500-2000 Watt AC-DC Switchers

SPECIFICATIONS

AC INPUT:
95-260 VAC 47-880 Hz single phase. Power factor corrected. Meets MIL-STD-1399, Section 300, type I requirements (spike voltage test).

EFFICIENCY:
70% minimum or greater.

LINE REGULATION:
±1% of nominal over the full range of line input voltage.

LOAD REGULATION:
±1% for change from no load to full load.

RIPPLE AND NOISE:
Peak-to-peak combines ripple and noise does not exceed 2% of nominal on the output measured with a 20 MHz bandwidth.

OPERATING TEMPERATURE RANGE:
Storage, transportation and handling: -50° to +85°C.
Ambient temperature: -40°C to +70°C baseplate.

ISOLATION:
Input to Output 1000 VDC
Input to Case 1000 VDC
Output to Case 500 VDC

SHORT CIRCUIT PROTECTION:
Each unit is completely protected against a short circuit of any duration. The constant current circuit is nominally set at 120% of full load to reduce voltage. The output voltage automatically restores to normal when the short is removed.

OVER-VOLTAGE PROTECTION:
The output over-voltage protection will not exceed 120% of nominal voltage.

INPUT PROTECTION:
Internal fuse. In-rush current limiting.

MODEL NUMBER SYSTEM

AS500 S - 28 - XX

- AS500 — MODEL FAMILY (500W OUTPUT)
- S — CONFIGURATION
  - **S** - "FLAT" MOUNT (1.25" ht)
  - **F** - "ULTRA-FLAT" MOUNT (.65" ht)
- 28 — OUTPUT VOLTAGE
  - 5 = 5 VDC
  - 12 = 12 VDC
  - 13.6 = 13.6VDC
  - 24 = 24 VDC
  - 28 = 28 VDC
  - 48 = 48 VDC
- XX — OPTIONS (SEE BELOW)

OPTIONS

(-1) UNIVERSAL INPUT	(-8) SALT SPRAY SEALING
(-2) EXTENDED HOLD-UP TIME	(-9) REMOTE SENSE BYPASS
(-3) ISOLATED BIT OUTPUT AC: OK	(-10) ADDITIONAL PRELOAD (ABOVE STD)
(-4) ISOLATED BIT OUTPUT AC: FAIL	(-11) INRUSH CURRENT LIMITER
(-5) BIT OUTPUT DC: OK	(-12) OVP DISABLE
(-6) ISOLATED BIT OUTPUT DC: FAIL	(-13) OVP ENABLE
(-7) NOT LISTED	

FEATURES

- Low Profile (0.65" height when mounted in "Ultra-Flat" configuration)
- Power Factor Correction
- Fully compliant with MIL-STD 461D, CE101, CE102
- Meets MIL-S-901 (High Impact shock)
- Meets MIL-STD-810F
- Forced Current Sharing (up to 4 modules for a total of 2000 watts)
- 19 " IEEE Rack-mount adapter kits available
- Parallel mounting and alternate connectors available

REMOTE ERROR SENSING: Standard.

RELIABILITY:
MTBF 40,000 hours calculated per MIL-HDBK-217B in naval sheltered environment.

ELECTROMAGNETIC COMPATIBILITY:
Meets the following MIL-STD-461 electromagnetic susceptibility requirements: CE101, CE102.

OUTLINE DIMENSIONS:
Refer to mechanical drawings.

WEIGHT: 4.4 to 5 lbs typical.

ENVIRONMENTAL CONDITIONS:
Shock test: Unit meets MIL-S-901 requirements (light weight).
Vibration test: Unit meets MIL-STD-167, type I requirements.
Humidity: Power supply operates without any evidence of degraded performance in non-condensing relative humidity up to 95%.

MAXIMUM OUTPUT CURRENT RATINGS

Output Voltage	Single Unit	2 Units Parallel	3 Units Parallel	4 Units Parallel
5V	100A	200A	300A	400A
12V	42A	83A	125A	167A
13.6V	36.7A	73.5A	110A	147A
15V	33A	67A	100A	133A
24V	21A	42A	63A	83A
28V	18A	36A	54A	71A
48V	10A	20A	31A	41A

Specifications are subject to change without notice

Abbott
8203 Vineland Avenue
Sun Valley, CA 91352
Tel. 818-504-0644
Fax. 818-768-0395

Call us toll-free **1-800-367-8200**
or visit us on-line at: **www.abbott-tech.com**

Application Notes

Abbott **AC-DC switchers** are designed to operate in a rugged military environment where a high degree of isolation, regulation and thermal performance is required. The extreme low-profile of these modules makes them an ideal choice in applications where space is limited, and reliability is a chief concern. These switchers represent a cost-effective, off-the-shelf alternative to costly DC-DC arrays . The units are fully compliant with MIL-STD 461D, CE101, CE102 and also meet MIL-S-901(high impact shock), MIL-STD-810F and MIL-STD-1399, Section 300, type I requirements (spike voltage test).

