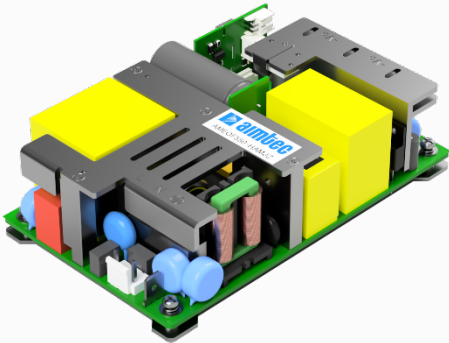


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AMEOF550-HAMJZ



Open Frame/ Enclose

AMEOF550-HAMJZ series is one of Aimtec's compact size (3"x5"x1.6") 550W AC/DC converter with active PFC and suitable for medical system equipment. It features universal AC input and at the same time accepts DC input voltage, cost-effective, high efficiency, high reliability and double or reinforced isolation.

These converters offer excellent EMC and safety performance, which with UL60601-1, EN/UL62368-1 approval and meet IEC62368-1, GB4943, IEC/EN60335, IEC/EN61558, IEC/EN60601-1 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home, medical, etc.

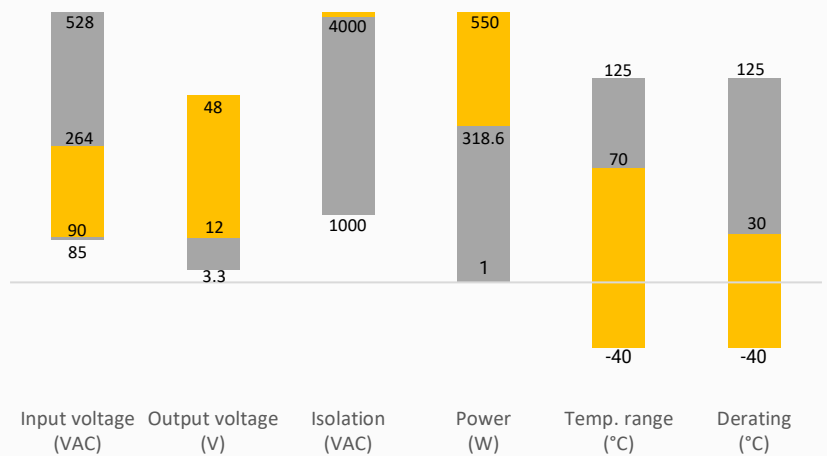
Features

- Universal Input: 90 - 264VAC/127 - 370VDC
- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Active PFC
- Output short circuit, over-current, over-voltage, over temperature protection
- Low no-load power consumption of 0.5W
- Suitable for Type BF application
- Certified : ES60601-1, EN/UL62368-1
- Designed to meet IEC62368-1, GB4943, IEC/EN60335, IEC/EN61558, IEC/EN60601-1 2xMOPP



