

## Series AMEC15-MAZ

### 15 Watt | AC-DC / DC-DC Converter

#### FEATURES:



- Connector on Input & Output
- Operating temperature: -40 to +80°C
- Over load, Over Voltage, Short Circuit Protection
- Optional DIN Rail mounting bracket
- Universal input: 90-264VAC, 47-440Hz
- RoHS compliant
- Soft start
- Energy Star compliant
- CE, cULus, CB approvals
- 4000VAC I/O Isolation



#### Models Single output

| Model          | Input Voltage (VAC/Hz) | Input voltage (VDC) | Output Voltage (V) | Output Current max (A) | Maximum Capacitive Load (μF) | Efficiency (%) |         |
|----------------|------------------------|---------------------|--------------------|------------------------|------------------------------|----------------|---------|
|                |                        |                     |                    |                        |                              | 115 VAC        | 230 VAC |
| AMEC15-3.3SMAZ | 90-264/47-440          | 130-370             | 3.3                | 3                      | 4700                         | 74             | 74      |
| AMEC15-5SMAZ   | 90-264/47-440          | 130-370             | 5                  | 3                      | 2200                         | 75             | 76      |
| AMEC15-12SMAZ  | 90-264/47-440          | 130-370             | 12                 | 1.25                   | 1000                         | 81             | 82      |
| AMEC15-15SMAZ  | 90-264/47-440          | 130-370             | 15                 | 1                      | 680                          | 81             | 83      |
| AMEC15-24SMAZ  | 90-264/47-440          | 130-370             | 24                 | 0.63                   | 470                          | 83             | 83      |

#### Models Dual output

| Model         | Input Voltage (VAC/Hz) | Input voltage (VDC) | Output Voltage (V) | Output Current max (A) | Maximum Capacitive Load (μF) | Efficiency (%) |         |
|---------------|------------------------|---------------------|--------------------|------------------------|------------------------------|----------------|---------|
|               |                        |                     |                    |                        |                              | 115 VAC        | 230 VAC |
| AMEC15-5DMAZ  | 90-264/47-440          | 130-370             | ±5                 | ±1.5                   | ±1000                        | 78             | 79      |
| AMEC15-12DMAZ | 90-264/47-440          | 130-370             | ±12                | ±0.63                  | ±470                         | 81             | 82      |
| AMEC15-15DMAZ | 90-264/47-440          | 130-370             | ±15                | ±0.5                   | ±330                         | 82             | 83      |

#### Input Specifications

| Parameters               | Conditions               | Typical | Maximum | Units |
|--------------------------|--------------------------|---------|---------|-------|
| Current (Full Load)      | 115VAC                   |         | 350     | mA    |
|                          | 230VAC                   |         | 180     | mA    |
| Inrush current <2ms      | 115 VAC                  |         | 20      | A     |
|                          | 230 VAC                  |         | 30      | A     |
| Leakage current          | 115 VAC                  |         | 0.1     | mA    |
|                          | 264 VAC                  |         | 0.2     | mA    |
| External Fuse            | recommend slow blow type | 2       |         | A     |
| Input Dissipation        | 115 / 230 VAC            | ≤0.2    |         | W     |
| Under Voltage Protection |                          | 85      |         | VAC   |

#### Output Specifications

| Parameters                        | Conditions                                                      | Typical | Maximum | Units     |
|-----------------------------------|-----------------------------------------------------------------|---------|---------|-----------|
| Voltage accuracy                  |                                                                 | ±2      |         | %         |
| Line regulation                   | LL-HL                                                           | ±1      |         | %         |
| Load regulation (single output)   | 0-100%                                                          | ±1      |         | %         |
| Cross regulation (dual output) ** | 25% load - 1 <sup>st</sup> out, 100% load – 2 <sup>nd</sup> out | ±5      |         | %         |
| Transient Recovery Time           |                                                                 | 200     |         | μs        |
| Transient Recovery Deviation      | 25% load step                                                   | ±2      |         | % of Vout |
| Ripple & Noise*                   | 3.3/5V models                                                   | 75      |         | mVp-p     |
|                                   | 12/15V models                                                   | 100     |         |           |
|                                   | 24V models                                                      | 150     |         |           |
| Hold-up time                      | min                                                             | 20      |         | ms        |

\*Ripple and Noise are measured at 20MHz bandwidth by using a 0.1μF (M/C) and 47μF (E/C) parallel capacitor.

