# AMESP150-277NZ

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The AMESP150-277NZ is an AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 90-305VAC and an output voltage range from 5-48V, this series will offer many benefits to your new system design.

This new series offers great operating temperatures, from -30°C to 50°C with full power also features isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 280,000h, output short circuit protection (OSCP), output over-current protection (OCP), output over-voltage protection (OVP) and over-temperature protection (OTP) come standard with the series.

The AMESP150-277NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication, and civil applications.

## Features

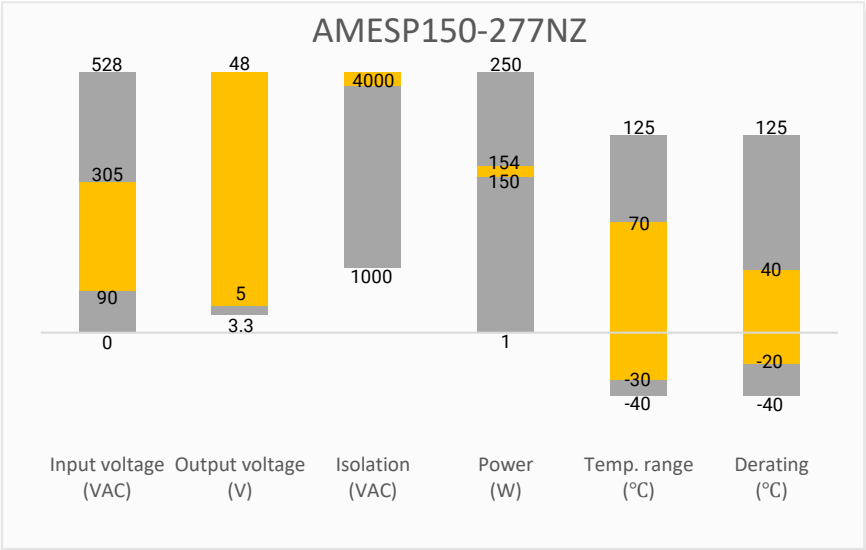
- Universal Input: 90 - 305VAC/127 - 430VDC
- Operating Temp: -30 °C to +70 °C
- PFC function
- High isolation voltage: Up to 4000VAC
- Low ripple & noise, 250mV(p-p).
- Output short circuit, over-current, over-voltage and over temperature protection
- Regulated Output

RoHS

3yr Warranty

With PFC

## Summary




## Training




Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

## Applications

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) | Average Efficiency (%) |
|---|---|---|---|---|---|---|---|
| AMESP150-5S277NZ-P | 90-305/47-63 | 127-430 | 150 | 5 | 4.75-5.5 | 30 | 87 |
| AMESP150-7S277NZ-P | 90-305/47-63 | 127-430 | 150 | 7.5 | 6.75-8.25 | 20 | 88 |
| AMESP150-12S277NZ-P | 90-305/47-63 | 127-430 | 150 | 12 | 11.4-13.2 | 12.5 | 89 |
| AMESP150-15S277NZ-P | 90-305/47-63 | 127-430 | 150 | 15 | 14.3-16.5 | 10 | 88.5 |
| AMESP150-24S277NZ-P | 90-305/47-63 | 127-430 | 151.2 | 24 | 22.8-26.4 | 6.3 | 89 |
| AMESP150-27S277NZ-P | 90-305/47-63 | 127-430 | 151.2 | 27 | 25.7-29.7 | 5.6 | 89.5 |
| AMESP150-48S277NZ-P | 90-305/47-63 | 127-430 | 153.6 | 48 | 45.6-52.8 | 3.2 | 90 |

Note: The "-P" suffix indicates a terminal protective cover and conformal coating (ex. AMESP150-5S277NZ-P).

## Input Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Input current | 115VAC | | 1.6 | A |
| | 230VAC | | 0.8 | A |
| Inrush current | 230VAC, cold start | | 45 | A |
| Power factor | 115VAC, Full load | 0.98 | | |
| | 230VAC, Full load | 0.93 | | |
| Leakage current | 240VAC | | 2 | mA |

## Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Voltage accuracy | Full load | ±2 | | % |
| Line regulation | Full load | ±0.5 | | % |
| Load regulation | 0-100% load, 5V output | ±1 | | % |
| | 0-100% load, other output | ±0.5 | | % |
| Ripple & Noise* | 5V,7.5V,12V,15V output | 100 | | mV p-p |
| | 24V,27V output | 150 | | mV p-p |
| | 48V output | 250 | | mV p-p |
| Remote control | Power ON, 0-0.8VDC | ≥ 0 | 0.8 | VDC |
| | Power OFF, 4-10VDC | ≥ 4 | 10 | VDC |
| Hold up time | 230VAC | ≥ 16 | | ms |

* Ripple and Noise are measured at 20MHz bandwidth with a 47μF electrolytic capacitor and a 0.1μF ceramic capacitor. Please refer to the application not for specific details.