Among **key standard features** are input power factor correction, wide 90-130 Vrms input range, full cycle holdup during power interruption, soft start/controlled inrush, on-board in-line fuse and overvoltage shutdown. These state-of-the-art AC-DC switchers are perfectly suited for airborne, ground or shipboard systems.

Key options include:

- Universal 90-260 Vrms input range
- Parallelable - single wire current sharing
- Extended holdup time up to 100 milliseconds
- Isolated BIT outputs AC-OK, DC-OK
- Isolated INHIBIT input
- MIL-STD 461C CE01/CE03 EMI compliance
- 47 - 440 Hz input frequency
- FCC 20780 class A EMI compliance

Power Supply Glossary

Ambient Temperature – the temperature of the still air surrounding a power supply, measured a minimum of 4 inches (10.2 cm) from the supply. Note that these Abbott supplies are conduction-cooled and that temperature specifications refer to baseplate temperature, not ambient temperature.

Efficiency – the ratio of total output power, expressed as a percentage. Efficiency must be specified at a specific combination of load and input voltage.

Isolation – the electrical separation between the input and output of a power supply due primarily to the power transformer. The isolation is a function of materials and spacing throughout the supply.

Line Regulation – the maximum change in output voltage, expressed as a percentage, that occurs as the input voltage varies over its specified limits, with load and temperature constant.

Load Regulation – the change in output voltage, expressed as a percentage of nominal voltage, that occurs as the load changes from minimum to maximum, at constant line and constant temperature. Load change may be specified for other than no load to full load as, for example, 50% load to full load.

Mean Time Between Failure (MTBF) – the failure rate of a power supply, expressed in hours, either predicted as prescribed by Military Standard MIL-HDBK-217 or measured as prescribed by Military Standard MIL-STD-781C.

Periodic and Random Deviation (PARD), or Ripple and Noise - the unwanted periodic (ripple) or aperiodic (noise) deviation on the power supply output voltage from its nominal value. Ripple is a function of the input line and switching components. PARD is expressed in millivolts peak-to-peak or rms, at a specified bandwidth.

Over-Voltage Protection (OVP) – a protective feature that shuts down a power supply (reduces the output voltage to a minimal level) to prevent damage to the load when the output voltage exceeds a predetermined limit.

Short-Circuit Protection – a protective feature that limits the output current of a power supply to prevent damage to the supply caused by short circuits. There are two types of short-circuit, or overload, protection depending on the power supply:

Foldback Current Limiting protects switching regulator power supplies from damage when an overload occurs by reducing, or folding back, both the output voltage and current as the load resistance ranges from maximum to short circuit.

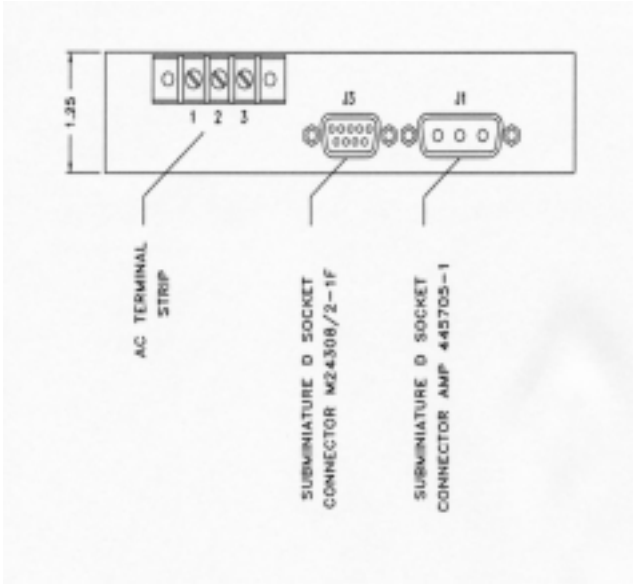
Constant Limiting Current protects power supplies from damage when an overload occurs by holding the output current constant.

