

AC-DC Converters

**POWER
SOLVE**

www.powersolve.co.uk

AHP 200 Series

Up to 212 Watts Output

Features

- 3.00" x 5.00" x 1.34"
- High Power Density - 10.6 W/in³
- Up to 90% Efficiency
- 5 V Standby & 12 V Fan Outputs
- Active Current Share
- Remote On/Off
- Power Good Signal
- 48 VDC Input Versions Available (DAHP200 Series)



Electrical Specification

INPUT

Input Voltage	90-264 VAC
Input Frequency	47-63 Hz
Input Current	2.2 A max at 115 VAC, 1.1 A max at 230 VAC
Inrush Current	60 A max at 230 VAC, cold start at +25 °C
Power Factor	>0.9 typical
Earth Leakage Current	1.1 mA max 264 VAC/50 Hz, 500 µA typical at 230 VAC/50 Hz, 290 µA typical at 115 VAC/60 Hz

OUTPUT

Output Voltage	See table
Output Voltage Trim	No user adjustment available
Initial Set Accuracy	V1: ±1%, V2: ±5%, V3: ±3%
Minimum Load	No minimum load required
Start Up Delay	<3 s maximum
Start Up Rise Time	20 ms maximum
Hold Up Time	16 ms minimum
Drift	<±0.2% after 20 min warm up
Line Regulation	V1: ±0.5%, V2: ±2%, V3: ±0.5%
Load Regulation	V1: ±1% 0-100% load, V2: ±1% 10-100% load, V3: ±1% 0-100% load
Cross Regulation	V2: ±10% 10-100% load change on V1
Over/Undershoot	<2% max at turn on/off for 12 V models, <5% for 24 V & 48 V models
Transient Response	<4% max deviation for a 25-75-25% load step. Output V1 returns to within 1% in 500 µs
Ripple & Noise	V1 & V3: 1%, V2: 2% pk-pk, 20 MHz BW
Overvoltage Protection	115-140% Vnom, recycle input to reset (output 1 only)
Overtemperature	Primary & secondary protection with Protection auto recovery
Overload Protection	110-140%, auto recovery output 1
Short Circuit Protection	Trip and restart (Hiccup mode)
Temperature Coefficient	0.05%/°C
Remote On/Off	Uncommitted isolated opto-coupler diode, powered diode inhibits the supply
Current Share	Up to 3 supplies to share within 10%, derate total output to 90%

GENERAL

Efficiency	88% typical
Isolation	3000 VAC Input to Output, 1500 VAC Input to Ground, 500 VDC Output to Ground
Switching Frequency	80 kHz typical for PFC, 100 kHz typical for main converter
Power Density	10.6 W/in ³
Signals	Combined PF & DC OK - Open collector referenced to output 0 V, transistor normally off when AC & output good. PF provides ≥5 ms warning of loss of output from AC failure. DC OK provides warning of DC output failure.
MTBF	400 kHrs per MIL-HDBK-217F typical

ENVIRONMENTAL

Operating Temperature	-10 °C to +70 °C, derate linearly from +50 °C at 2.5%/°C to 50% at +70 °C
Cooling	12 CFM airflow required (see thermal considerations)
Operating Humidity	5-95% RH, non-condensing
Storage Temperature	-20 °C to +85 °C
Operating Altitude	3000 m
Shock	30 g pk, half sine 6 axes
Vibration	2 g, 5 Hz to 500 Hz, 3 axes

