

# 500 Watt, Single Output Military Power Supply

## Product Description

This unit is a 500 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 -55° 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
- Wide Range Input: 90-265Vac
- Wide Range Frequency: 47-415Hz
- Operating Temperature Range: -55° to +85° C



## AC Input

- Voltage Input Range: 100-150VAC (115Vac nominal input)
- Frequency: 400Hz (47-415Hz)
- Phase: Three Phase
- Power factor correction: 0.99 @ Full Load

## Output Selection Guide

Model #:	Voltage	Max Current	Regulation	Ripple
M115-X-1	3.3Vdc	45 Amps	±3%	50mV pk-pk
M115-X-2	5.0Vdc	45 Amps	±3%	50mV pk-pk
M115-X-3	9.0Vdc	45 Amps	±3%	120mV pk-pk
M115-X-4	12Vdc	37.5 Amps	±1%	120mV pk-pk
M115-X-5	15Vdc	33.3 Amps	±1%	150mV pk-pk
M115-X-6	19Vdc	26.3 Amps	±1%	150mV pk-pk
M115-X-7	24Vdc	20.8 Amps	±1%	240mV pk-pk
M115-X-8	28Vdc	17.8 Amps	±1%	240mV pk-pk
M115-X-9	36Vdc	13.8 Amps	±1%	240mV pk-pk
M115-X-10	48Vdc	10.4 Amps	±1%	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: ±5.0% 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:  $\pm 1.0\%$  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: 1.5 second maximum at 120 VAC
- Isolation Voltage: 500V between input and output. 100V between input and case.
- Isolation Resistance: 10Mohms (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:  $\sim 115$  to 120% of maximum rating. Hiccup, continuous.
- Over-Voltage Setpoint:  $\sim 115\%$  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  $+105^{\circ}\text{C}$  ( $\pm 5^{\circ}\text{C}$ ) Automatic recovery at baseplate temperature lower than  $+95^{\circ}\text{C}$  ( $\pm 5^{\circ}\text{C}$ )

## Environmental

- Operating Temperature:  $-40^{\circ}$  to  $+85^{\circ}$  C (baseplate)
- Storage Temperature:  $-55^{\circ}$  to  $125^{\circ}$  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 mounting

## Reliability

- 150,000 hours, calculated per MIL-STD-217F at  $+85^{\circ}\text{C}$  baseplate, ground fixed.

## Mechanical

- Outline Dimensions:  $\sim 1.1" \times 3.5" \times 5.6"$  (H X W X L) – not including I/O connector
- Weight:  $\sim 1.28$  lbs. (580 grams)
- AC Input & Output Connector: 37 Pin D-Sub M24308/24-40 or equiv.

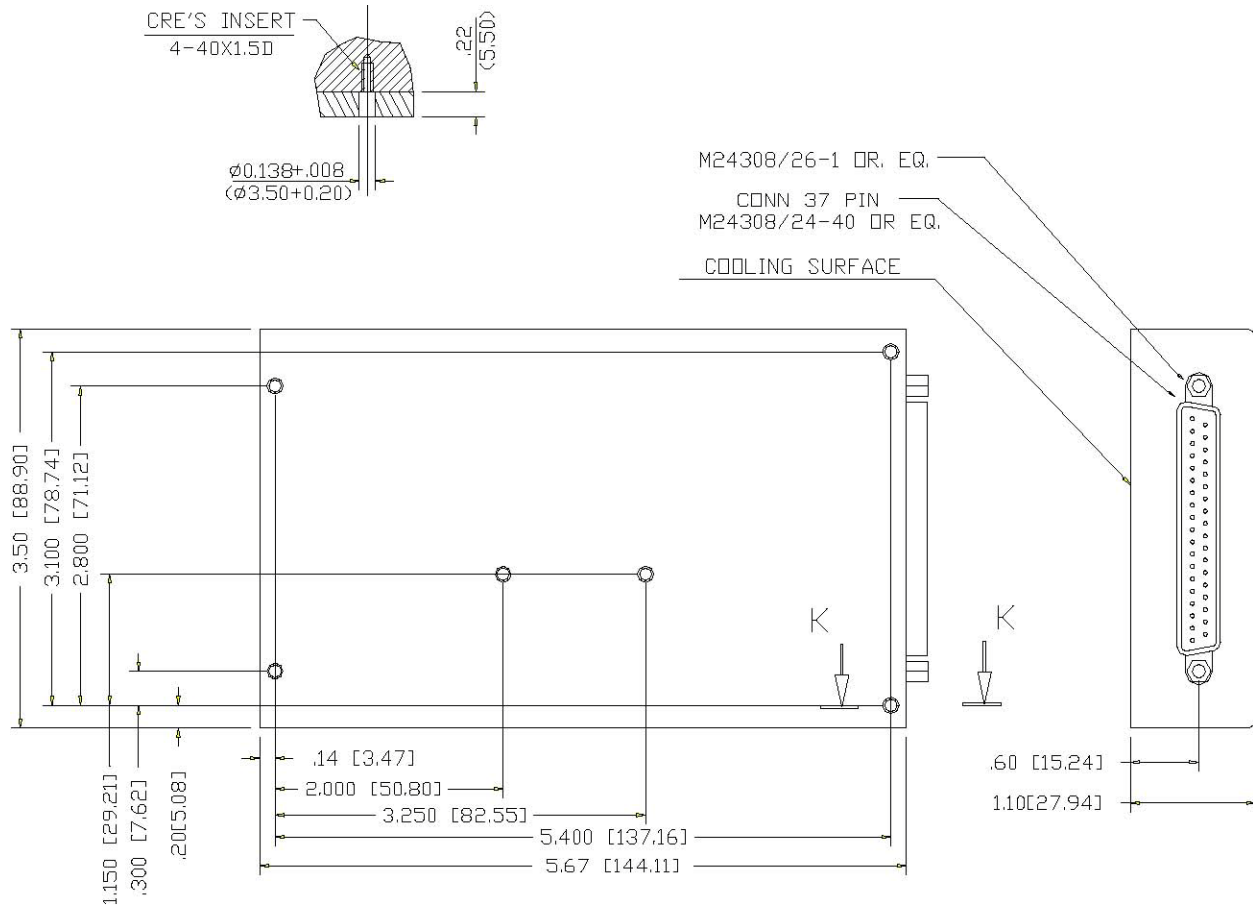
## Additional Features, Controls or Alarms

- Remote External Synchronization Capability In/Out
- TTL Logic Enable
- Remote Sense

## 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



## Notes

1. Dimensions are in Inches [mm]
2. Tolerance is: .XX  $\pm$ .02 IN .XXX  $\pm$ .01 IN
3. Weight: 1.28 lb. (580 gr.)

## Pinout Assignments

Pin #	Assignment	Pin #	Assignment	Pin #	Assignment	Pin #	Assignment		
1	+Vdc	9	-Vdc	17	PHASE B	25	CHASSIS	33	PHASE A
2	+Vdc	10	-Vdc	18	N/C	26	-SENSE	34	N/C
3	+Vdc	11	INHIBIT	19	PHASE C	27	-Vdc	35	PHASE B
4	+Vdc	12	SYNC*	20	+Vdc	28	-Vdc	36	N/C
5	+Vdc	13	SYNC (RTN)	21	+Vdc	29	-Vdc	37	PHASE C
6	+SENSE	14	N/C	22	+Vdc	30	-Vdc	38	
7	-Vdc	15	PHASE A	23	+Vdc	31	-Vdc	39	
8	-Vdc	16	N/C	24	+Vdc	32	N/C	40	