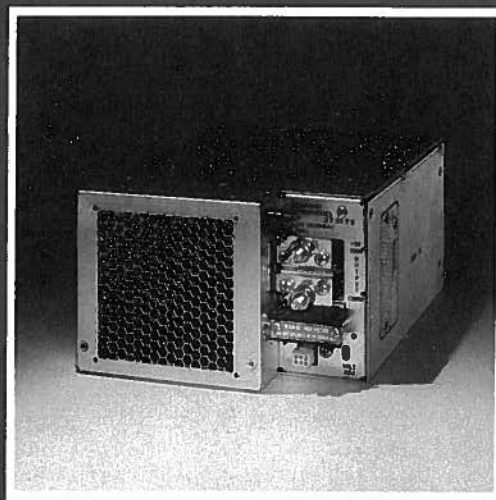


PIONEER MAGNETICS, INC.

Dependables

**Series PM2496A,
2497A, 2500A, 2502**
SINGLE OUTPUT,
SWITCHING POWER SUPPLIES
250-2000 WATTS



FEATURES

- Approved to UL, CSA Safety Standards
- 5 x 8 x 11" Envelope (250-1000 watts)
- 0 to 50°C Operation at Full Load
- AC Input Fuse (PM2496A/97A/2500A)
- Overvoltage Protection
- Overcurrent Protection
- Overtemperature Protection
- Soft Start
- Remote Sense
- No Turn-On or Turn-off Overshoot
- Completely Isolated Outputs
- Self Contained Forced Air Cooling
- 75,000 Hour MTBF
- 115V/230V Input (Dedicated)

TYPICAL OPTIONS

- (-1) Power Fail Signal
- (-2) Logic Inhibit
- (-3) Crowbar (PM2496A/97A/2500A)
- (-5) Margining/Programming
- (-6) Direct Paralleling
- (-8T) Power Good

Model PM2496A, 2497A, 2500A, 2502

SINGLE OUTPUT,
SWITCHING POWER SUPPLIES
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CONFIGURATION DESCRIPTION

Pioneer's "Dependables" series of single output supplies are based on a long established, field proven technology with demonstrated MTBF's over 100,000 hours in actual field use. The series provides a completely floating, regulated output from 2V to 48 VDC utilizing an inherently stable regulator design that ensures excellent dynamic response.

Pioneer Magnetics can provide special custom options on request for units in suitable OEM quantities. Mechanical packaging considerations may limit the number of options that can be combined. Consult factory for details.

Over 300,000 "Dependables" are in the field providing reliable, trouble free operation.

The output is brought out on $\frac{5}{16}$ "-18 THD studs. The PM2496A/2497A/2500A are packaged in the industry standard 5 x 8 x 11" fan cooled envelope for output powers up to 1000 watts and output currents up to 250A. The PM2502 is packaged in a 5 x 16 x 11" envelope for an output power of up to 2000 watts and an output current of up to 500A.

The AC input is via a 6-32 screw terminal block and is protected with a front panel serviceable fuse. 115 volt and 230 volt dedicated inputs are available (3 phase, 230 volt only for PM2502—requires external breaker).

Option interface connections, where required, are brought out on one Molex connector (6 pin) at the front panel.

Output voltage is adjustable from the front panel.

SPECIFICATIONS

INPUT:

Model	PM2496A/97A	PM2500A	PM2502
Continuous voltage range:	92 to 138 184 to 275	100 to 138 195 to 275	--- 184 to 250 VAC, 3 Phase
10 minute operation*:	80 160	---	--- 160
Brown-out point:	80 160	90 175	---

- Frequency: 47 to 63Hz.
- Inrush Limiting: Automatic soft start circuitry minimizes inrush surges. Upon loss of AC power inrush circuitry will reset within 100 msec at full load. (Thermistor inrush for PM2500, PM2502).
- Turn-on Delay: 1 second maximum from application of AC line (200 msec for PM2500, PM2502). 200 msec maximum from inhibit turn-on.
- Leakage Current to Ground: 1.5 mA maximum @ 264 VAC, 63Hz.
- Surge Withstand Test: IEEE Spec 472, Rev 1974.

OUTPUT:

See Selection Chart.

OUTPUT VOLTAGE ADJUSTMENT RANGE:

±10% of nominal output voltage.

STATIC REGULATION:

- Line: ± 0.25% over full line range.
- Load: ± 0.25% over no load to full load.
- Voltage Stability: ± 0.1% after 30 minutes warm-up for a 24 hour period.
- Temperature coefficient: ± 0.02%/°C from 0°C to 50°C.