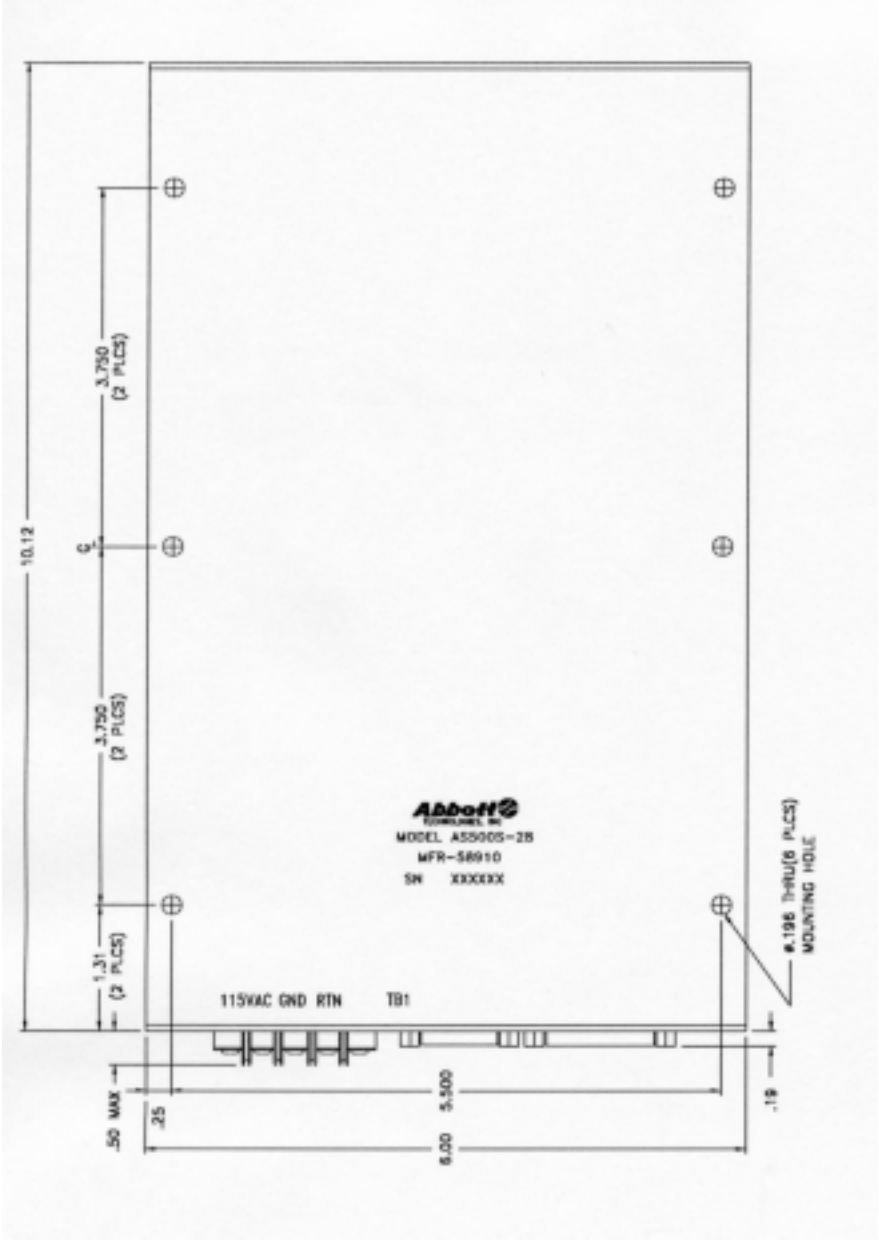
Abbott
8203 Vineland Avenue
Sun Valley, CA 91352
Tel. 818-504-0644
Fax. 818-768-0395

500-2000 Watt AC-DC Switchers

MECHANICAL DIMENSIONS

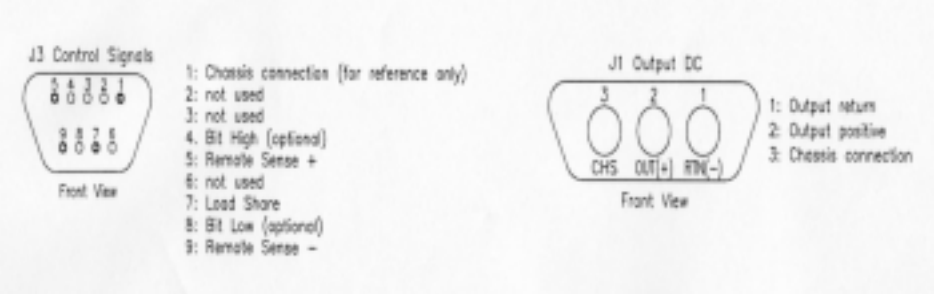
FLAT CONFIGURATION





NOTES:

1. MATERIAL: ALUMINUM ALLOY 6063-T6 OR EQUIVALENT.
   FINISH: a) BLACK ANODIZE PER MIL-A-8625 TYPE 2 CLASS 2.
2. MAXIMUM WEIGHT IS 5 POUNDS.



