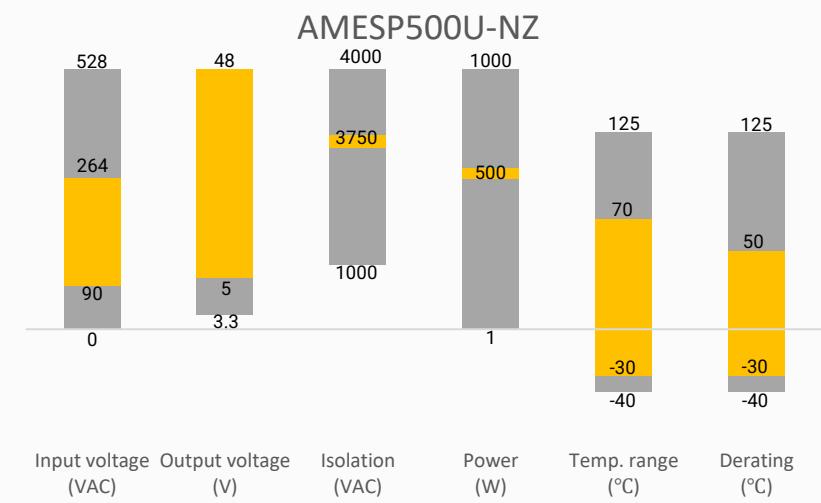
Enclosed

Features



- Universal Input: 90 - 264VAC/127 - 370VDC
- Operating Temp: -30 °C to +70 °C
- PFC>0.95
- High isolation voltage: Up to 3750VAC
- Low ripple & noise, 360mV(p-p) typ.
- Output short circuit, over-current, over-voltage and over temperature protection
- Regulated Output
- Optional conformal coating
- Active power factor correction

Summary



Training



Applications



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes



Power Grid



Industrial



Telecom



Instrumentation

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Models & Specifications



Single Output

| Model | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Max Output Wattage (W) | Output Voltage (V) | Output Voltage Adjustable Range (V) | Output Current max (A) | Maximum capacitive load (μ F) | Average Efficiency (%) |
|-------------------|------------------------|---------------------|------------------------|--------------------|-------------------------------------|------------------------|------------------------------------|------------------------|
| AMESP500U-5SNZ-P | 90-264/47-63 | 127-370 | 400 | 5 | 4.5-5.5 | 80 | 12000 | 90 |
| AMESP500U-12SNZ-P | 90-264/47-63 | 127-370 | 500.4 | 12 | 11.4-12.6 | 41.7 | 10000 | 94 |
| AMESP500U-15SNZ-P | 90-264/47-63 | 127-370 | 501 | 15 | 14.3-15.8 | 33.4 | 9000 | 94 |
| AMESP500U-24SNZ-P | 90-264/47-63 | 127-370 | 501.6 | 24 | 22.8-25.2 | 20.9 | 8000 | 94.5 |
| AMESP500U-36SNZ-P | 90-264/47-63 | 127-370 | 500.4 | 36 | 34.2-37.8 | 13.9 | 6000 | 95 |
| AMESP500U-48SNZ-P | 90-264/47-63 | 127-370 | 501.6 | 48 | 45.6-50.4 | 10.45 | 4000 | 95 |

Note: The “-P” suffix indicates a terminal protective cover (ex. AMESP500U-12SNZ-P). For optional conformal coating, add “Q” after the “-P” (ex. AMESP500U-12SNZ-PQ is conformal coated version with terminal protective cover).

Input Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|-----------------|--------------------|---------|---------|-------|
| Input current | 115VAC | 4.85 | | A |
| | 230VAC | 2.6 | | A |
| Inrush current | 115VAC, cold start | 30 | | A |
| | 230VAC, cold start | 60 | | A |
| Power factor | 115VAC, Full load | 0.98 | | |
| | 230VAC, Full load | 0.95 | | |
| Leakage current | 240VAC | | 0.75 | mA |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------|----------------------------|-----------|---------|--------|
| Voltage accuracy | Full load, 5V output | ± 2 | | % |
| | Full load, others output | ± 1 | | % |
| Line regulation | Full load, 5V output | ± 0.5 | | % |
| | Full load, others output | ± 0.3 | | % |
| Load regulation | 0-100% load, 5V output | ± 1 | | % |
| | 0-100% load, others output | ± 0.5 | | % |
| Ripple & Noise* | 5V, 12V, 15V output | | 200 | mV p-p |
| | 24V output | | 240 | mV p-p |
| | 36V, 48V output | | 360 | mV p-p |
| Hold up time | 115VAC | 12 | | ms |
| | 230VAC | 12 | | ms |

