

## Series AME2-AZ

### 2Watt | AC-DC Converter



#### FEATURES:

- I/O Isolation 3000VAC
- Operating Temp: -40°C to +70°C
- Input: 90-305VAC, 47-440Hz, or 130-430 VDC
- Optional 90-528VAC, 47-440Hz, or 130-745 VDC
- RoHS compliant
- Energy Star compliant
- Ultra-small package
- Over load, Short Circuit Protection



#### Models Single output

| Model        | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Temperature range (°C) | Output Voltage (V) | Output Current max (mA) | Maximum capacitive Load (μF) | Efficiency (%) |         |         |         |
|--------------|------------------------|---------------------|------------------------|--------------------|-------------------------|------------------------------|----------------|---------|---------|---------|
|              |                        |                     |                        |                    |                         |                              | 115 VAC        | 230 VAC | 277 VAC | 480 VAC |
| AME2-3.3SAZ  | 90-305/47-440          | 130-430             | -40 to +70             | 3.3                | 600                     | 2200                         | 64             | 63      | 61      |         |
| AME2-5SAZ    | 90-305/47-440          | 130-430             | -40 to +70             | 5                  | 400                     | 1100                         | 67             | 66      | 63      |         |
| AME2-12SAZ   | 90-305/47-440          | 130-430             | -40 to +70             | 12                 | 166                     | 680                          | 75             | 72      | 69      |         |
| AME2-15SAZ   | 90-305/47-440          | 130-430             | -40 to +70             | 15                 | 133                     | 560                          | 78             | 74      | 71      |         |
| AME2-24SAZ   | 90-305/47-440          | 130-430             | -40 to +70             | 24                 | 83                      | 470                          | 81             | 81      | 79      |         |
| AME2-3.3SBAZ | 90-528/47-440          | 130-745             | -40 to +70             | 3.3                | 600                     | 2200                         | 57             | 57      | 56      | 50      |
| AME2-5SBAZ   | 90-528/47-440          | 130-745             | -40 to +70             | 5                  | 400                     | 1100                         | 63             | 63      | 62      | 56      |
| AME2-12SBAZ  | 90-528/47-440          | 130-745             | -40 to +70             | 12                 | 166                     | 680                          | 68             | 68      | 66      | 53      |
| AME2-15SBAZ  | 90-528/47-440          | 130-745             | -40 to +70             | 15                 | 133                     | 560                          | 68             | 67      | 66      | 57      |
| AME2-24SBAZ  | 90-528/47-440          | 130-745             | -40 to +70             | 24                 | 83                      | 470                          | 67             | 67      | 65      | 58      |

#### Input Specifications

| Parameters                       | Conditions                 | Typical | Maximum | Units |
|----------------------------------|----------------------------|---------|---------|-------|
| Current (full load)              | 115 VAC                    |         | 40      | mA    |
|                                  | 230 VAC                    |         | 20      | mA    |
|                                  | 277 VAC                    |         | 20      | mA    |
|                                  | 480VAC                     |         | 15      | mA    |
| Inrush current <2ms (cold start) | 115 VAC                    |         | 10      | A     |
|                                  | 230 VAC                    |         | 15      | A     |
|                                  | 277 VAC                    |         | 20      | A     |
|                                  | 480 VAC                    |         | 30      | A     |
| Leakage current                  |                            |         | 0.15    | mA    |
| External fuse                    | Recommended slow blow type | 1       |         | A     |
| Input Dissipation (No Load)      |                            | ≤0.3    |         | W     |

#### Output Specifications

| Parameters                   | Conditions                                      | Typical | Maximum | Units     |
|------------------------------|-------------------------------------------------|---------|---------|-----------|
| Voltage accuracy*            | Full load                                       | ±5      |         | %         |
| Line regulation              | LL-HL, Full Load                                | ±1.5    |         | %         |
| Load regulation*             | 0-100% load                                     | ±5      |         | %         |
| Transient Recovery Time      |                                                 | 200     |         | μs        |
| Transient Response Deviation | 25% load step                                   | ±2      |         | % of Vout |
| Minimum load                 |                                                 | 0       |         | %         |
| Ripple & Noise*              | 20 MHz Bandwidth, 0.1μF & 220μF E/C in parallel | 200     |         | mV p-p    |

\*Measured at 115/230/277/480 VAC (Typical input) with Full Load

#### Isolation Specifications

| Parameters           | Conditions | Typical | Rated | Units |
|----------------------|------------|---------|-------|-------|
| Tested I/O voltage   | 60 sec     |         | 3000  | VAC   |
| Isolation Resistance |            | >1000   |       | MΩ    |