Summary

AMEOF550-HAMJZ



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Medical

Models & Specifications

| Single Output | | | | | | | | | |
|-------------------|------------------------|---------------------|--------------------------|------------------------|--------------------|-------------------------------------|---------------------|------------------------------|-------------------------------|
| Model | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Cooling method / package | Max Output wattage (W) | Output Voltage (V) | Output Voltage Adjustable Range (V) | Output Current (A)* | Maximum capacitive load (μF) | Efficiency @230VAC Typ. (%)** |
| AMEOF550-12SHAMJZ | 90-264/47-63 | 127-373 | Free air / enclosed | 309.6 | 12 | 11.4 - 12.6 | 25.8 | 6000 | 91 |
| | | | Free air / open frame | 320.4 | | | 26.7 | | |
| | | | 25CFM or -FB option | 499.2 | | | 41.6 | | |
| AMEOF550-15SHAMJZ | 90-264/47-63 | 127-373 | Free air / enclosed | 310.5 | 15 | 14.25 - 15.75 | 20.7 | 6000 | 92 |
| | | | Free air / open frame | 319.5 | | | 21.3 | | |
| | | | 25CFM or -FB option | 499.5 | | | 33.3 | | |
| AMEOF550-24SHAMJZ | 90-264/47-63 | 127-373 | Free air / enclosed | 309.6 | 24 | 22.8 - 25.2 | 12.9 | 6000 | 93 |
| | | | Free air / open frame | 321.6 | | | 13.4 | | |
| | | | 25CFM or -FB option | 549.6 | | | 22.9 | | |
| AMEOF550-27SHAMJZ | 90-264/47-63 | 127-373 | Free air / enclosed | 310.5 | 27 | 25.65 - 28.35 | 11.5 | 4000 | 93.5 |
| | | | Free air / open frame | 321.3 | | | 11.9 | | |
| | | | 25CFM or -FB option | 550.8 | | | 20.4 | | |
| AMEOF550-36SHAMJZ | 90-264/47-63 | 127-373 | Free air / enclosed | 309.6 | 36 | 34.2 - 37.8 | 8.6 | 3000 | 94 |
| | | | Free air / open frame | 320.4 | | | 8.9 | | |
| | | | 25CFM or -FB option | 550.8 | | | 15.3 | | |
| AMEOF550-48SHAMJZ | 90-264/47-63 | 127-373 | Free air / enclosed | 312 | 48 | 45.6 - 50.4 | 6.5 | 2000 | 94 |
| | | | Free air / open frame | 321.6 | | | 6.7 | | |
| | | | 25CFM or -FB option | 550 | | | 11.46 | | |

Add suffix -F for enclosed package. (ex. AMEOF550-12SHAMJZ-F is enclosed package version)
Add suffix -FB for enclosed package with built-in fan. (ex. AMEOF550-12SHAMJZ-FB is enclosed package with built-in fan version)
* The output current must not exceed the rated value when the output voltage is trimmed down.
** Tested under forced air convection. Fan power consumption is not included.

| Input Specifications | | | | |
|----------------------|-------------------------|---------|---------|-------|
| Parameters | Conditions | Typical | Maximum | Units |
| Input current | 90/115VAC | | 6.5 | A |
| | 230VAC | | 3 | A |
| Inrush current | 115VAC, cold start | 50 | | A |
| | 230VAC, cold start | 80 | | A |
| Leakage | 264VAC, contact leakage | | 0.1 | mA |
| | 264VAC, earth leakage | | 0.5 | mA |
| Power factor | 115VAC, 100% load | ≥0.98 | | |
| | 230VAC, 100% load | ≥0.95 | | |
| ON/OFF control | On | ≥2 | 5 | V |
| | Off | ≥0 | 0.5 | V |

| Output Specifications | | | | |
|-----------------------|-----------------|---------|---------|-------|
| Parameters | Conditions | Typical | Maximum | Units |
| Voltage accuracy | 12, 15, 24, 27V | ±2 | | % |
| | 36, 48V | ±1 | | % |
| Line regulation | Full load | ±0.5 | | % |

| | | | | |
|---------------------|-------------------------------------|-----|-----|--------|
| Load regulation | 0-100% load | ±1 | | % |
| Ripple & Noise* | | | 200 | mV p-p |
| Hold up time | 115/230VAC | ≥10 | | ms |
| Power good signal** | High | ≥2 | 6 | V |
| | Low | ≥0 | 0.6 | V |
| Standby output | Output voltage | 5 | | V |
| | Output current, free air convection | | 0.6 | A |
| | Output current, 25CFM | | 1 | A |
| | Voltage accuracy | ±2 | | % |
| | Ripple and noise | | 120 | mV p-p |

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

** TTL high signal will delay 10-500ms after power on the converter. TTL low signal will be sent at least 1ms before the output voltage drops to 90% of the rated output.