## Isolation Specifications

| Parameters | Conditions | Typical | Rated | Units |
|---|---|---|---|---|
| Tested I/O voltage | | | 4000 | VAC |
| Tested Input to GND voltage | | | 2000 | VAC |
| Tested Output to GND voltage | | | 500 | VAC |
| Resistance (I/O, I/O to GND)* | 500VDC | | 100 | MΩ |

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


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## General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|---|---|---|---|---|
| Over voltage category | OVC III | | | |
| Over Current protection | Constant current limiting, Auto recovery | ≥ 105 | 135 | % of Iout |
| Over voltage protection | Output voltage turn off, Manual recovery, 5V output | 5.75 | 6.75 | VDC |
| | Output voltage turn off, Manual recovery, 7.5V output | 8.6 | 10.2 | VDC |
| | Output voltage turn off, Manual recovery, 12V output | 13.2 | 16.2 | VDC |
| | Output voltage turn off, Manual recovery, 15V output | 16.5 | 20.25 | VDC |
| | Output voltage turn off, Manual recovery, 24V output | 26.4 | 32.4 | VDC |
| | Output voltage turn off, Manual recovery, 27V output | 29.7 | 36.45 | VDC |
| | Output voltage turn off, Manual recovery, 48V output | 52.8 | 64.8 | VDC |
| Over temperature protection | Shut-down, Auto recovery | | | |
| Short circuit protection | Hiccup, Continuous, Auto recovery | | | |
| Operating temperature | See derating graph | -30 to +70 | | °C |
| Storage temperature | | -40 to +85 | | °C |
| Power derating | 40 °C to 60 °C, 5V output | 2 | | % / °C |
| | 50 °C to 70 °C, others | 2 | | % / °C |
| | 90VAC ~ 100VAC | 2 | | % / VAC |
| Temperature coefficient | 0 ~ 50°C | ±0.05 | | % / °C |
| Cooling | Free air convection | | | |
| Humidity | Non-condensing, Storage | ≥ 10 | 95 | % RH |
| Case material | Metal | | | |
| Weight | | 550 | | g |
| Dimensions (L x W x H) | 7.05 x 3.90 x 1.18inch (179.0 x 99.0 x 30.0mm) | | | |
| MTBF | > 280 000 hrs MIL-HDBK-217F(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.**