8203 Vineland Avenue
Sun Valley, CA 91352
Tel. 818-504-0644
Fax. 818-768-0395

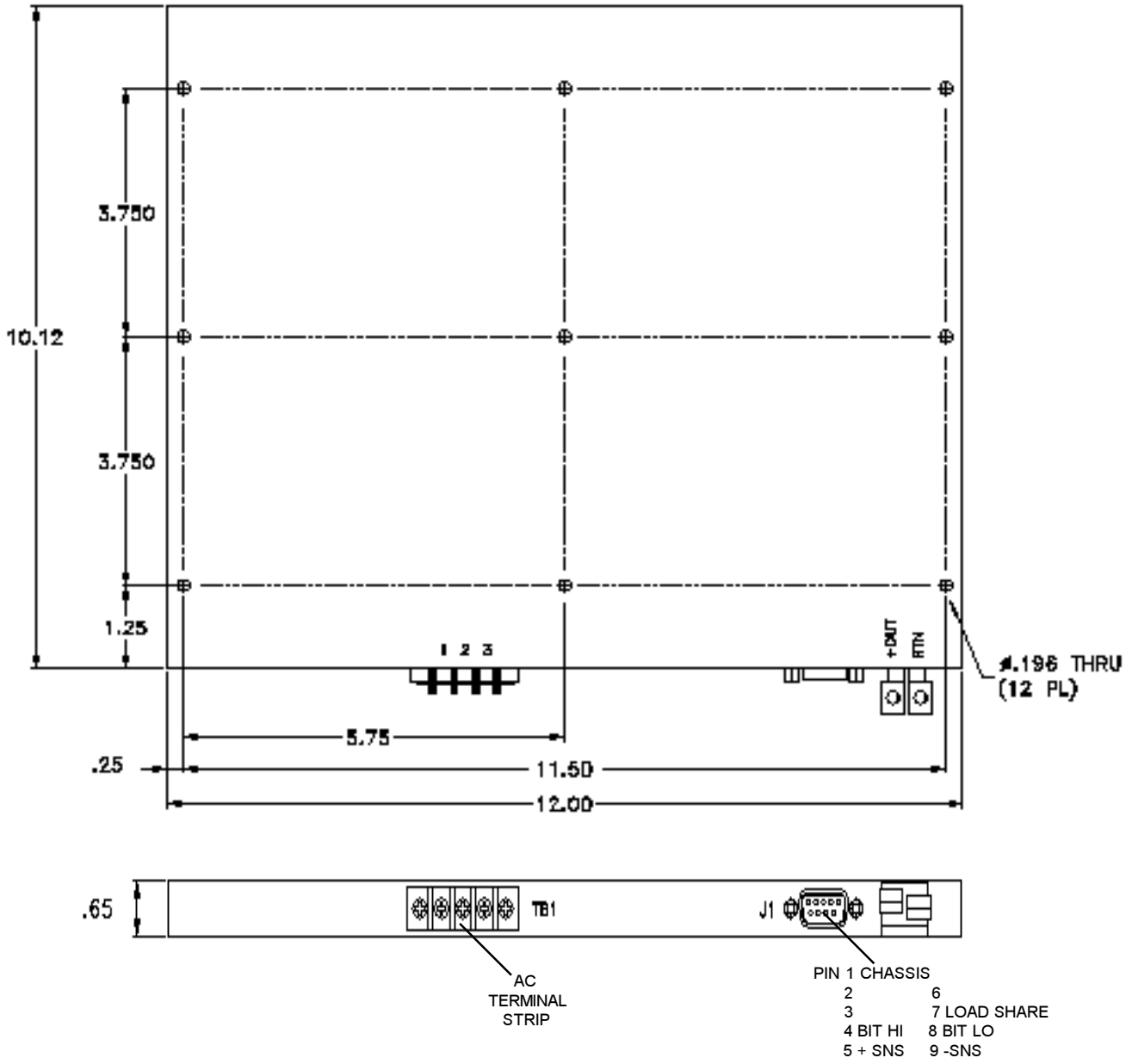
Call us toll-free **1-800-367-8200**

or visit us on-line at: **www.abbott-tech.com**

500-2000 Watt AC-DC Switchers

MECHANICAL DIMENSIONS

ULTRA-FLAT CONFIGURATION



Abbott

8203 Vineland Avenue
Sun Valley, CA 91352
Tel. 818-504-0644
Fax. 818-768-0395

Call us toll-free **1-800-367-8200**

or visit us on-line at: **www.abbott-tech.com**