Isolation Specification

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------------|-----------------------|---------|---------|-------|
| Tested I/O voltage | 60 sec, leakage ≤ 5mA | ≥4000 | | VAC |
| Tested I/PE voltage | 60 sec, leakage ≤ 5mA | ≥2000 | | VAC |
| Tested O/PE voltage | 60 sec, leakage ≤ 5mA | ≥1500 | | VAC |
| Resistance I/O, I/PE, O/PE * | 500VDC | >100 | | MΩ |
| MOP I/O | | | 2xMOPP | |
| MOP I/PE | | | 1xMOPP | |
| MOP O/PE | | | 1xMOPP | |

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

General Specifications

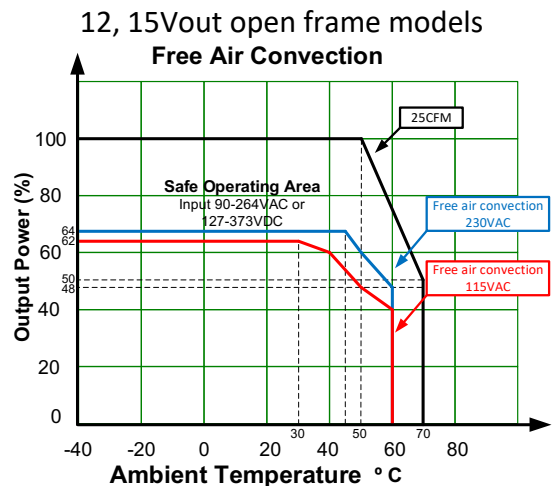
| Parameters | Conditions | Typical | Maximum | Units |
|-----------------------------|---|--|----------|-----------|
| Protection class | Class I | | | |
| Over current protection | Auto recovery, hiccup | ≥ 105 | | % of Iout |
| Over voltage protection | 12Vout, shut down, disconnect the input for recovery | | 15.6 | VDC |
| | 15Vout, shut down, disconnect the input for recovery | | 19.5 | VDC |
| | 24Vout, shut down, disconnect the input for recovery | | 31.2 | VDC |
| | 27Vout, shut down, disconnect the input for recovery | | 35.1 | VDC |
| | 36Vout, shut down, disconnect the input for recovery | | 46.8 | VDC |
| | 48Vout, shut down, disconnect the input for recovery | | 60 | VDC |
| Short circuit protection | Hiccup, Continuous, Auto recovery time < 5S | | | |
| Over temperature protection | Auto recovery after the temperature drops below the threshold | | | |
| Fan power | | | 12V/0.5A | |
| No-load power consumption | Ambient temperature 25°C, 230VAC, OFF state | | 0.5 | W |
| Operating temperature | See derating graph | -40 to +70 | | °C |
| Storage temperature | | -40 to +85 | | °C |
| Temperature coefficient | | ±0.03 | | %/°C |
| Cooling | Free air convection, forced air convection 25CFM | | | |
| Humidity | Non-condensing, storage | >10 | 95 | % RH |
| | Non-condensing, operating | >20 | 90 | % RH |
| Case material | Enclosed package | Metal (5052 Aluminum, SUS304) | | |
| Weight | Open frame, 12, 15V models | 490 | | g |
| | Open frame, other models | 425 | | g |
| | Enclosed, -F option | 605 | | g |
| | Enclosed, -FB option | 645 | | g |
| Dimensions (L x W x H) | Open frame, 12, 15V models | 5.00 x 3.00 x 1.59 inches (127.0 x 76.2 x 40.5 mm) | | |

| | | |
|---|---|--|
| | Open frame, other models | 5.00 x 3.00 x 1.52 inches (127.0 x 76.2 x 38.5 mm) |
| | Enclosed, -F option | 5.12 x 3.39 x 1.70 inches (130.0 x 86.0 x 43.0 mm) |
| | Enclosed, -FB option | 6.30 x 3.39 x 1.70 inches (160.0 x 86.0 x 43.0 mm) |
| MTBF | > 200 000 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. | | |

