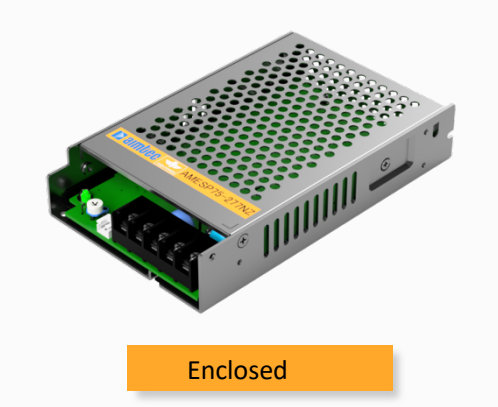


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AMESP75-277NZ



Enclosed

The AMESP75-277NZ is an AC/DC converter that offers greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-305VAC 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 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), output over-voltage protection (OVP) and an over-temperature protection (OTP) come standard with the series.

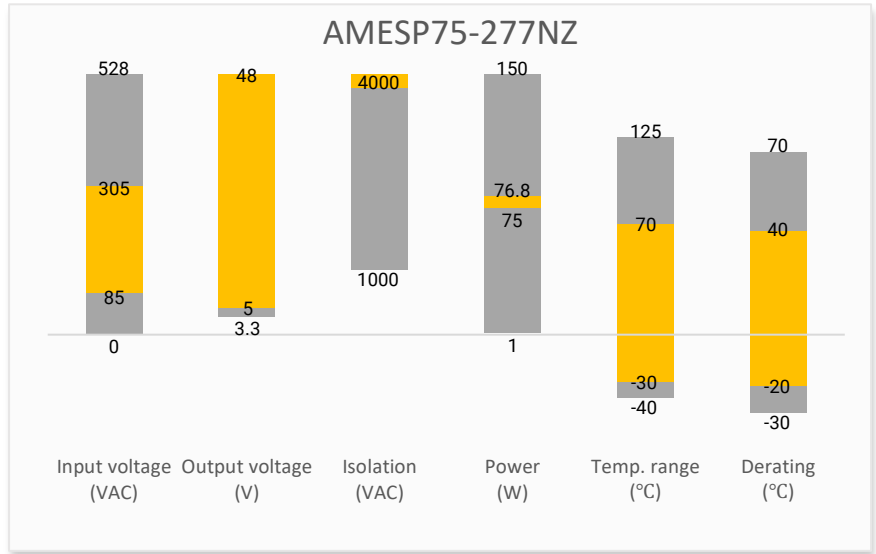
The AMESP75-277NZ is suitable for EV supply equipment, grid power, household appliance, instrumentation, industrial controls and civil applications.

Features



- Universal Input: 85 - 305VAC/120 - 430VDC
- Operating Temp: -30 °C to +70 °C
- High isolation voltage: Up to 4000VAC
- Low ripple & noise: 200mV(p-p).
- Output short circuit, over-current, over-voltage, over-temperature protection
- Regulated Output

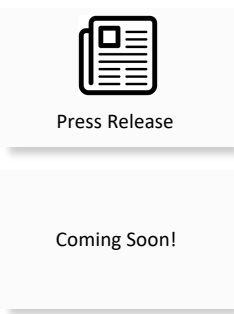
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

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 (μF) | Efficiency @230VAC Typ. (%) |
| AMESP75-5S277NZ | 85-305/47-63 | 120-430 | 75 | 5 | 4.75-5.5 | 15 | 10000 | 81 |
| AMESP75-12S277NZ | 85-305/47-63 | 120-430 | 75.6 | 12 | 11.4-13.2 | 6.3 | 6800 | 84 |
| AMESP75-15S277NZ | 85-305/47-63 | 120-430 | 75 | 15 | 14.3-16.5 | 5 | 5000 | 85 |
| AMESP75-24S277NZ | 85-305/47-63 | 120-430 | 76.8 | 24 | 22.8-26.4 | 3.2 | 1500 | 86 |
| AMESP75-48S277NZ | 85-305/47-63 | 120-430 | 76.8 | 48 | 45.6-52.8 | 1.6 | 680 | 88 |

Note: Use suffix “-P” for terminal with protective cover (ex. AMESP75-5S277NZ-P is terminal with protective cover version) and suffix “-Q” for conformal coating (ex. AMESP75-5S277NZ-Q is conformal coating version).