\*\* The load of each output should be limited to the maximum rated current of each output.

### Isolation Specifications

| Parameters           | Conditions | Typical | Rated | Units |
|----------------------|------------|---------|-------|-------|
| Tested I/O voltage   | 60 sec     |         | 4000  | VAC   |
| Isolation resistance |            | >1000   |       | MΩ    |

### General Specifications

| Parameters               | Conditions                                      | Typical     | Maximum | Units  |
|--------------------------|-------------------------------------------------|-------------|---------|--------|
| Switching frequency      |                                                 | 132         |         | KHz    |
| Protection Class         |                                                 | Class II    |         |        |
| Startup time             |                                                 | 350         |         | mS     |
| Over load protection     | Foldback                                        | 130         |         | %      |
| Over voltage protection  | Zener diode clamp                               |             |         |        |
| Short Circuit protection | Auto recovery                                   |             |         |        |
| Case Material            | Metal                                           |             |         |        |
| Operating temperature    | With derating over 55 °C (10CFM)                | -40 to +80  |         | °C     |
| Storage temperature      |                                                 | -50 to +100 |         | °C     |
| Max Case temperature     |                                                 |             | 100     | °C     |
| Temperature coefficient  |                                                 | ±0.02       |         | % / °C |
| Cooling                  | Free air convection                             |             |         |        |
| Humidity                 |                                                 |             | 95      | % RH   |
| Weight                   |                                                 | 100         |         | g      |
| Dimensions (L x W x H)   | 3.62 x 2.56 x 0.94 inches 92.0 x 65.0 x 24.0 mm |             |         |        |
| MTBF                     | > 400 000hrs (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.

