

# 500 Watt - MGPS Series Military Grade Power Supply Product Specification

## Product Description

This product is a 500 watt, single output, military grade power supply designed for electronic systems operating in harsh environments under adverse temperature conditions. It is intended for a single phase, AC power source and designed to meet applicable military standards for airborne, ground and shipboard applications.

## Product Features

- Designed to Meet MIL-STD-461/704/810/1399
- Wide Frequency Range: 47-440Hz
- Operating Temperature Range: -40° to +85°C
- Baseplate Mounting, Conduction Cooled

## AC Input

- Voltage Input Range: 90-264Vac
- Frequency: 50/60/400Hz (47-440Hz)
- Phase: Single Phase, 2 wire plus ground
- Typical Input Current: 5.0A at 115Vac input, full load
- Power Factor Correction: 0.95 min @ 115Vac, full load. Designed to meet MIL-STD-1399, Section 300A (60Hz)
- Input Transient Protection: Designed to meet MIL-STD-704A/D (80Vdc for 100mSec)
- Input Surge Protection: Designed to meet MIL-STD-1275A/D (100Vdc for 50mSec)



## Output Selection Guide

Model #:	Voltage	Max Current	Regulation	Ripple
MGPS500-1P-12	12Vdc	41.6 Amps	±3%	120mV pk-pk
MGPS500-1P-15	15Vdc	33.3 Amps	±3%	150mV pk-pk
MGPS500-1P-24	24Vdc	20.8 Amps	±3%	240mV pk-pk
MGPS500-1P-28	28Vdc	17.8 Amps	±3%	240mV pk-pk
MGPS500-1P-36	36Vdc	13.8 Amps	±3%	240mV pk-pk
MGPS500-1P-48	48Vdc	10.4 Amps	±3%	240mV pk-pk

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

## DC Output Characteristics (floating)

- Output Power: 500 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: 88% 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: 500Vdc
- Isolation Resistance: 100Mohms (Input to output)
- Temperature Regulation:  $\pm 0.005\%/^{\circ}\text{C}$  ( $\pm 2.0\%/^{\circ}\text{C}$  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:  $-40^{\circ}$  to  $+85^{\circ}\text{C}$  (baseplate)
- Storage Temperature:  $-50^{\circ}$  to  $+100^{\circ}\text{C}$
- 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 MIL-STD-810G
- EMC Radiated & Conducted EMI: Designed to meet MIL-STD-461F

## Cooling

- Conduction Cooling: Baseplate not to exceed  $+85^{\circ}\text{C}$  for full rated output

## Mechanical

- Enclosure: Metal chassis, Aluminum baseplate and enclosure, non-finish
- Outline Dimensions: 2.5" X 5.5" X 9.5" (H X W X L) – excluding I/O connectors
- Weight:  $\sim 3.75$  lbs. ( $\sim 1700$  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