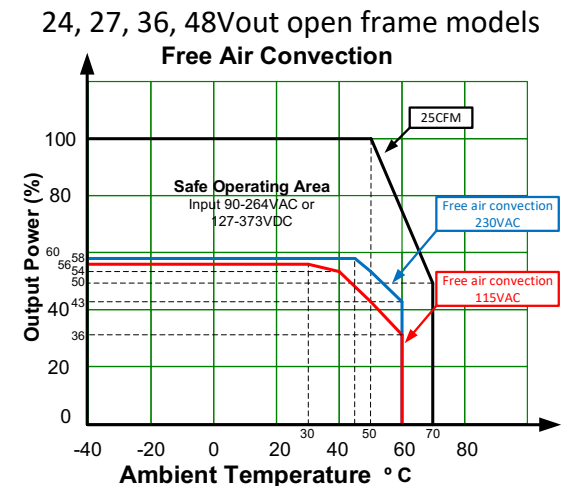
Safety Specifications

| | | |
|---|---|--|
| Parameters | | |
| Agency approvals | cULus: UL62368-1; UL60601-1(ANSI/AAMI ES60601-1 V3.1) CE: EN62368-1 | |
| Standards | Design to meet IEC62368-1, IEC/EN60335, GB4943, IEC/EN61558(open frame models), IEC/EN60601-1 V3.1, CAN/CSA-C22.2 No.60601-1:14 Ed3 2xMOPP(open frame models), EN60601-1-2 Ed4(open frame models), EAC TP TC 004(enclosed models) | |
| | EMC - Conducted and radiated emission * | CISPR32 / EN55032, conducted class B CISPR11 / EN55011, conducted class B CISPR32 / EN55032, radiated class B with protective earth connection CISPR32 / EN55032, radiated class A without protective earth connection CISPR32 / EN55032, radiated class B |
| | EMC - Harmonic current emissions* | IEC 61000-3-2 class D for open frame models IEC 61000-3-2 class A for enclosed models |
| | EMC - Voltage fluctuations and flicker * | IEC 61000-3-3 |
| | Electrostatic Discharge Immunity * | IEC 61000-4-2 Contact ±8KV, Air ±15KV, 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 |
| | 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 |
| * The power supply is considered as a component and will be installed in an end-product. All the EMC tests are performed with the power supply mounted on a 1mm thick 360mm x 360mm metal plate. The EMC compliance of the end-product must be reconfirmed. | | |

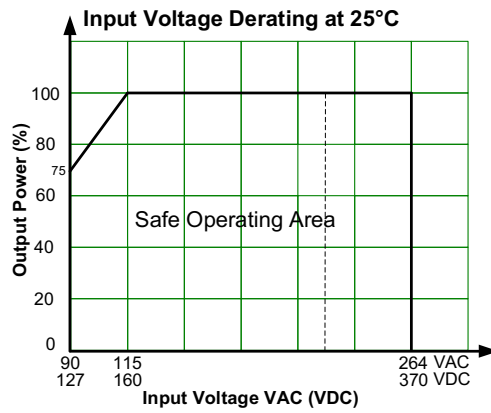
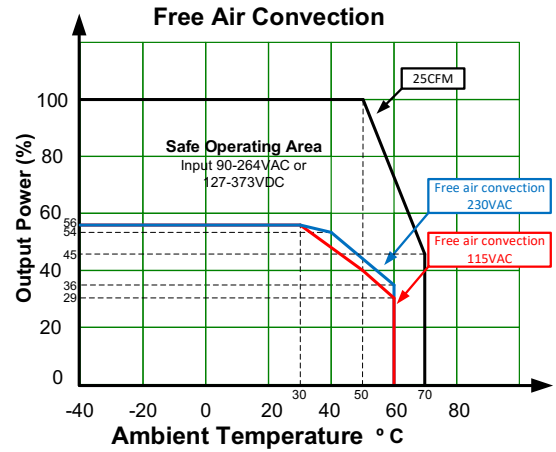
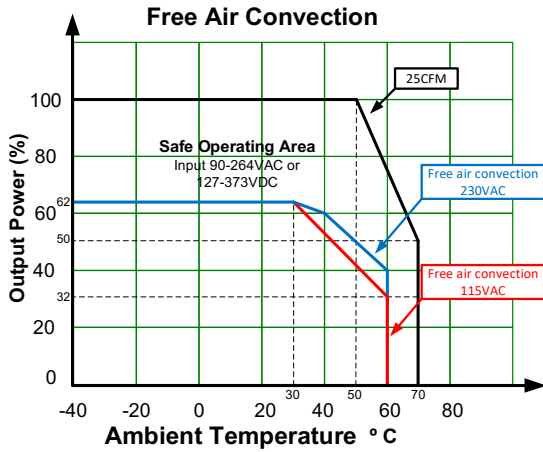
Derating



