

# 2000 Watt Single Output Military Grade Power Supply

## Product Description

This unit is a 2000 watt, single output, military grade power supply designed for electronic systems operating in harsh environments (subject to abnormal shock and vibration) and extreme temperature conditions. It is conduction cooled providing a -50° to +85° C operating temperature range. This highly reliable design will meet or exceed all applicable military standards including MIL-STD-810D & MIL-STD-461D.

## Product Features

- Meets MIL-STD-461D
- Meets MIL-STD-810D
- Meets MIL-STD-704A
- 3 Phase, 400Hz Input
- Operating Temperature Range: -50° to +85° C



## AC Input

- Voltage Input Range: 115Vac, 3 phase
- Frequency: 400Hz (380-415Hz)
- Power factor correction: 0.99 @ Full Load

## Output Selection Guide

Model #:	Voltage	Max Current	Regulation	Ripple
M186-X-7	24Vdc	83.3 Amps	±1%	240mV pk-pk
M186-X-8	28Vdc	71.4 Amps	±1%	240mV pk-pk
M186-X-9	36Vdc	55.5 Amps	±1%	240mV pk-pk
M186-X-10	48Vdc	41.6 Amps	±1%	240mV pk-pk

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

## DC Output Characteristics (floating)

- Output Power: 2000 Watts (maximum continuous power, may require derating for some low voltage outputs)
- Line Regulation: ±1.0% 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: 400KHz Fixed
- Efficiency: 85% Typical (Measuring at 115Vac and at full load)
- Turn On Delay: 1.5 second maximum at 120 VAC
- Isolation Voltage: 500V between input and output. 100V between input and case.
- Temperature Regulation: +/-2.0%/°C (+/- .005%/ °C max; over operating temp range)

## Protection

- Over Current Limit: ~115 to 120% of maximum rating. Hiccup, continuous.
- Over-Voltage Setpoint: ~115% of nominal main. Unit latched 1 minute, recycle AC input to reset at 25°C.
- Short Circuit: Auto-Recovery after short circuit condition is removed.
- Over temperature Protection: Shutdown at baseplate temperature of +105°C (±5°C) Automatic recovery at baseplate temperature lower than +95°C (±5°C)

## Environmental

- Operating Temperature: -50° to +85° C (baseplate)
- Storage Temperature: -55° to 125° 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. in pressurized environment
- Shock & Vibration Standards: MIL-STD-810D
- Conducted EMI: MIL-STD-461D
- Cooling: Conduction cooled, coldplate mounted

## Reliability

- 150,000 hours, calculated per MIL-STD-217F at +85°C baseplate, ground fixed.

## Mechanical

- Outline Dimensions: ~1.7" X 5.9" X 6.9" (H X W X L) – not including I/O connector
- Weight: ~4.4 lbs. (1995 grams)
- AC Input Connector: 13 Pin Circular (D38999/20WB35PN or equiv)
- Output Connector: 55 Pin Circular (D38999/20WE35PN or equiv)

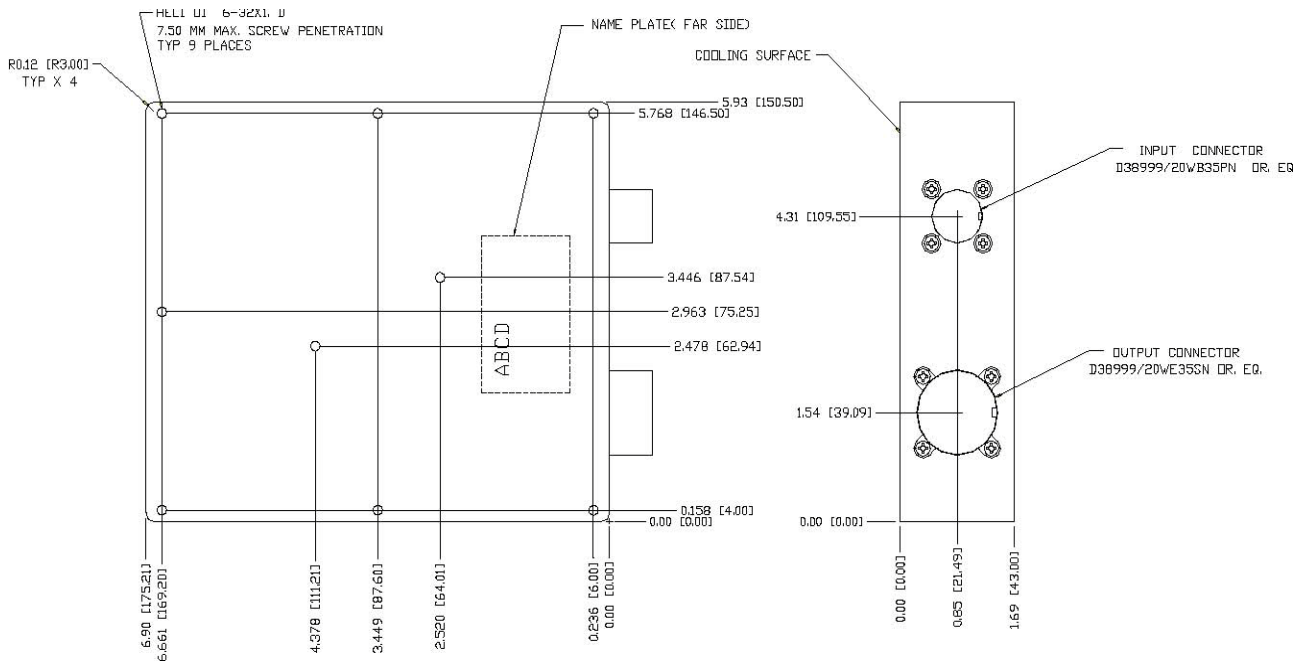
## Additional Features, Controls or Alarms

- TTL Logic Enable

## Notes

- Product specifications subject to change without notice. All Rights Reserved.
- The information and specifications contained in this document are believed to be correct and accurate at the time of publication.

## Outline Drawing



Dimensions are in Inches [mm]

Tolerance is: .XX ±.02 IN .XXX ±.01 IN

## Input Pin Assignment

Pin #	Assignment	Pin #	Assignment
1	PHASE A	9	PHASE B
2	PHASE A	10	PHASE B
3	PHASE A	11	PHASE B
4	N/C	12	N/C
5	N/C	13	PHASE C
6	PHASE C		
7	PHASE C		
8	N/C		

## Output Pin Assignment

Pin #	Assignment	Pin #	Assignment	Pin #	Assignment	Pin #	Assignment	Pin #	Assignment
1	-V	12	-V	23	-V	34	+V	45	+V
2	-V	13	-V	24	N/C	35	+V	46	-SENSE
3	N/C	14	-V	25	-V	36	+V	47	N/C
4	-V	15	-V	26	+V	37	+V	48	N/C
5	-V	16	N/C	27	+V	38	+V	49	N/C
6	-V	17	-V	28	-V	39	INHIBIT	50	N/C
7	-V	18	-V	29	-V	40	+V	51	+V
8	N/C	19	-V	30	-V	41	+V	52	+SENSE
9	N/C	20	-V	31	N/C	42	+V	53	+V
10	+V	21	-V	32	+V	43	+V	54	+V
11	-V	22	-V	33	+V	44	+V	55	+V