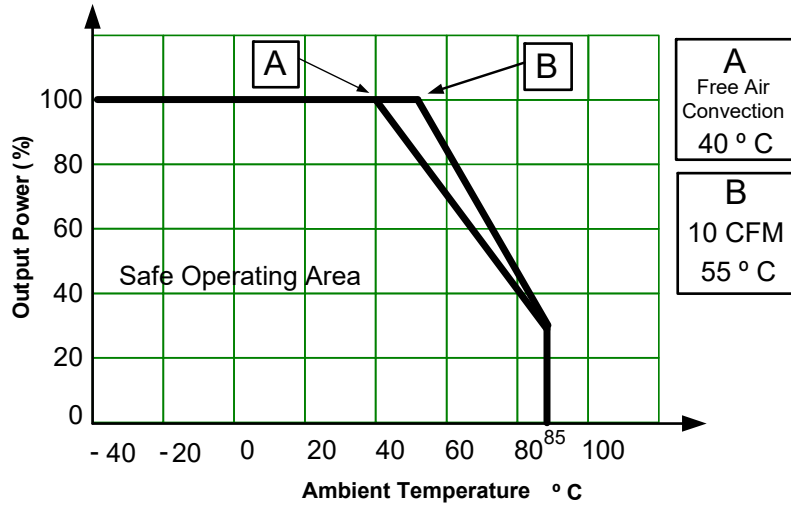
### Environment Approval

| 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 & EMC Specifications

| Parameters       |                                            |                                                      |
|------------------|--------------------------------------------|------------------------------------------------------|
| Agency approvals | cULus, CE, CB                              |                                                      |
| Standards        | Medical Electrical Equipment               | IEC/EN/UL 60601-1, 2 x MOOP, CSA-C22.2 No. 601.1-M90 |
|                  | Information technology Equipment           | EN 60950-1:2006+A11:2009                             |
|                  | Harmonic Current Emissions                 | IEC/EN 61000-3-2, Class A                            |
|                  | EMI - Conducted and radiated emission      | EN55011, class B                                     |