| Input Specifications | | | | |
|----------------------|--------------------|---------|---------|-------|
| Parameters | Conditions | Typical | Maximum | Units |
| Input current | 115VAC | | 1 | A |
| | 230VAC | | 0.6 | A |
| Inrush current | cold start, 115VAC | 20 | | A |
| | cold start, 230VAC | 35 | | A |
| Power factor | 115VAC, Full load | >0.98 | | |
| | 230VAC, Full load | >0.93 | | |
| Leakage current | 277VAC/60Hz | | 2 | mA |

| Output Specifications | | | | |
|-----------------------|----------------------------|---------|---------|--------|
| Parameters | Conditions | Typical | Maximum | Units |
| Voltage accuracy | Full load range, 5V output | ±2 | | % |
| Line regulation | Rated load | ±0.5 | | % |
| Load regulation | 0-100% load, 5V output | ±1 | | % |
| | 0-100% load, Others | ±0.5 | | % |
| Ripple & Noise* | Others | | 120 | mV p-p |
| | 48V output | | 200 | mV p-p |
| Hold up time | 230VAC | 16 | | ms |
| Start up time | Full load | | 3 | S |
| Remote control | Power ON | ≥ 0 | 0.8 | VDC |
| | Power OFF | ≥ 4 | 10 | VDC |

* 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 < 5mA | | 500 | VAC |
| Resistance (I/O, I/O to GND) | 500VDC | | 100 | MΩ |

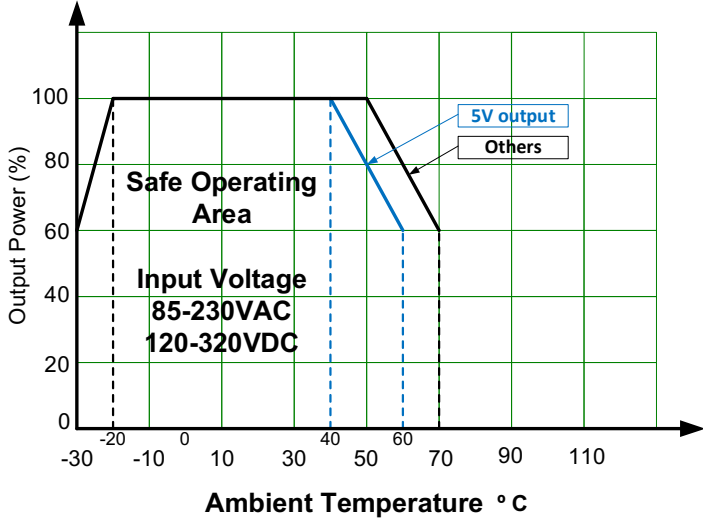
| General Specifications | | | | |
|---|---|------------|---------|-----------|
| Parameters | Conditions | Typical | Maximum | Units |
| Safety class | Class I | | | |
| Switching Frequency | | 65 | | KHz |
| Over Current protection | Auto recovery | ≥ 105 | | % of Iout |
| Over voltage protection | 5V output, Clamp or hiccup, Auto recovery | | 7 | VDC |
| | 12V output, Clamp or hiccup, Auto recovery | | 20 | VDC |
| | 15V output, Clamp or hiccup, Auto recovery | | 25 | VDC |
| | 24V output, Clamp or hiccup, Auto recovery | | 32.4 | VDC |
| | 48V output, Clamp or hiccup, Auto recovery | | 60 | VDC |
| Over temperature protection | Activation | | 85 | °C |
| | Deactivation | 50 | | °C |
| Short circuit protection | Hiccup, Continuous, Auto recovery, Recovery time < 3 sec after short have been released | | | |
| Operating temperature | See derating graph, for 5V model only | -30 to +60 | | °C |
| | See derating graph, others | -30 to +70 | | °C |
| Storage temperature | | -40 to +85 | | °C |
| Power derating | -30 °C to -20 °C, 85VAC ~ 230VAC | 4 | | % / °C |
| | 40 °C to 60 °C, 5V output | 2 | | % / °C |
| | 50 °C to 70 °C, Others | 2 | | % / °C |
| | 85VAC ~ 100VAC | 1.33 | | % / VAC |
| | 100VAC ~ 305VAC | 0 | | % / VAC |
| | 2000m ~ 5000m | 5 | | % / Km |
| Temperature coefficient | | ±0.03 | | % / °C |
| Cooling | Free air convection | | | |
| Humidity | Non-condensing | | 95 | % RH |
| Altitude | | | 5000 | m |
| Case material | Metal (1100 Aluminum, SGCC) | | | |
| Weight | | 380 | | g |
| Dimensions (L x W x H) | 6.26 x 3.82 x 1.18inch (159.0 x 97.0 x 30.0mm) | | | |
| MTBF | > 300 000 hrs (MIL-HDBK -217F, t=+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 IEC/EN/UL 62368, EN60335, GB4943 |
| | EMC - Conducted and radiated emission | CISPR32 / EN55032, class B |
| | Harmonic Current | IEC 61000-3-2 Class A |
| | Flicker | IEC 61000-3-3 |
| | Electrostatic Discharge Immunity | IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria B |
| | 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 |
| | RF, Conducted Disturbance Immunity | IEC 61000-4-6 10Vr.m.s, Criteria A |
| | Voltage dips, Short Interruptions Immunity | IEC 61000-4-11 0%, 70%, Criteria B |

