

1000 Watt Military Grade Power Supply - 400 Hz, 3 Phase Input, Single Output

Product Description

This unit is a 400Hz, 3 phase input, military grade power supply providing a 1000 watts in a single output, designed for electronic systems operating in harsh environments (subject to abnormal shock and vibration) and extreme temperature conditions. It is conduction cooled providing a -40° 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.

Features

- Meets MIL-STD-461D
- Meets MIL-STD-810D
- Meets MIL-STD-704A
- Input: 115Vac, 400Hz, 3 Phase
- 90% Efficiency
- Operating Temperature Range: -40° to +85° C



AC Input

- Voltage Input Range: 100-132VAC (115VAC nominal input)
- Frequency: 400Hz
- Phase: Three Phase
- Power factor correction: 0.99 @ Full Load

Output Selection Guide

Model #:	Voltage	Max Current	Regulation	Ripple
M183-X-1	3.3Vdc	50 Amps	±5%	50mV pk-pk
M183-X-2	5.0Vdc	50 Amps	±5%	50mV pk-pk
M183-X-3	9.0Vdc	50 Amps	±5%	120mV pk-pk
M183-X-4	12Vdc	50 Amps	±3%	120mV pk-pk
M183-X-5	15Vdc	50 Amps	±3%	150mV pk-pk
M183-X-6	19Vdc	50 Amps	±3%	150mV pk-pk
M183-X-7	24Vdc	42 Amps	±3%	240mV pk-pk
M183-X-8	28Vdc	36 Amps	±3%	240mV pk-pk
M183-X-9	36Vdc	29 Amps	±3%	240mV pk-pk
M183-X-10	48Vdc	21 Amps	±3%	240mV pk-pk

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

DC Output Characteristics (Floating)

- Output Power: 1000 Watts (maximum continuous power, requires derating for low voltage outputs)
- Line Regulation: $\pm 3.0\%$ Typical
- Load Regulation: $\pm 2.0\%$ 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: 400KHz Fixed
- Efficiency: 90% 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. 500V between input and case.
- Isolation Resistance: 10Mohms (Input to output)
- Temperature Regulation: $\pm 2.0\%/^{\circ}\text{C}$ ($\pm 0.005\%/^{\circ}\text{C}$ max; over operating temp range)

Protection

- Over Current Limit: ~ 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°C ($\pm 5^{\circ}\text{C}$) Automatic recovery at baseplate temperature lower than +95°C ($\pm 5^{\circ}\text{C}$)

Environmental

- Operating Temperature: -40° 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
- Conducted EMI: MIL-STD-461D
- Cooling: Conduction cooled, coldplate mounting

Reliability

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

Mechanical

- Outline Dimensions: 1.5" X 3.7" X 6.4" (H X W X L) – not including I/O connector
- Weight: ~ 2.37 lbs. (1075 grams)
- AC Input Connector: 15 Pin D-Sub, M24308/24-38F or EQ.
- Output Connector: 25 Pin D-Sub, M24308/23-39F or EQ.