|                  | Voltage fluctuations and flicker           | IEC/EN 61000-3-3, (EN60555-3)                        |
|                  | Electrostatic Discharge Immunity           | IEC 61000-4-2 Level 3                                |
|                  | RF, Electromagnetic Field Immunity         | IEC 61000-4-3 Level 2                                |
|                  | Electrical Fast Transient/Burst Immunity   | IEC 61000-4-4 Level 3                                |
|                  | Surge Immunity                             | IEC 61000-4-5 Level 3                                |
|                  | RF, Conducted Disturbance Immunity         | IEC 61000-4-6 Level 2                                |
|                  | Power frequency Magnetic Field Immunity    | IEC 61000-4-8 Level 2                                |
|                  | Voltage dips, Short Interruptions Immunity | IEC 61000-4-11                                       |

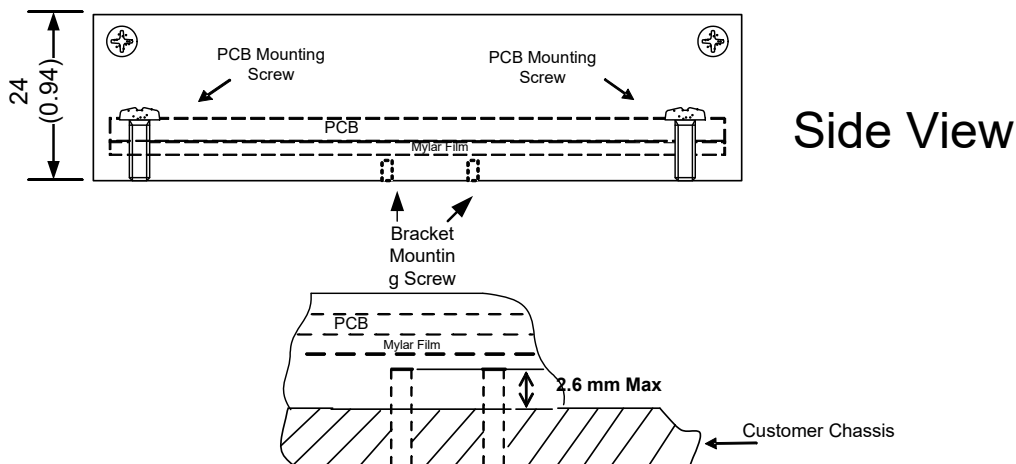
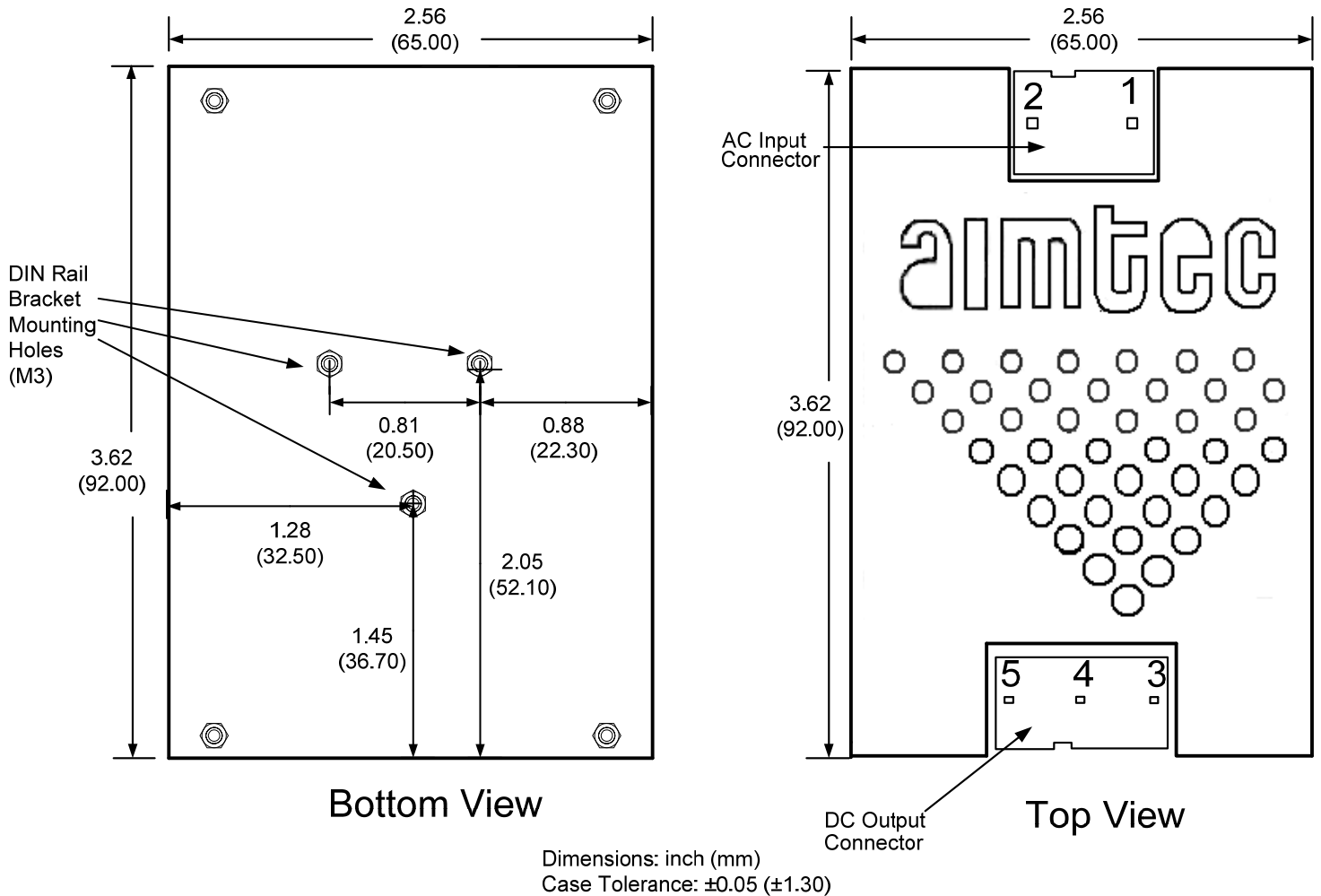
## Derating