EMC & SAFETY

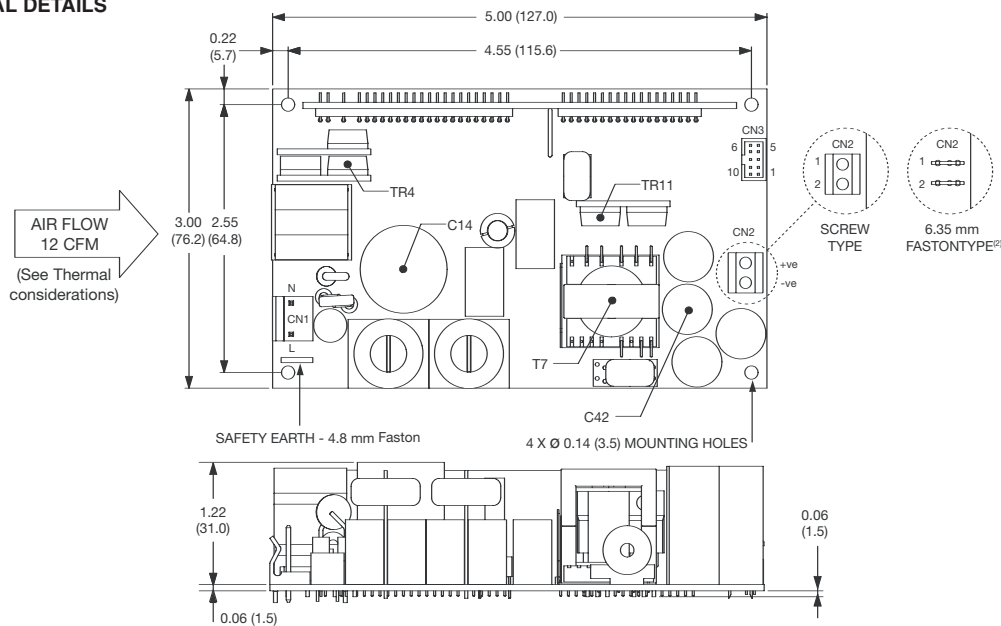
Emissions	EN55022, level B conducted, EN55022, level A radiated
Harmonic Currents	EN61000-3-2, class A
Voltage Flicker	EN61000-3-3
EFT/Burst	EN61000-4-4, level 3 Perf Criteria A
Surge	EN61000-4-5, level 3 Perf Criteria A
Conducted Immunity	EN61000-4-6, 10 Vrms, Perf Criteria A
Dips & Interruptions	EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B
Safety Approvals	CB report IEC60950-1:2001, CSA 22.2 No. 60950-1-03, TUV EN60950-1/A11:2004, CE Mark (LVD), CCC pending, contact sales

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MODELS AND RATINGS

MODEL NUMBER	MAX OUTPUT POWER (12 CFM AIR FLOW)	OUTPUT VOLTAGE V1	OUTPUT CURRENT (12 CFM AIRFLOW)	FAN OUTPUT V2	STANDBY SUPPLY V3
AHP200-12	212 W	12.0 VDC	16.7 A	12.0 V/1.0 A	5.0 V/0.1 A
AHP200-24	212 W	24.0 VDC	8.3 A	12.0 V/1.0 A	5.0 V/0.1 A
AHP200-48	205 W	48.0 VDC	4.0 A	12.0 V/1.0 A	5.0 V/0.1 A

MECHANICAL DETAILS



Notes:

- All dimensions in inches (mm).
- Units supplied with screw terminal (CN2) as standard. For faston type, add suffix '-F' to the part number.
- All 4 mounting positions should be connected to safety earth.
- The air flow needs to be directed through the power supply within the end application.

Pin Connections - CN2

Pin 1	+V
Pin 2	V1 Return

Pin Connections - CN3

1	+V2
2	V2 Return
3	V2 Return
4	ROF
5	ROF Return
6	Power Fail/DC OK
7	Current Share
8	+V3
9	-V3
10	+V2

Mating Connectors:

CN1: Molex housing 09-50-3031 and crimp 2878.
CN3: Molex housing 51110-1050 and crimp 50394-8100.

THERMAL CONSIDERATIONS

Mating Connectors:

In order to ensure safe operation of the PSU in the end-use equipment, the temperature of the components listed in the table below must not be exceeded. See drawing above for component locations. The temperature should be monitored using K type thermocouples placed on the hottest part of the component (out of any direct air flow).

Temperature Measurements (Ambient 50 °C)

Component	Max Continuous Temperature °C
TR4 case	110 °C
C14	105 °C
C42	105 °C
TR11 case	110 °C
T7 coil	120 °C