## General Specifications

| Parameters               | Conditions                                            | Typical                                       | Maximum | Units |
|--------------------------|-------------------------------------------------------|-----------------------------------------------|---------|-------|
| Switching frequency      |                                                       | 100                                           |         | KHz   |
| Over Load protection     | Auto recovery                                         | >125%                                         |         |       |
| Short circuit protection | 90-305VAC input models<br>90-528VAC input models      | Continuous, Auto-recovery<br>Momentary, 3 sec |         |       |
| Operating temperature    | Without derating                                      | -40 to +70                                    |         | °C    |
| Storage temperature      |                                                       | -40 to +85                                    |         | °C    |
| Maximum Case temperature |                                                       |                                               | 100     | °C    |
| Humidity                 | Non condensing                                        | 20 ~ 95                                       |         | % RH  |
| Case material            | Plastic resin + Fiberglass (flammability to UL 94V-0) |                                               |         |       |
| Weight                   |                                                       | 25                                            |         | g     |
| Dimensions (L x W x H)   | 1.40 x 0.92 x 0.76 (35.60 x 23.31 x 19.32mm)          |                                               |         |       |
| MTBF                     | > 400 000 hrs (MIL-HDBK -217F, t=+25°C)               |                                               |         |       |

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, typical input voltages 115/230/277/480 VAC and at rated output load unless otherwise specified.

## Environment Approval

| Parameters | Conditions                                                           |
|------------|----------------------------------------------------------------------|
| Shock      | Wave form: Half sine wave                                            |
|            | Acceleration amplitude: 5gn                                          |
|            | Bump duration: 30 ms                                                 |
|            | Number of bumps: 18 (3 in each direction for every axis)             |
|            | Converter operation before and after test, body mounted (on chassis) |
| Vibrations | Test mode: Sweep sine                                                |
|            | 10-100Hz, speed 0.05Hz/s                                             |
|            | Displacement: 1mm                                                    |
|            | Acceleration: 3g                                                     |
|            | 3 loops 30min one cycle, 3h total, every axis tested                 |
|            | Converter operation before and after test, body mounted (on chassis) |

## Safety Specifications

| Parameters                                       |                                            |
|--------------------------------------------------|--------------------------------------------|
| Agency approvals                                 | cULus, CE, CB, FCC                         |
| Standards                                        | Information technology Equipment           |
|                                                  | IEC/EN/UL 60950-1:2006+A11:2009            |
|                                                  | EMI - Conducted and radiated emission      |
|                                                  | EN55022, class B (* see note)              |
|                                                  | Harmonic Current Emissions                 |
|                                                  | IEC/EN 61000-3-2, Class A                  |
|                                                  | Voltage fluctuations and flicker           |
|                                                  | IEC/EN 61000-3-3, (EN60555-3)              |
|                                                  | 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 (1KV)                       |
|                                                  | IEC 61000-4-5(SAZ: Level 2,SBAS: Level 1)  |
|                                                  | RF, Conducted Disturbance Immunity         |
|                                                  | IEC 61000-4-6                              |
|                                                  | Power frequency Magnetic Field Immunity    |
|                                                  | IEC 61000-4-8                              |
|                                                  | Voltage dips, Short Interruptions Immunity |
|                                                  | IEC 61000-4-11                             |
| FCC part 15 Subpart B, Class B, ANSI C63.4 :2003 |                                            |

\* Note: for 528VAC models to meet the EN55022 class B spec an external 0.33uF X capacitor is needed to be installed between AC L and AC N as close as possible to the input of the power supply itself

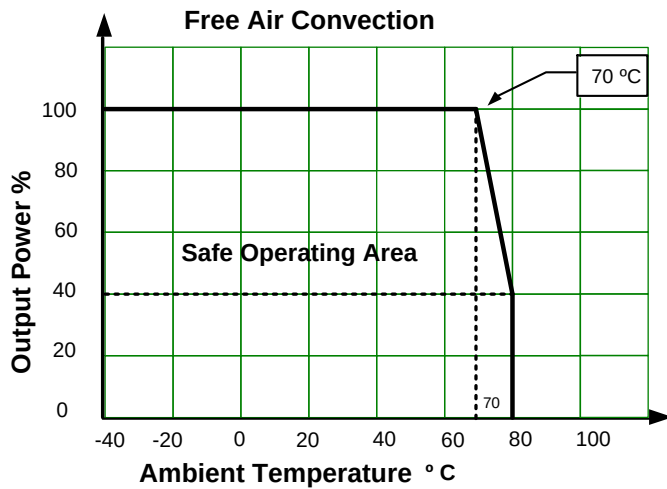
## Pin Out Specifications\*

| Pin | Single               |
|-----|----------------------|
| 1*  | AC Input (N) or (L1) |
| 2*  | AC Input (L) or (L2) |
| 3   | -V Output            |
| 4   | +V Output            |