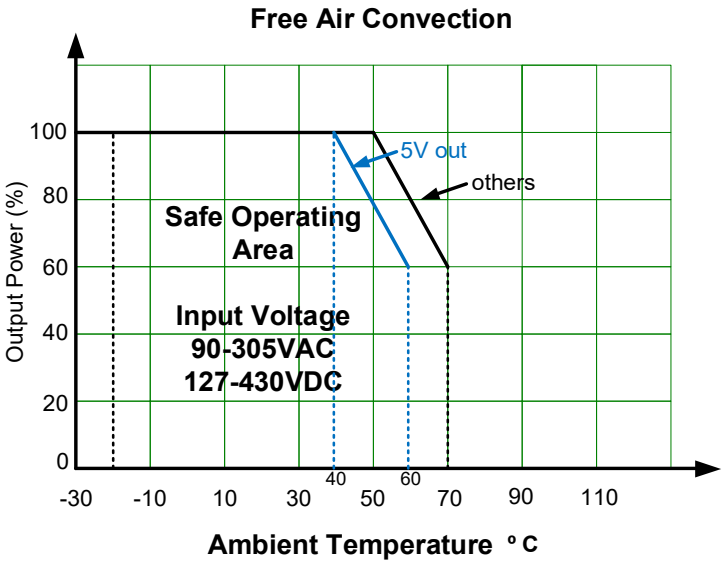
## Safety Specifications

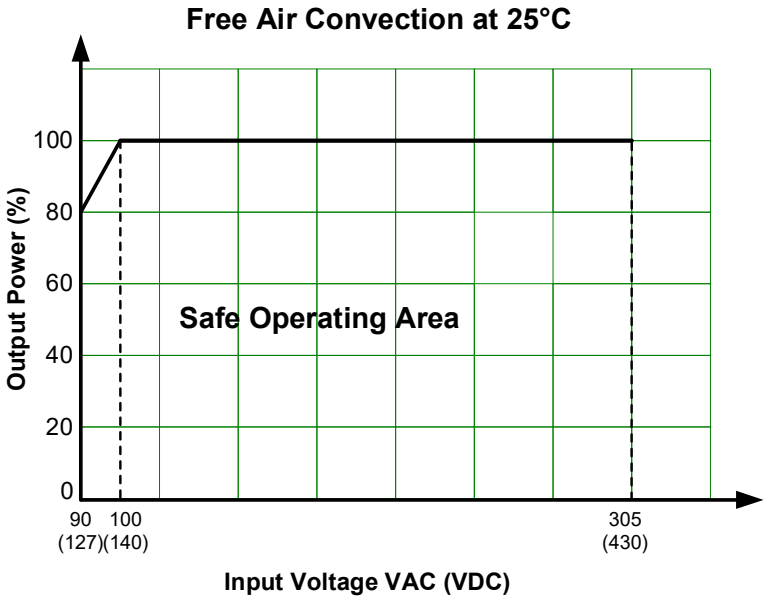
| Parameters | | |
|---|---|---|
| Standards | Information technology Equipment | Design to meet BS EN/EN62368-1, BS EN/EN61558-1, BS EN/EN61558-2-16 |
| | EMC - Conducted and radiated emission | CISPR32 / EN55032, class B |
| | Harmonic current | IEC 61000-3-2 |
| | Voltage flicker | IEC 61000-3-3 |
| | 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 |



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## Derating

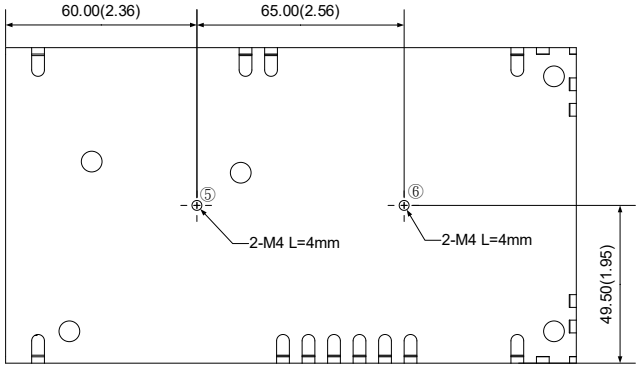


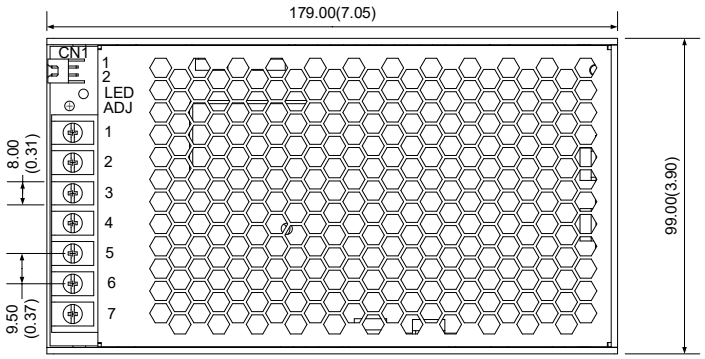



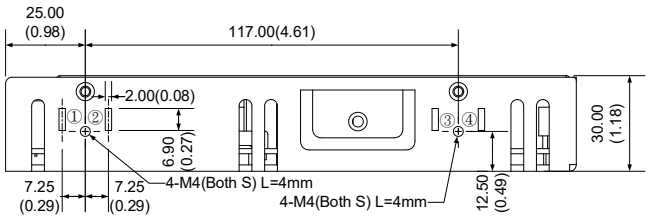


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# Dimensions




Note:
Unit: mm(inch)
Wire gauge: 22-12AWG
Connector tightening torque: M3.5, 0.8N-m
General tolerance: ±1.0(0.04)
At least one of the ① - ⑥ location must be connected to PE

| CN1 (JST S2B-XH or equivalent) | | |
|---|---|---|
| Pin | Function | Connector |
| 1 | RC+ | XH2.54 |
| 2 | RC- | |

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

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