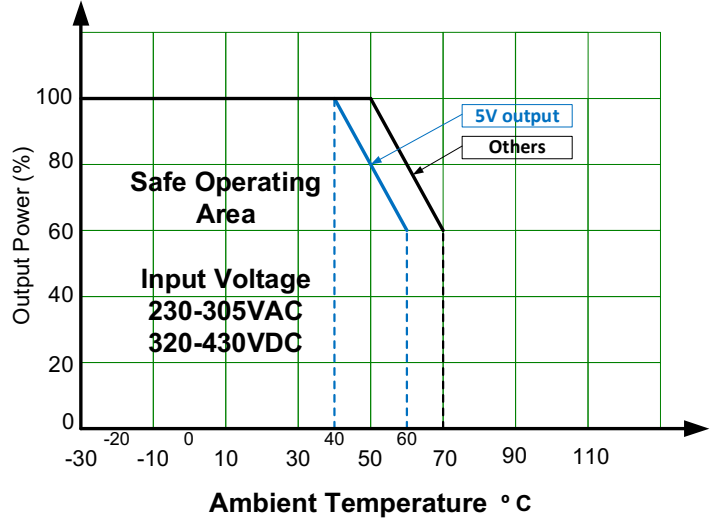
Derating



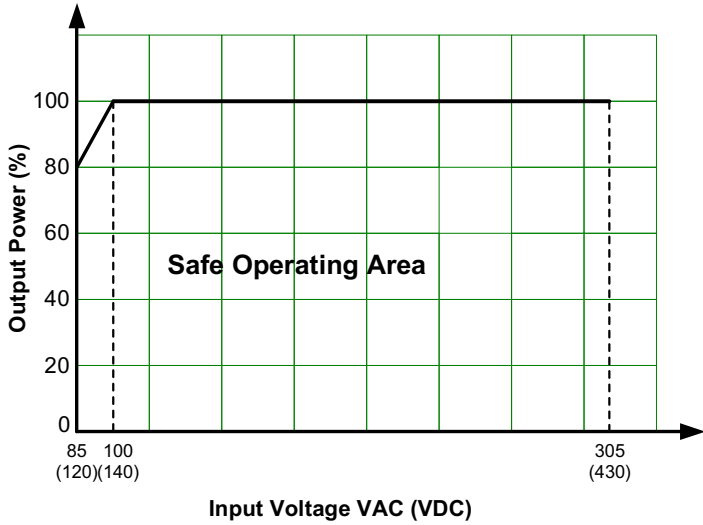
Free Air Convection



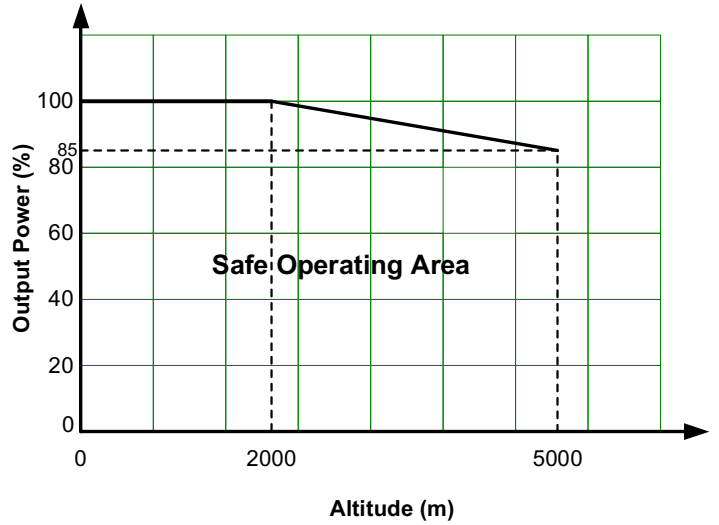
Free Air Convection



Free Air Convection at 25°C

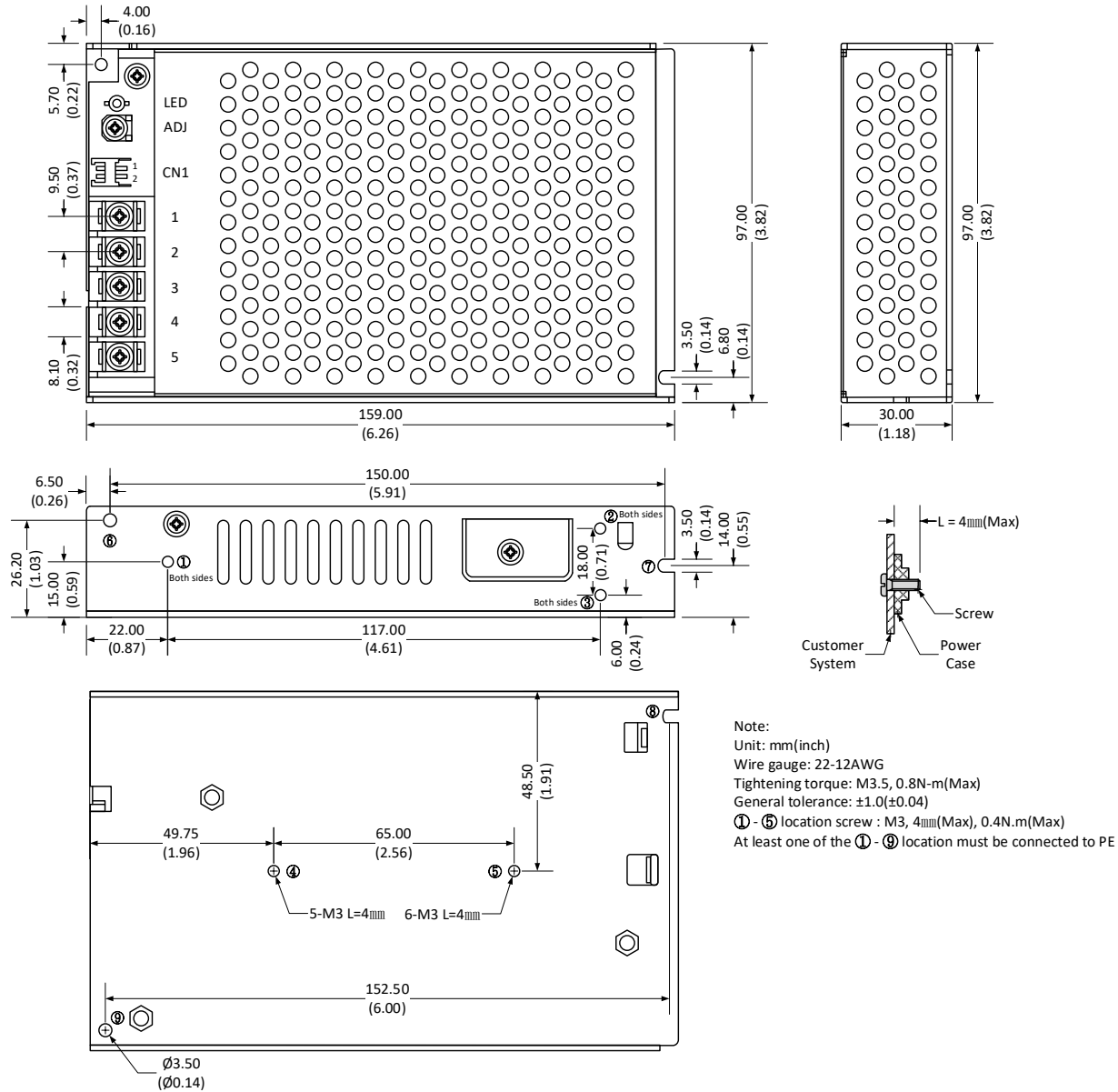


Free Air Convection



Dimensions

AMESP75-xx277NZ and AMESP75-xx277NZ-Q series



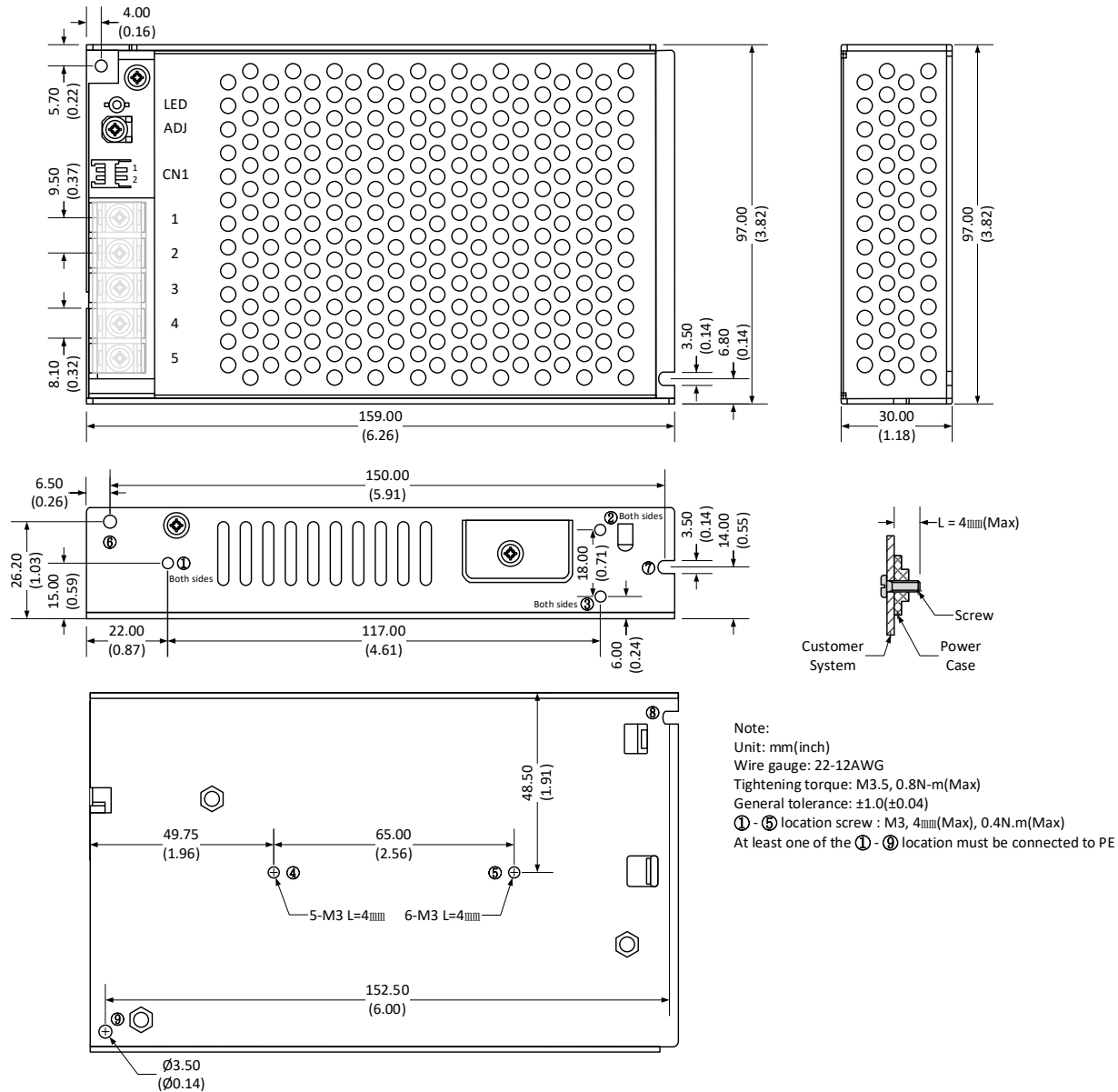
Single Pin Output Specifications

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

CN1 : JST-S2B-XH-A or the same spec.

| Pin | Function | Connector | Terminal |
|-----|----------|-------------------|-------------------------|
| 1 | RC+ | JST : XHP-2 | JST : SXH-001T/SXH-002T |
| 2 | RC- | or the same spec. | or the same spec. |

AMESP75-xx277NZ-P series



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

| CN1 : JST-S2B-XH-A or the same spec. | | | |
|--------------------------------------|----------|-------------------|-------------------------|
| Pin | Function | Connector | Terminal |
| 1 | RC+ | JST : XHP-2 | JST : SXH-001T/SXH-002T |
| 2 | RC- | or the same spec. | or the same spec. |

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