

AMES35-277NZ







The AMES35-277NZ is an enclosed 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 wide input voltage range of 85-305VAC and an output voltage range from 5-24V, this series will offer many benefits to your new system design.

This new series offers great operating temperatures, from -30°C to 70°C and also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMES35-277NZ is suitable for street lighting controls, grid power, instrumentation, industrial controls, communication and civil applications.

Features



- Universal Input: 85 305VAC/120 430VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- Low ripple & noise: Up to 80mV(p-p) typ.
- Output short circuit, over-current, over-voltage protection
- Regulated Output

RoHS



Training



Product Training Video (click to open)

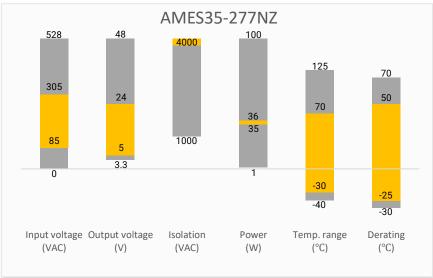
Press Release

Application Notes

Coming Soon!

Summary





Applications









Power Grid

Industrial

Telecom

Instrumentation



Models & Specifications



| Single Output | | | | | | | | |
|-----------------|---------------------------|---------------------------|---------------------------|----|---|------------------------------|------------------------------------|-----------------------------------|
| Model | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Max Output Wattage (W) | | Output Voltage Adjustable Range (V) | Output Current max (A) | Maximum capacitive load (μF) | Efficiency @230VAC Typ. (%) |
| AMES35-5S277NZ | 85-305/47-63 | 120-430 | 35 | 5 | 4.5-5.5 | 7 | 8000 | 81 |
| AMES35-12S277NZ | 85-305/47-63 | 120-430 | 36 | 12 | 10.2-13.8 | 3 | 1500 | 85 |
| AMES35-15S277NZ | 85-305/47-63 | 120-430 | 36 | 15 | 13.5-18 | 2.4 | 1000 | 86 |
| AMES35-24S277NZ | 85-305/47-63 | 120-430 | 36 | 24 | 21.6-28.8 | 1.5 | 750 | 87 |

Note: Use suffix "-P" for terminal with protective cover (ex. AMES35-5S277NZ-P is terminal with protective cover version) and suffix "-Q" for conformal coating (ex. AMES35-5S277NZ-Q is conformal coating version).

| Input Specifications | | | | | |
|----------------------|--------------------|---------|---------|-------|--|
| Parameters | Conditions | Typical | Maximum | Units | |
| Input current | 115VAC | | 0.8 | А | |
| | 230VAC | | 0.6 | А | |
| Inrush current | cold start, 115VAC | 30 | | Α | |
| | cold start, 230VAC | 50 | | Α | |
| Leakage current | 277VAC | | 0.75 | mA | |

| Output Specifications | | | | |
|-----------------------|----------------------------|---------|---------|--------|
| Parameters | Conditions | Typical | Maximum | Units |
| Voltage escuracy | Full load range, 5V output | ±2 | | % |
| Voltage accuracy | Full load range, Others | ±1 | | % |
| Line regulation | Rated load | ±0.5 | | % |
| | 0-100% load, 5V output | ±1 | | % |
| Load regulation | 0-100% load, Others | ±0.5 | | % |
| | 5V output | 80 | | mV p-p |
| Ripple & Noise* | 12V,15V output | 120 | | mV p-p |
| | 24V output | 150 | | mV p-p |
| Hold up time | 115VAC | 8 | | ms |
| | 230VAC | 30 | | ms |

^{*} Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details. Measured with 47μF electrolytic capacitor and 0.1μF ceramic capacitor.

| Isolation Specifications | | | | | |
|------------------------------|--------------------------------|---------|-------|-------|--|
| Parameters | Conditions | Typical | Rated | Units | |
| Tested I/O voltage | 60 sec, leakage current < 10mA | | 4000 | VAC | |
| Tested Input to GND voltage | 60 sec, leakage current < 10mA | | 2000 | VAC | |
| Tested Output to GND voltage | 60 sec, leakage current < 10mA | | 1250 | VAC | |
| Resistance (I/O, I/O to GND) | 500VDC | | 100 | ΜΩ | |





| Parameters | Conditions | Typical | Maximum | Units | |
|--------------------------|---|------------|---------------|-----------|--|
| raiailieteis | Conditions | Турісаі | IVIAAIIIIUIII | Offics | |
| Safety class | Class I | | | | |
| Switching Frequency | | 65 | | KHz | |
| Over Current protection | 230VAC, Rated load, Normal or high temperature, Auto recovery | ≥ 110 | 200 | % of lout | |
| Over Current protection | 230VAC, Rated load, Low temperature, Auto recovery | ≥ 110 | | % of lout | |
| | 5V output, Hiccup, Auto recovery | | 6.3 | VDC | |
| Over voltage protection | 12V output, Hiccup, Auto recovery | | 16.2 | VDC | |
| Over voltage protection | 15V output, Hiccup, Auto recovery | | 21.75 | VDC | |
| | 24V output, Hiccup, Auto recovery | | 33.6 | VDC | |
| Short circuit protection | Hiccup, Continuous, Auto recovery, Recovery time < 5 sec | | | | |
| Operating temperature | See derating graph | -30 to +70 | | °C | |
| Storage temperature | | -40 to +85 | | °C | |
| Power consumption | | | 0.3 | W | |
| | -30 °C to -25 °C, 85VAC ~ 100VAC | 5 | | %/°C | |
| Power derating | 50 °C to 70 °C | 2 | | %/°C | |
| rower derating | 85VAC ~ 100VAC | 1.33 | | % / VAC | |
| | 277VAC ~ 305VAC | 0.71 | | % / VAC | |
| Temperature coefficient | | ±0.03 | | %/°C | |
| Cooling | Free air convection | | | | |
| Humidity | Operating, Non-condensing | > 20 | 90 | % RH | |
| Hamiliarcy | Storage, Non-condensing | | 95 | % RH | |
| Case material | Metal (1100 Aluminum, SGCC) | | | | |
| Weight | | 170 | | g | |
| Dimensions (L x W x H) | 3.90 x 3.23 x 1.18inch (99.0 x 82.0 x 30.0mm) | | | | |
| MTBF | > 300 000 hrs (MIL-HDBK -217F, t=+25°C) | | | | |

