

100 Watt - AGPS Series, DO-160 Airborne Grade Power Supply Product Specification

Product Description

This product is a 100 watt, single output, DO-160, airborne grade, power supply designed for electronics systems operating in avionics environments. This power supply includes an active PFC input section and an EMI filtering stage to meet power quality requirements for Boeing and Airbus aircraft operations.

Product Features

- Designed to Meet RTCA/DO-160 Power Requirements
- Operating Temperature Range: -40° to +85°C
- Baseplate Mounting, Conduction Cooled

AC Input

- Voltage Input Range: 90-134Vac (115Vac nominal)
- Frequency Range: 47-440Hz (Optional 360-800Hz)
- Phase: Single Phase, 2 wire plus ground
- Typical Input Current: 1.1A at 115Vac input, full load
- Power Factor Correction: 0.95 min @ 115Vac, full load
- Input Power Compliance: Designed to meet RTCA/DO-160F, Section 16
- Voltage Spike Immunity: Designed to meet RTCA/DO-160F, Section 17



Output Selection Guide

Model #:	Voltage	Max Current	Regulation	Ripple
AGPS100-1P-12	12Vdc	8.3 Amps	±3%	120mV pk-pk
AGPS100-1P-15	15Vdc	6.7 Amps	±3%	150mV pk-pk
AGPS100-1P-24	24Vdc	4.1 Amps	±3%	240mV pk-pk
AGPS100-1P-28	28Vdc	3.6 Amps	±3%	240mV pk-pk
AGPS100-1P-36	36Vdc	2.8 Amps	±3%	240mV pk-pk
AGPS100-1P-48	48Vdc	2.1 Amps	±3%	240mV pk-pk

Note: Alternate output voltages are available, consult factory for availability.

DC Output Characteristics (floating)

- Output Power: 100 watts (maximum continuous power, may require derating for some low voltage outputs)
- Line Regulation: ±2.0% Typical
- Load Regulation: ±2.0% Typical (No load to full load; nominal input)
- Output Ripple/Noise: 1% Typical (pk-pk; nominal input; full load; 20MHz bandwidth)
- Set Point Accuracy: ±1.0% of Output Voltage (Nominal input; full load; 25°C)
- Transient Response: Output voltage returns to within 1% in less than 2.5mS for a 50% load change and the peak transient does not exceed 5%
- Overshoot: Turn-on and turn-off overshoot should not exceed 5% over nominal voltage

Electrical Characteristics

- Switching Frequency: 250KHz Fixed
- Efficiency: 85% Typical (Measuring at 115Vac and at full load)
- Turn On Delay: 250 to 500 mS (To nominal output voltage)
- Isolation Voltage:
 - Input to Output: 2000Vrms
 - Input to Chassis: 1000Vrms
 - Output to Chassis: 1000Vrms
- Isolation Resistance: 100Mohms (Input to output)
- Temperature Regulation: $\pm 2.0\%/^{\circ}\text{C}$ ($\pm .005\%/^{\circ}\text{C}$ max; over operating temp range)

Protection

- Over Current Limit: 115 to 130%. Auto-recovery after removal of overload condition.
- Over-Voltage Setpoint: 108 to 125% of output voltage. Unit latched 1 minute, recycle AC input to reset
- Short Circuit: Auto-recovery after short circuit condition is removed
- Over Temperature Protection: The power supply is protected for over temperature conditions with thermal shutdown. Auto-Recovery when temperature returns to normal

Environmental

- Operating Temperature: -40° to $+85^{\circ}\text{C}$ (baseplate)
- Storage Temperature: -50° to 100°C
- Operating Humidity: 5% to 90% RH, Non-condensing
- Storage Humidity: 5% to 95% RH, Non-condensing
- Operating Altitude: Sea-level to 40,000 ft.
- Shock & Vibration: Designed to meet RTCA/DO-160 Section 7, Cat B & Section 8, Category Z, Curve B
- RF Susceptibility (Conducted & Radiated): Designed to meet RTCA/DO-160, Section 20, Category M
- Emissions (Conducted & Radiated): Designed to meet RTCA/DO-160, Section 21, Category M

Cooling

- Conduction Cooling: Baseplate not to exceed 85°C for full rated output

Mechanical

- Enclosure: Metal chassis, Aluminum baseplate and enclosure, non-finish
- Outline Dimensions: 4.5" X 8.5" X 2.5" (W X L X H) – not including I/O connector
- Weight: ~ 3.75 lbs. (~ 1700 grams)
- AC Input Connector (J1): D38999 or EQ.
- DC Output Connector (J2): D38999 or EQ.

Optional Features, Controls or Alarms

- Consult factory

Note

- Product specifications subject to change without notice