12, 15Vout enclosed models

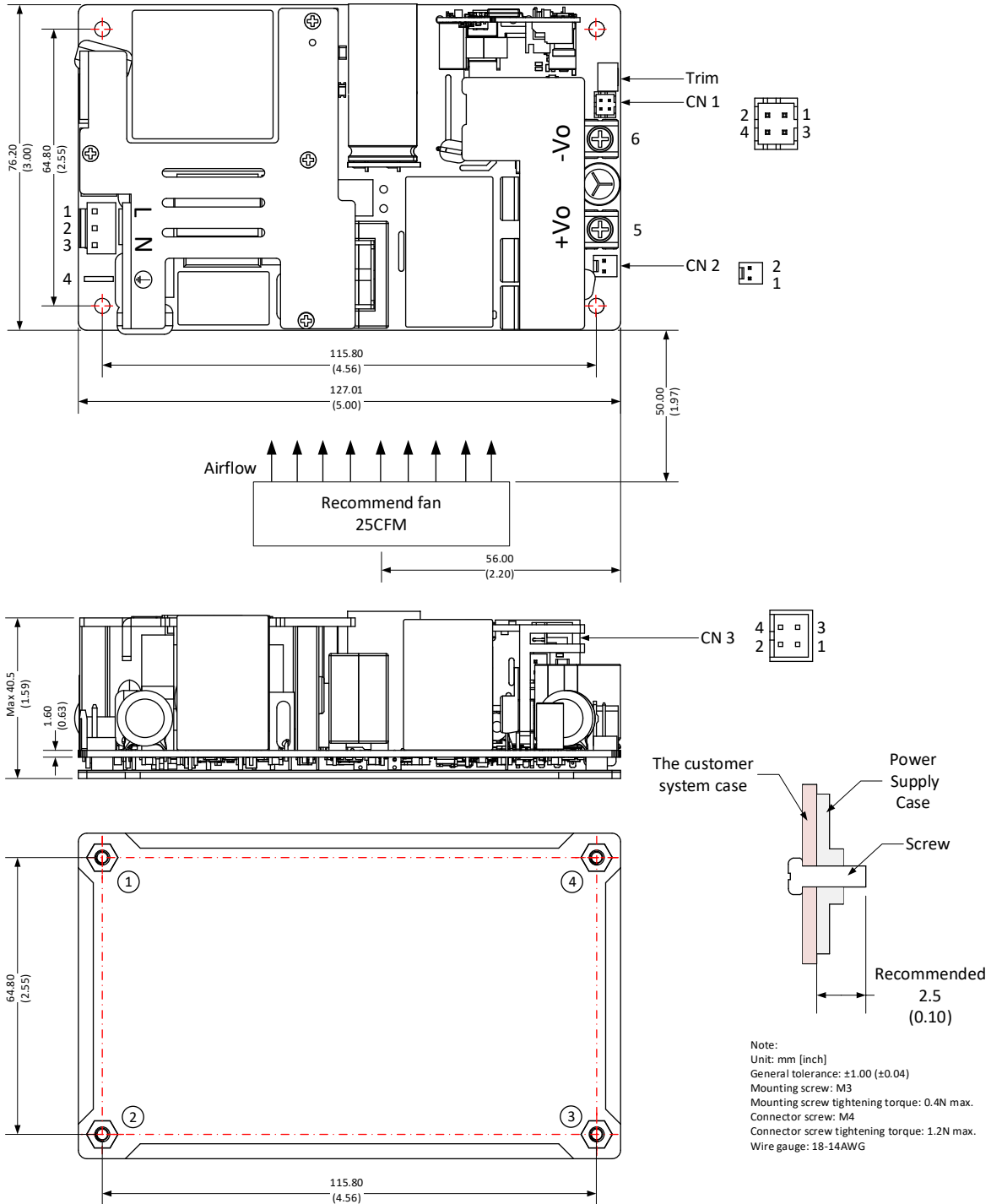


24, 27, 36, 48Vout enclosed models



Dimensions

Open frame model



Note:

1. It is needed to have $\geq 10\text{mm}$ distance between the product and external components for safety.
2. Connect mounting point 1, 2 and 4 to protective earth for Class I system.
3. Disconnect the power before servicing.

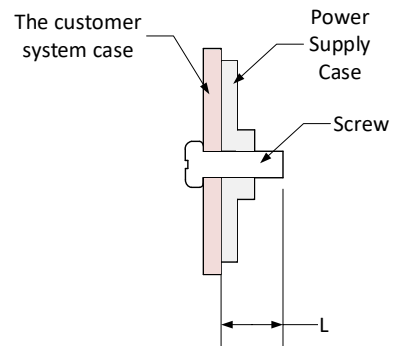