(Note: For units less than 5V the following apply:

Line: ±12.5mV, Load: ±12.5mV, VS: ±5mV,
TC: 1 mV/°C)

- Not Applicable for PM2500A

Dependables

SINGLE OUTPUT SUPPLY SELECTION CHART

Model No.		PM2496A	PM2497A	PM2497A	PM22497A	PM2500A	PM2502
Max. 5V power (Watts)		300W	500W	600W	750W	1000W	2250W
DC output Voltage (I)	Type #s (Add Amps in Blanks)	OUTPUT CURRENT (AMPS)					
2	2D—	100A			200A	250A	500A
3	3D—	60A			100A	250A	450A
5	5D—	60A	100	120	150A	200A	400A
12	12D—	30A			60A	85A	180A
15	15D—	25A			50A	70A	150A
24	24D—	16A			33A	40A	90A
28	28D—	13A			27A	36A	80A
48	48D—	8A			16A	20A	47A
60	60D—	--- Consult Factory ---					

DYNAMIC REGULATION:

- Output Transient Response: 1% deviation (50 mV deviation for units under 5V) with recovery to 0.5% in less than 250 μ sec for a 25% load step, 1A/ μ sec slew rate.
- Overshoot: No turn-on or turn-off overshoot.

P-P RIPPLE AND NOISE:

1% of nominal output at full load current, 20Hz to 20MHz bandwidth for 5V to 48V outputs. 50mV for outputs less than 5V.

HOLD-UP TIME:

(@ 115/230 VAC nominal, full load)

Model	PM2496A/97A	PM2500A	PM2502A
Minimum Hold-up Time	30 msec	15 msec	20 msec

OVERVOLTAGE PROTECTION:

- 3V-48V outputs: Unit will shut down at 125% \pm 10% of nominal output.
- 2V outputs: Unit will shut down at 3V \pm 0.1V.

OVERLOAD PROTECTION:

- (Automatic recovery from overload or short circuit).
- Foldback Point: 105 to 120% of full output current.
- Short Circuit Current: Less than 65% of full output current.

OVERTEMPERATURE PROTECTION:

Automatic latching shut-down type. After a suitable cool down period unit can be reset by cycling of AC power.

REVERSE VOLTAGE PROTECTION:

Protection against reverse voltage applied across output terminals up to rated output current (with fan running).

REMOTE SENSE:

Will compensate for up to 1/2 volt total loop drop on output line. Internal 100 ohm resistors prevent output from rising more than 100 mV should sense line be disconnected.

OPTIONS:

- (-1) Power Fail Signal—Provides a typical 5 msec warning of output drop upon loss of AC power.
- (-2) Logic Inhibit and Enable—System can be turned on or off with a TTL compatible signal or switch contact.
- (-3) Crowbar—Triggered by an overvoltage condition (125% \pm 10% of nominal) discharging the output within 50 μ sec (Note: Shut-down type OV is standard and is normally used in lieu of OV crowbar).
- (-5MR) Margining/Programming—Allows \pm 5% change of main output.
- (-6) Direct Paralleling—Current foldback is set between 100% and 105% of rated output allowing direct parallel operation.
- (-8T) Power Good Signal—Monitors the output terminals of one or more channels and sinks to logic return when output is beyond \pm 4% of nominal voltage.

TEMPERATURE:

- Operating: 0 to 50°C at full load. Derate linearly to 80% rated power for 50°C to 71°C.
- Storage: -55°C to +85°C.

HUMIDITY:

5% to 95% without condensation.

SAFETY:

Recognized to UL114, 1012 and 478, certified to CSA 22.2-143/154, (PM2496A, 2497A, 2500A).

EMI:

- Conducted: Equipped with standard LC filter to suppress EMI. Meets VDE 0871, level B with external filter.
- Radiated: Meets VDE 0871B.

MECHANICAL DIMENSIONS:

Model	PM2496A	PM2497A	PM2500A	PM2502
Weight	16 lbs	18 lbs	20 lbs	35 lbs
	7.3 kg	8.2 kg	9.04 kg	15.7 kg
Dimensions	5 x 8 x 11"		5 x 16 x 11"	
	12.7 x 20.3 x 28.9 cm		12.7 x 40.6 x 27.9 cm	

CONNECTORS:

- Main Output: 5/16"-18 THD studs. (2 each on PM2496A/97A/A2500A) (4 each on PM2502).
- AC Input: 6-32 screw terminal barrier block.
- Options Interface: (1) 6 pin Molex type. Mates with Molex 03-06-2061 (6 pin) Uses Molex 02-06-2103 male pin.