* Ripple and Noise are measured at 20MHz bandwidth with a 47 μ F electrolytic capacitor and a 0.1 μ F ceramic capacitor. Please refer to the application note for specific details.

Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|--------------------------------|------------|---------|-------|------------|
| Tested I/O voltage | 60 sec | | 3750 | VAC |
| Tested Input to GND voltage | 60 sec | | 2000 | VAC |
| Tested Output to GND voltage | 60 sec | | 1250 | VAC |
| Resistance (I/O, I/O to GND) * | 500VDC | | 100 | M Ω |

* Tested under 25 \pm 5°C ambient temperature with relative humidity <95% and no condensation.

General Specifications

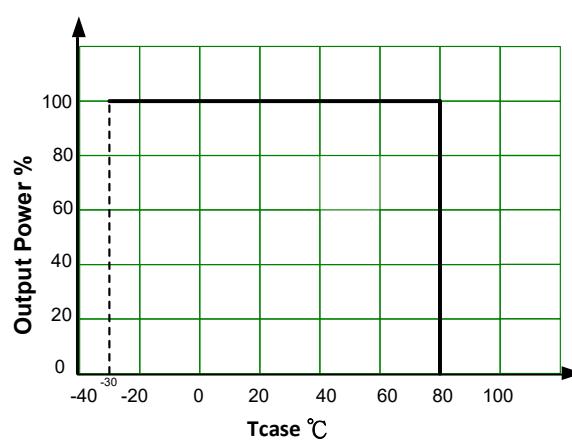
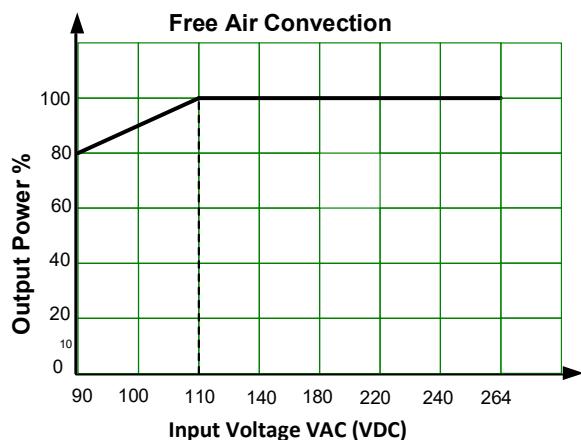
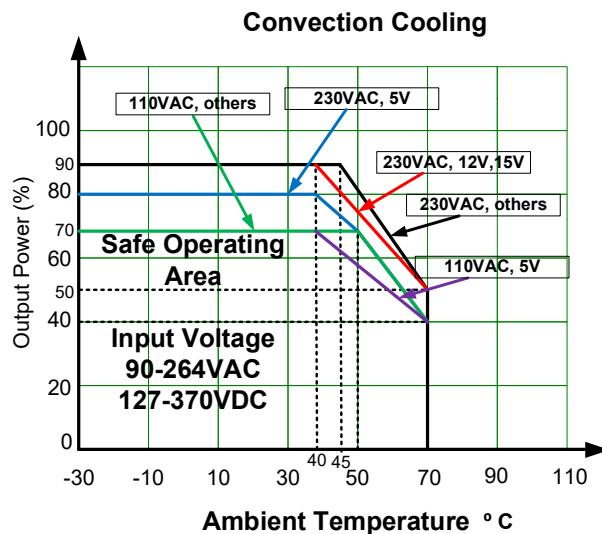
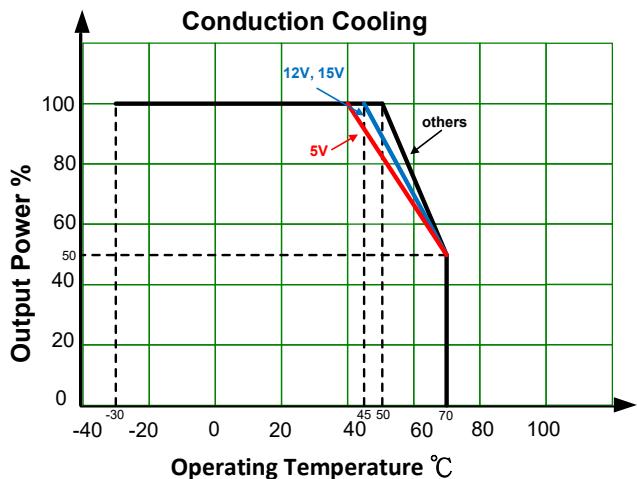
| Parameters | Conditions | Typical | Maximum | Units |
|-----------------------------|---|------------|---------|----------------|
| Safety class | Class I | | | |
| Over voltage category | OVC III, According to EN62368-1 | | | |
| Over Current protection | Hiccup, Auto recovery | ≥ 110 | 140 | % of I_{out} |
| | Shut-down, Manual recovery, 5V output | | 6.75 | VDC |
| | Shut-down, Manual recovery, 12V output | | 15.6 | VDC |