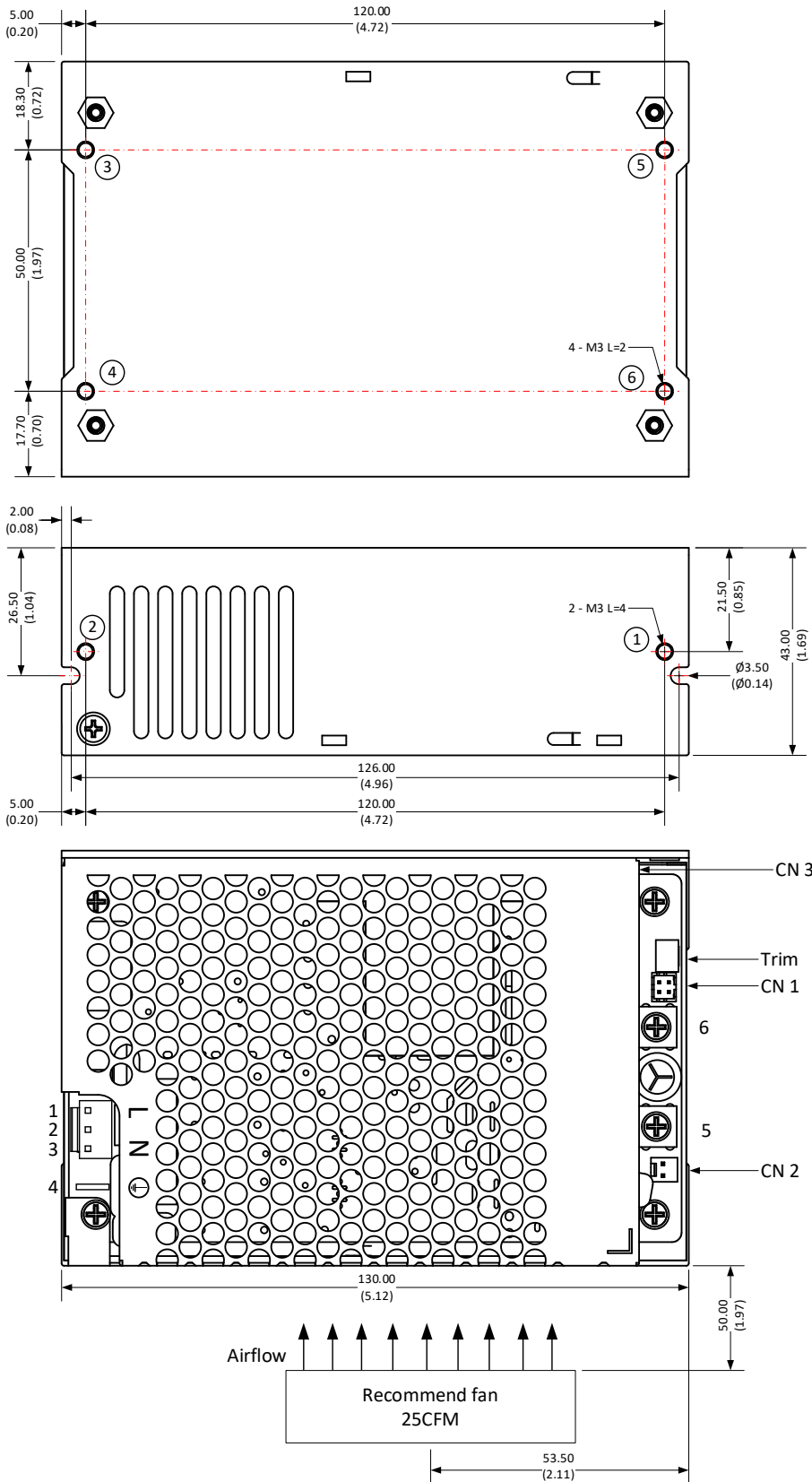
| Pin Output Specifications | | | |
|---------------------------|---------------|--------------------------------------|--------------------------|
| Pin | Function | Connector | Recommended connector |
| 1 | AC Input (L) | JST SVH-21T-P1.1 or equivalent | JST VHR or equivalent |
| 2 | NC | | |
| 3 | AC Input (N) | | |
| 4 | Earth \perp | | - |
| 5 | +V Output | | |
| 6 | -V Output | | |