AC INPUT FUSE:

(Manufacturer and fuse model or equivalent)

Model	PM2496	PM2497	PM2500	PM2502
115V Input	Buss MDA 20	Buss MDA 20	Gould OTM 25	---
230 V Input	Buss ABC 12	Buss ABC 12	Buss MDA 20	Requires external 3 phase breaker

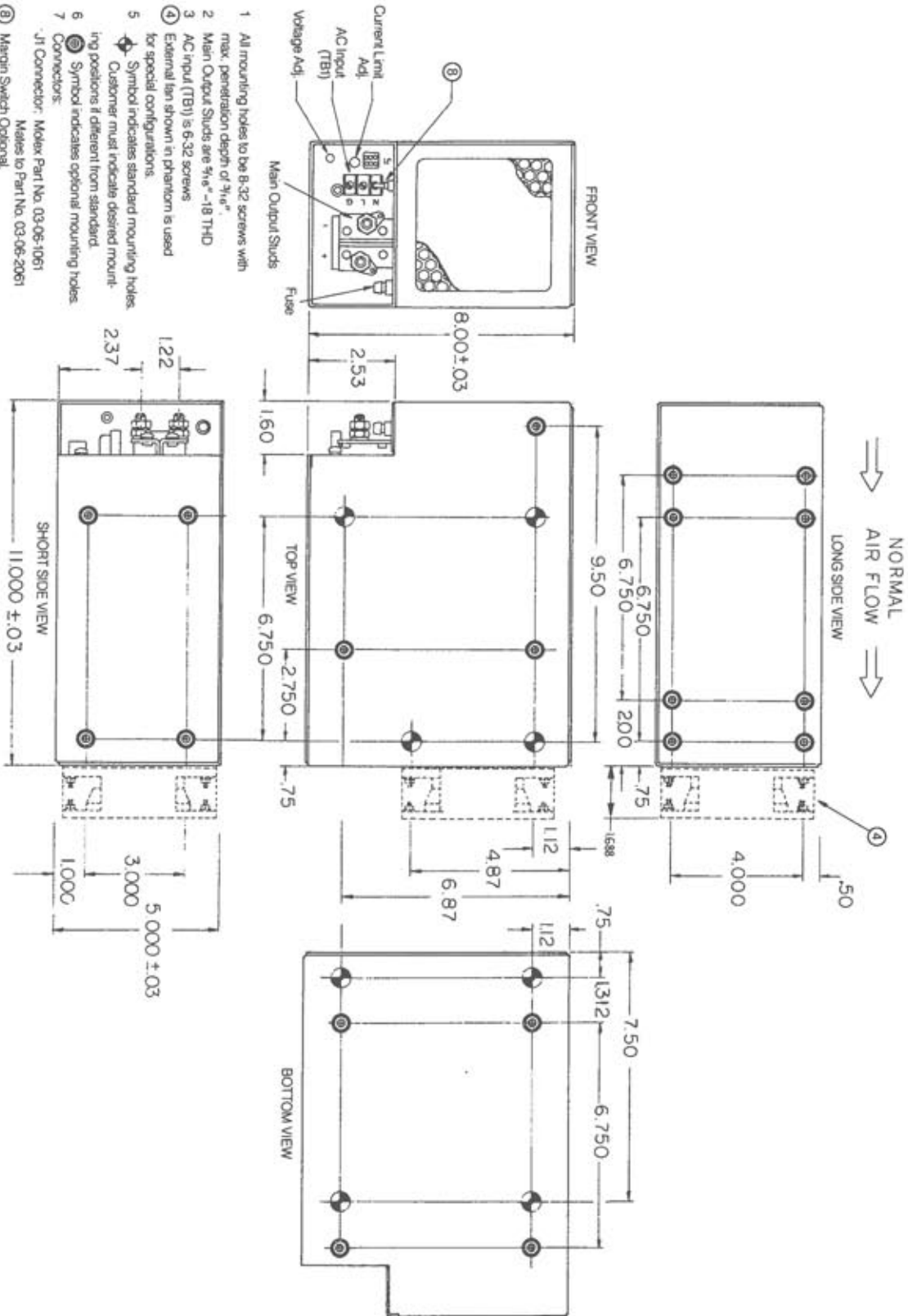
MTBF:

- PM2496A/2497A: 115,000 hours minimum.
- PM2500: 80,000 hours minimum.

(1) Other volt/amp combinations available up to 60V. Consult factory.

Pioneer Magnetics reserves the right to change specifications at any time without prior notice. It is Pioneer Magnetics' policy to improve products as new techniques and components become available.

Series PM 2496A, 97A, PM 2500A & PM 2502



- 1 All mounting holes to be 8-32 screws with max. penetration depth of $3/16"$
- 2 Main Output Studs are $5/16"$ -18 TH-D
- 3 AC Input (TBI) is 6-32 screws
- 4 External fan shown in phantom is used for special configurations.
- 5 Symbol indicates standard mounting holes. Customer must indicate desired mounting positions if different from standard.
- 6 Symbol indicates optional mounting holes.
- 7 Connectors.
- ⑧ J1 Connector. Molex Part No. 03-06-1061
- ⑨ Margin Switch Optional. Mates to Part No. 03-06-2061
- 9 All dimensional tolerances are $XX \pm .02$.
- 10 Consult factory for PM 2502 $.XXX \pm .010$