| Safety Specifications | | | | | |
|-----------------------|--|--|--|--|--|
| Parameters | | | | | |
| Agency approval | EN/UL62368-1 | EN/UL62368-1 | | | |
| | Information technology Equipment | Design to meet IEC 62368, EN60335, EN61558, GB4943 | | | |
| | EMC - Conducted and radiated emission | CISPR32 / EN55032, class B | | | |
| | Harmonic current | IEC 61000-3-2 Class A | | | |
| Standards | Electrostatic Discharge Immunity | IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria A | | | |
| | RF, Electromagnetic Field Immunity | IEC 61000-4-3 10V/m, Criteria A | | | |
| | Electrical Fast Transient/Burst Immunity | IEC 61000-4-4 ±2KV, Criteria A | | | |
| | Surge Immunity | IEC 61000-4-5 L-L ±2KV/L-G ±4KV, Criteria A | | | |

IEC 61000-4-6 10Vr.m.s, Criteria A IEC 61000-4-11 0%, 70%, Criteria B

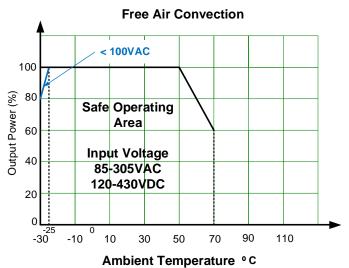
RF, Conducted Disturbance Immunity

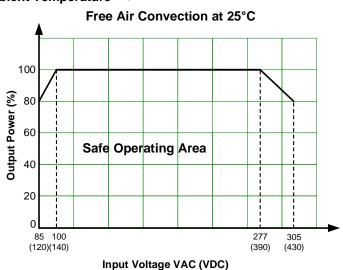
Voltage dips, Short Interruptions Immunity









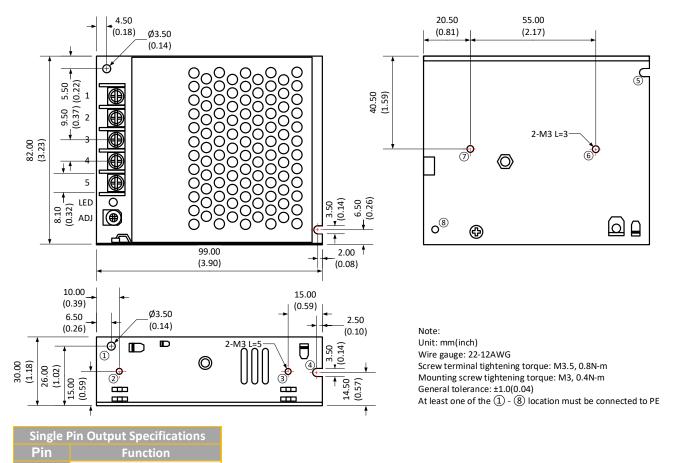


Dimensions



AMES35-xx277NZ and AMES35-xx277NZ-Q series



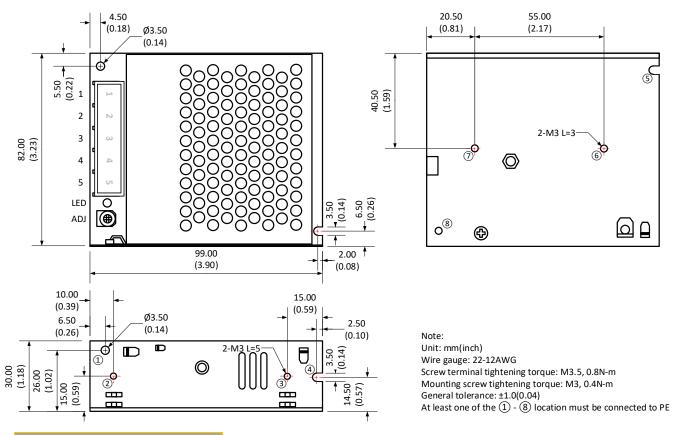


1 +V Input (L) 2 -V Input (N) 3 PE GND 4 -V Output 5 +V Output ADJ Voltage adj knob

AMES35-xx277NZ-P series







| Single Pin Output Specifications | | | | |
|----------------------------------|--------------|--|--|--|
| Pin | Function | | | |
| 1 | +V Input (L) | | | |
| 2 -V Input (N) | | | | |
| 3 | 3 PE GND | | | |
| 4 | -V Output | | | |
| 5 +V Output | | | | |
| ADJ Voltage adj knob | | | | |

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.