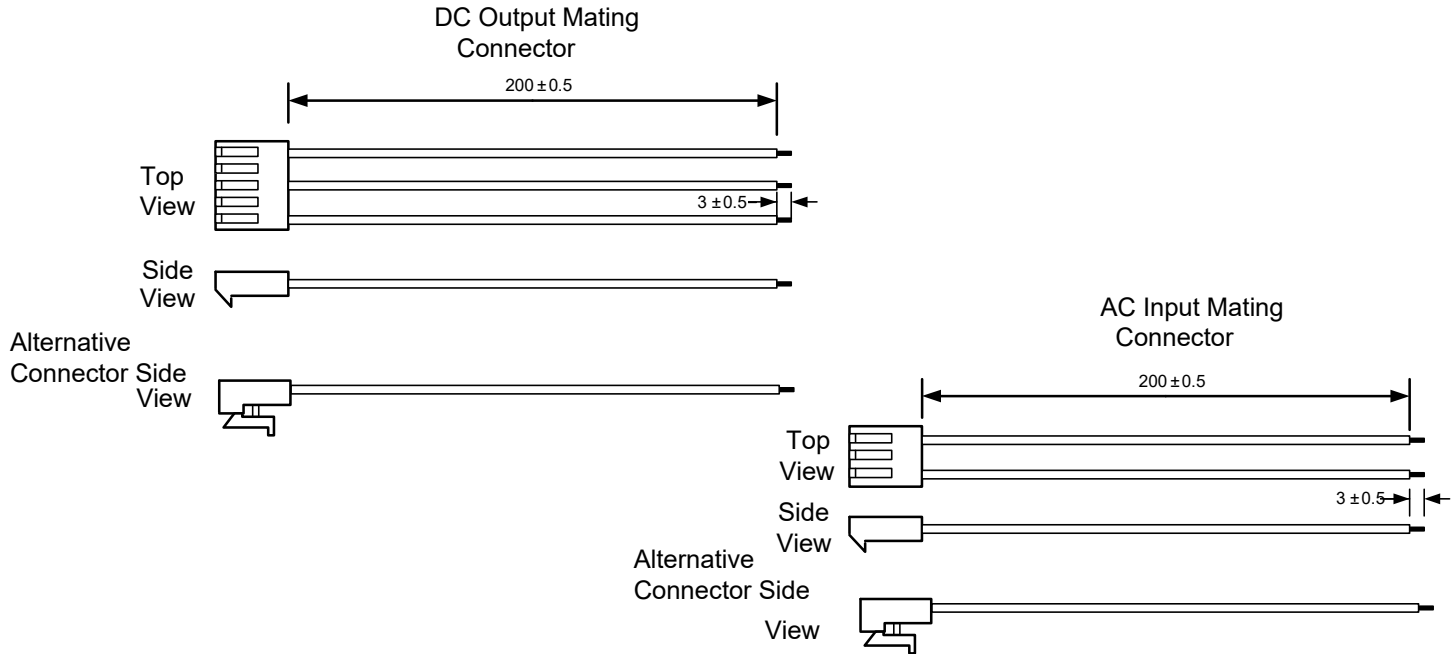
## Pin Out Specifications

| Pin | Single        | Dual         |
|-----|---------------|--------------|
| 1   | AC Input (N)  | AC Input (N) |
| 2   | AC Input (L)  | AC Input (L) |
| 3   | -V Output     | -V Output    |
| 4   | No Connection | Common       |
| 5   | +V Output     | +V Output    |

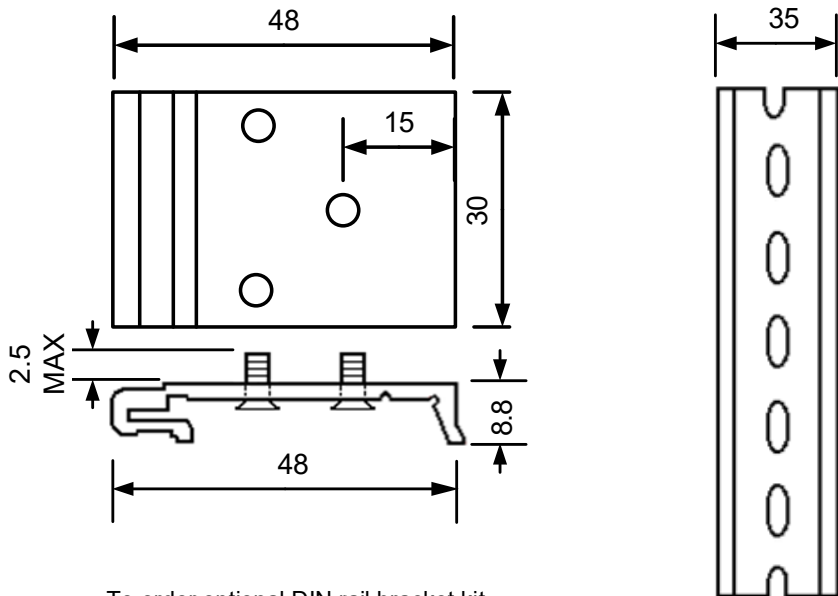
## Dimensions



## Mating Connectors with Wire (included)



## Optional DIN Rail Bracket



To order optional DIN rail bracket kit specify part number DRB01 when placing order

Optional DIN Rail Bracket compatible with DIN Rail TS35/7.5

**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).