| CN1 Pin Output Specifications | | | |
|-------------------------------|-------------------|--------------------------|--------------------------|
| Pin | Function | Connector | Recommended connector |
| 1 | Sense - | JST PHD or equivalent | JST PHD or equivalent |
| 2 | Sense + | | |
| 3 | GND | | |
| 4 | Power good signal | | |

| CN2 Pin Output Specifications | | | |
|-------------------------------|--------------|---------------------------|---------------------------|
| Pin | Function | Connector | Recommended connector |
| 1 | + Fan Output | TKP 8811 or equivalent | TKP 2502 or equivalent |
| 2 | - Fan Output | | |

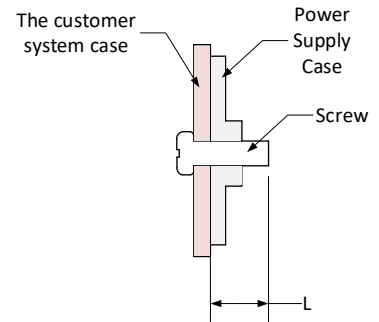
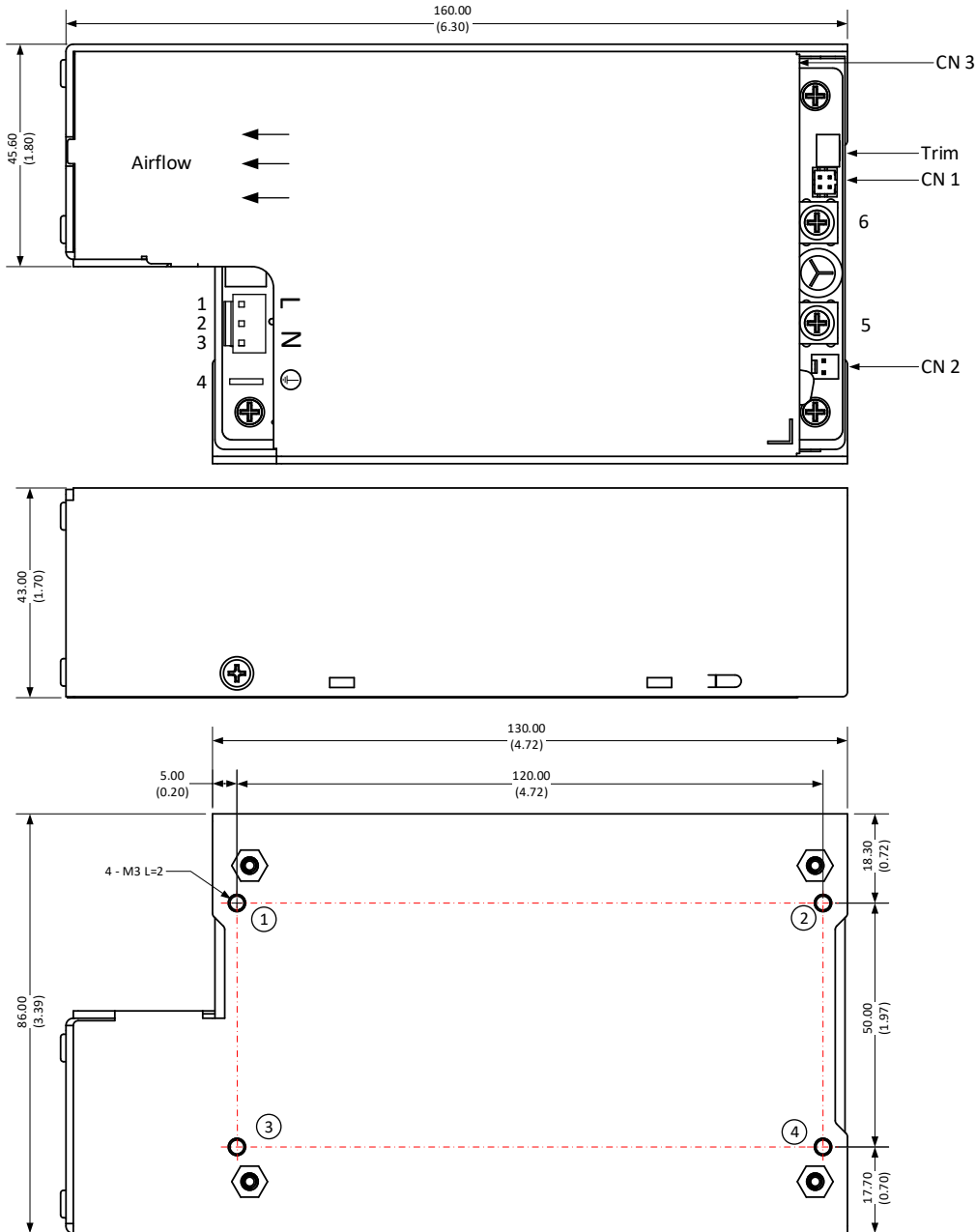
| CN3 Pin Output Specifications | | | |
|-------------------------------|----------|--------------------------|--------------------------|
| Pin | Function | Connector | Recommended connector |
| 1 | 5V | JST PHD or equivalent | JST PHD or equivalent |
| 2 | GND | | |
| 3 | On/off | | |
| 4 | GND | | |

Enclosed -F model



Note:
Unit: mm [inch]
General tolerance: ± 1.00 (± 0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.
Connector screw: M4
Connector screw tightening torque: 1.2N max.
Case must be connected to PE

Enclosed with built-in fan -FB model



Note:
Unit: mm [inch]
General tolerance: ± 1.00 (± 0.04)
Mounting screw: M3
Mounting screw tightening torque: 0.4N max.
Connector screw: M4
Connector screw tightening torque: 1.2N max.
Case must be connected to PE

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 than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.

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