| | Shut-down, Manual recovery, 15V output | | 19.5 | VDC |
| | Shut-down, Manual recovery, 24V output | | 31.2 | VDC |
| | Shut-down, Manual recovery, 36V output | | 46.8 | VDC |
| Over voltage protection | Shut-down, Manual recovery, 48V output | | 62.4 | VDC |
| Over temperature protection | Shut-down, Auto recovery | | | |
| Short circuit protection | Hiccup, Auto recovery | | | |
| Operating temperature | See derating graph | -30 to +70 | | °C |
| Storage temperature | | -40 to +85 | | °C |
| 5V output at 40 °C to 70 °C | 1.67 | | % / °C | |
| Power derating | 12V, 15V output at 45 °C to 70 °C | 2 | | % / °C |
| | Others output at 50 °C to 70 °C | 2.5 | | % / °C |
| | 90VAC ~ 110VAC@60Hz | 1 | | % / VAC |
| Temperature coefficient | 0 ~ 50 °C | ± 0.03 | | % / °C |
| Cooling | Free air convection | | | |
| Humidity | Non-condensing, Storage | ≥ 10 | 95 | % RH |
| | Non-condensing, Operating | ≥ 20 | 95 | % RH |
| Case material | Metal | | | |
| Weight | | 900 | | g |
| Dimensions (L x W x H) | 9.17 x 3.19 x 1.22inch (233 x 81 x 31mm) | | | |
| Vibration | 10 ~ 500Hz, 5G 10min / 1cycle, 60min. Each along X, Y, Z axes | | | |
| MTBF | > 167 600 hrs MIL-HDBK-217(25°C) | | | |