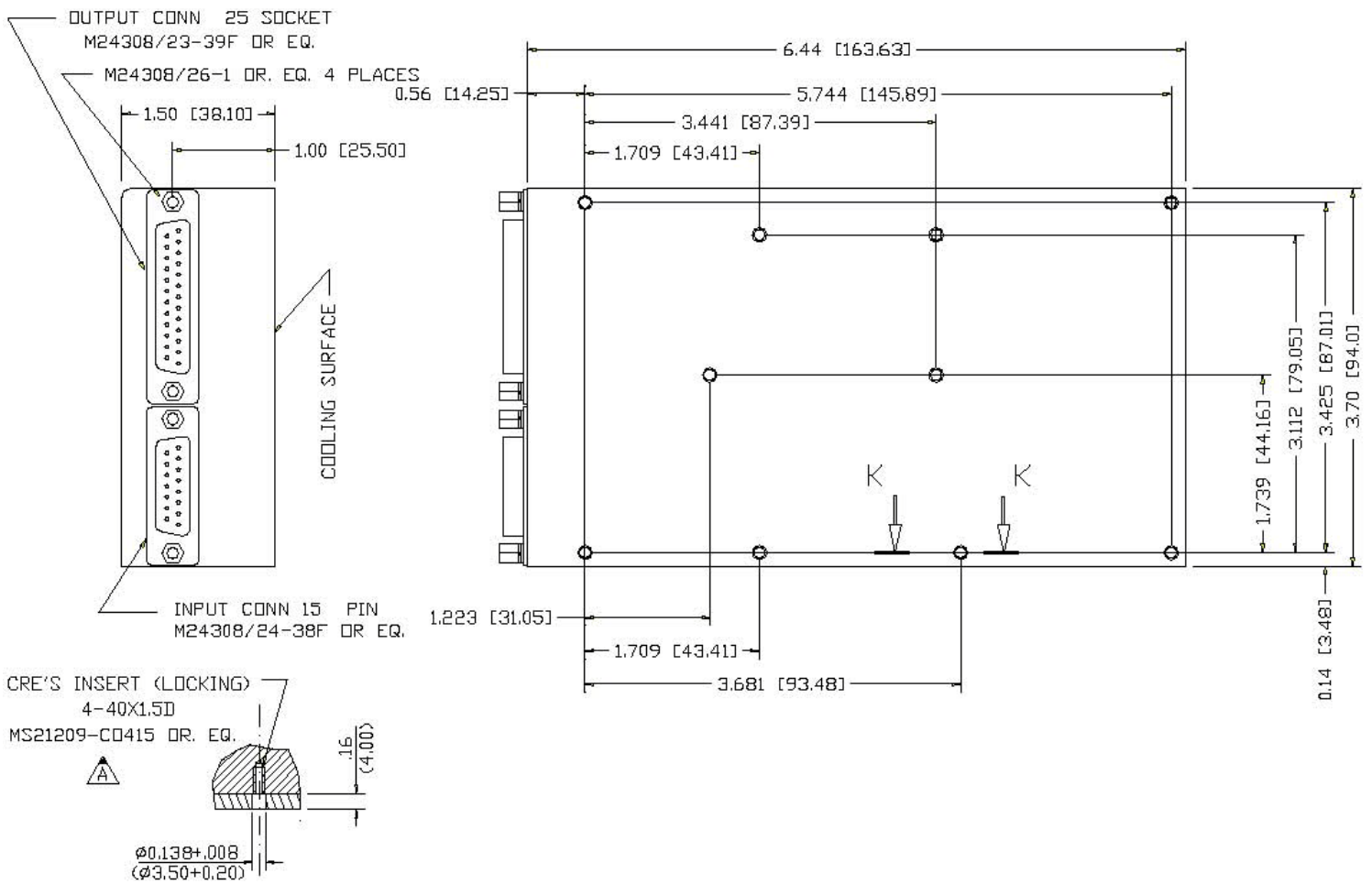
Additional Features, Controls or Alarms

- TTL Logic Inhibit
- Remote Sense

Notes

- Product specifications subject to change without notice. All Rights Reserved.
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Outline Drawing



Dimensions are in Inches [mm]

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

Input Pin Assignment

Pin #	Assignment	Pin #	Assignment
1	N/C	9	PHASE C
2	PHASE C	10	PHASE C
3	N/C	11	N/C
4	PHASE B	12	PHASE B
5	PHASE B	13	N/C
6	N/C	14	PHASE A
7	PHASE A	15	PHASE A
8	N/C		

Output Pin Assignment

Pin #	Assignment	Pin #	Assignment	Pin #	Assignment
1	+ SENSE	11	-V	21	-V
2	- SENSE	12	-V	22	-V
3	INHIBIT	13	-V	23	-V
4	+V	14	+V	24	-V
5	+V	15	+V	25	-V
6	+V	16	+V		
7	+V	17	+V		
8	+V	18	+V		
9	-V	19	+V		
10	-V	20	-V		