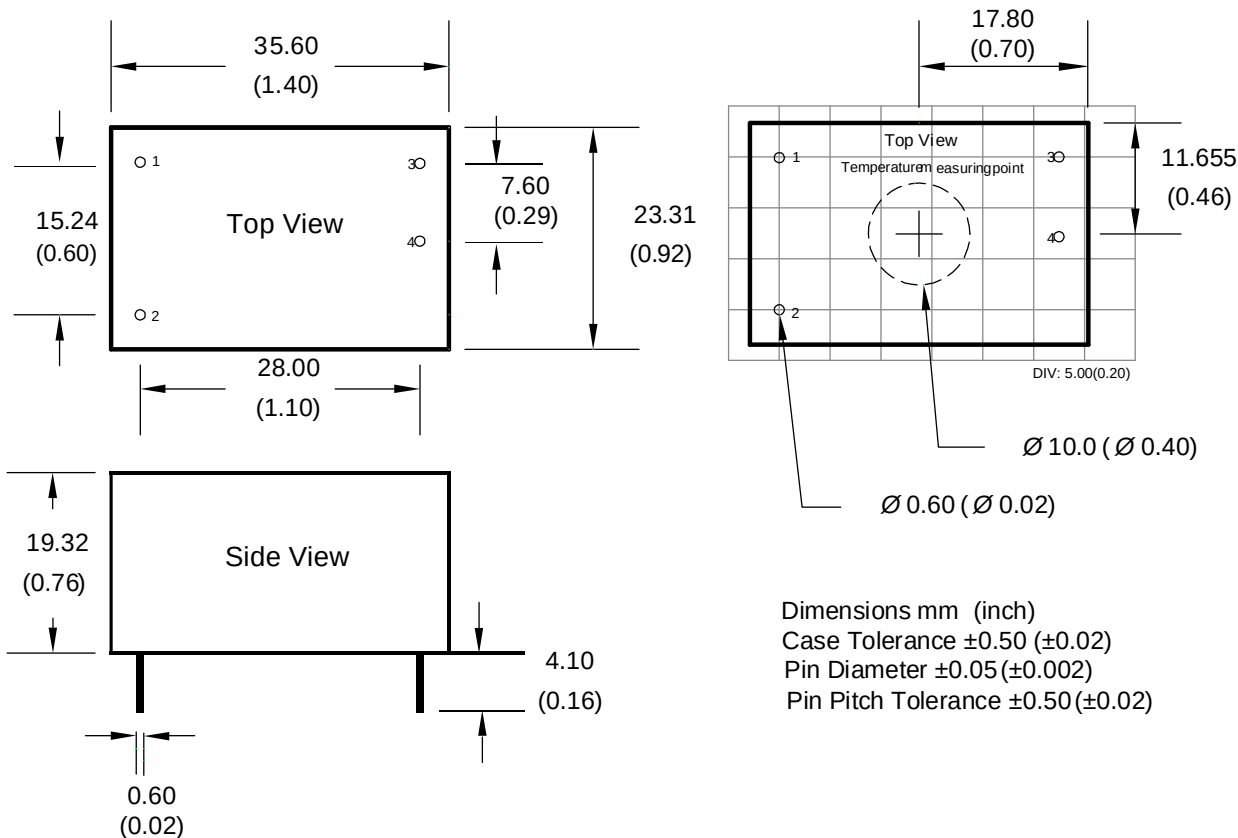
\* Note: Input Pins 1 and 2 can be "N" and "L" respectively when the input voltage is supplied from a single phase.

Input Pins 1 and 2 can be "L1" and "L2" respectively when the input voltage is supplied from 3 phase line to line voltage 208-480Vac (208 Y/ 120V 3-phase, 240 Y/ 120V 3-phase, 400 Y/ 230V 3-phase or 480 Y/ 277V 3-phase).

## Derating



## Dimensions



**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](http://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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at [www.aimtec.com](http://www.aimtec.com).