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

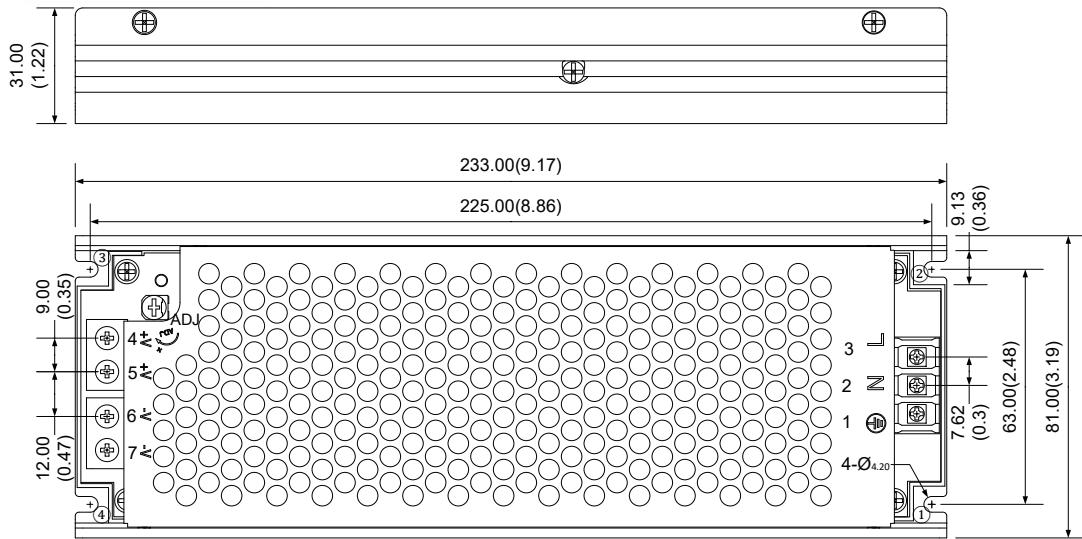
Safety Specifications

| Parameters | Over voltage category | Design to meet III; According to EN62368-1 |
|------------|--|--|
| Standards | Information technology Equipment | Design to meet BS EN/EN62368-1, EN/EN61558-1, BS EN/EN61558-2-16 |
| | EMC - Conducted and radiated emission | CISPR32 / EN55032, class B |
| | Harmonic current | IEC 61000-3-2 |
| | Voltage flicker | IEC 61000-3-3 |
| | Electrostatic Discharge Immunity | IEC 61000-4-2 |
| | RF, Electromagnetic Field Immunity | IEC 61000-4-3 |
| | Electrical Fast Transient/Burst Immunity | IEC 61000-4-4 |
| | Surge Immunity | IEC 61000-4-5 |
| | RF, Conducted Disturbance Immunity | IEC 61000-4-6 |
| | Power-frequency Magnetic Field | IEC 61000-4-8 |
| | Voltage dips, Short Interruptions Immunity | IEC 61000-4-11 |

Derating



Dimensions



Pin Output Specifications

| Pin | Single |
|-----|--------------|
| 1 | PE GND |
| 2 | AC Input (N) |
| 3 | AC Input (L) |
| 4 | +V Output |
| 5 | +V Output |
| 6 | -V Output |
| 7 | -V Output |

Note:

Unit: mm(inch)

General tolerance: $\pm 1.0(0.04)$

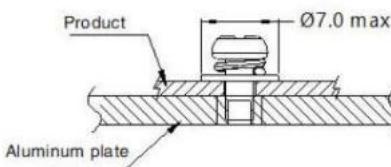
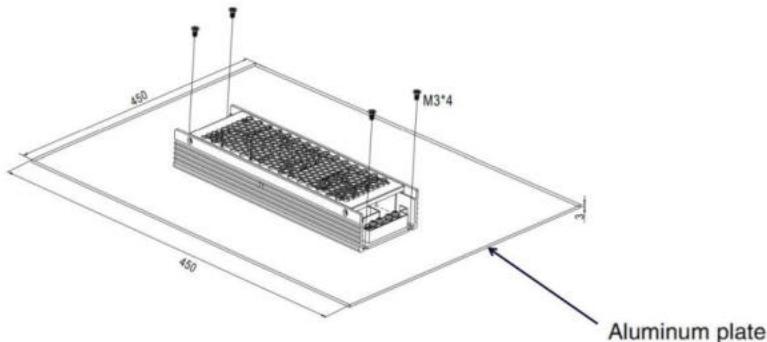
Connector screw: M3 position 1-3, M4 position 4-7

Note:

1. Operate with additional aluminum plate

In order to meet the "Derating Curve" and the "Static Characteristics", the series model must be installed onto an aluminum plate (or the cabinet of the same size) on the bottom. The size of the suggested aluminum plate is 450mm x 450mm. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and the series model must be firmly mounted at the center of the aluminum plate.

2. It is suggested to install the product with M3 combination screws, and the product must be firmly installed at the center of the aluminum plate.



| Position | Screw Spec. | Torque(max) |
|----------|-------------|-------------|
| ① - ④ | M3 | 0.4N · m |

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.