M4252 SERIES

MINIATURE, HIGH DENSITY,

SINGLE OUTPUT,

DC/AC INVERTER

(Nom 350VA, Peak 500VA, 50,60,400Hz)

Applications

Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Inrush Current Limiter
- External On/Off Inhibit
- Fixed switching frequency (250 KHz)
- External synchronization capability
- EMI/RFI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

Electrical Specifications

DC Input: DC Input range: 18 to 80 Vdc, per MIL-STD-704A.	***AC Output – Single Phase***: Output range – 75V to 115V Output power – 350VA (peak 500VA for 45 sec)	***Isolation:*** 200V between Input and Output 200V between Input and Case 500V between Output and Case
Line/Load regulation: Less than 3% (no load to full load, –40°C to +85°C).	***AC Output – Triple Phase*** Output range – 75V to 115V Output power - 1050VA (peak 1500VA) (3 units in parallel)	***EMI/RFI:*** Design to meet MIL-STD-461C CS01, CS02, CS06, CE03, CE07, RS02, RS03
Wave form: Sinusoidal with max 5% (for 50,60Hz) and 7% (for 400Hz) harmonic distortion into a resistive load.	***Efficiency :*** 80±1% - Typical (full load, room temperature)	***Turn on*** Soft Start – no voltage overshoot.

*Protections **

Input

- **Inrush Current Limiter** – peak value of 2.5x Iin for less than 40µSec.
- **Under voltage protection** – unit protects itself (no damage) below 17Vdc.
- **Over voltage protection** – unit protects itself (no damage) above 82Vdc.

Output

- **Electronic over voltage protection** – Internal control protects unit (no damage) 10% above nominal voltage.
- **Current limiting** – Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).

General

- **Over temperature protection:** Shutdown at base plate temperature of +105°C (±5°C) Automatic recovery at base plate temperature lower than +95°C (±5°C)

* Thresholds and protections can be modified / removed – please consult factory.

MILPOWER SOURCE
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TEL: (603)267-8865, FAX: (603)267-7258 WEBSITE: www.milpower.com

Environmental

Design to Meet MIL-STD-810F

Temperature:

Operating: –40°C to +85°C (base plate)

Storage: –55°C to +125°C

Humidity:

Method 507.4 - Up to 95%.

Altitude:

Method 500.4, Procedure I & II, 40,000 ft. and 70,000 ft. Operational

Vibration and Shock:

Shock – Saw-tooth, 20g peak, 11mS.

Vibration - Figure 514.5C-17. General minimum integrity exposure. (1 hour per axis.)

Salt Fog:

Method 509-4

Reliability

150,000 hours, calculated per MIL-STD-217F at +85°C base plate, Ground fixed.

Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. **Please consult factory for details.**

Pin Assignment

J1 - input connector

PIN No.	PIN Function
4-8, 17-20	+Vin
9-13, 21-24	-Vin
16	IN Signal RTN *
3	Inhibit
14	SYN out (+)
1	SYN out (-)
2	SYN IN (+)
15	SYN IN (-)
25	Chassis

J2 output connector

PIN No.	PIN Function
13,25	AC out $
10,22	AC out N
7	Master / Slave
19	Start 0
1	+ Start 120
14	- Start 120
16	+ Start 240
3	- Start 240
6, 18	**Output Freq
5	Output Signal RTN

*IN Signal RTN is reference ground for all signals.

** choosing the output frequency is done in the following way (reference ground PIN 5):

Output frequency

Frequency	Pin 6	Pin 18
400 Hz	0	0
60 Hz	1	0
50 Hz	0	1
Off	1	1

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Functions and Signals

INHIBIT signal
The INHIBIT signal is used to turn the power supply ON and OFF.
TTL "1"or OPEN – will turn on the power supply. (For normal operation leave the signal not connected.)
TTL "0" – will turn off the power supply.

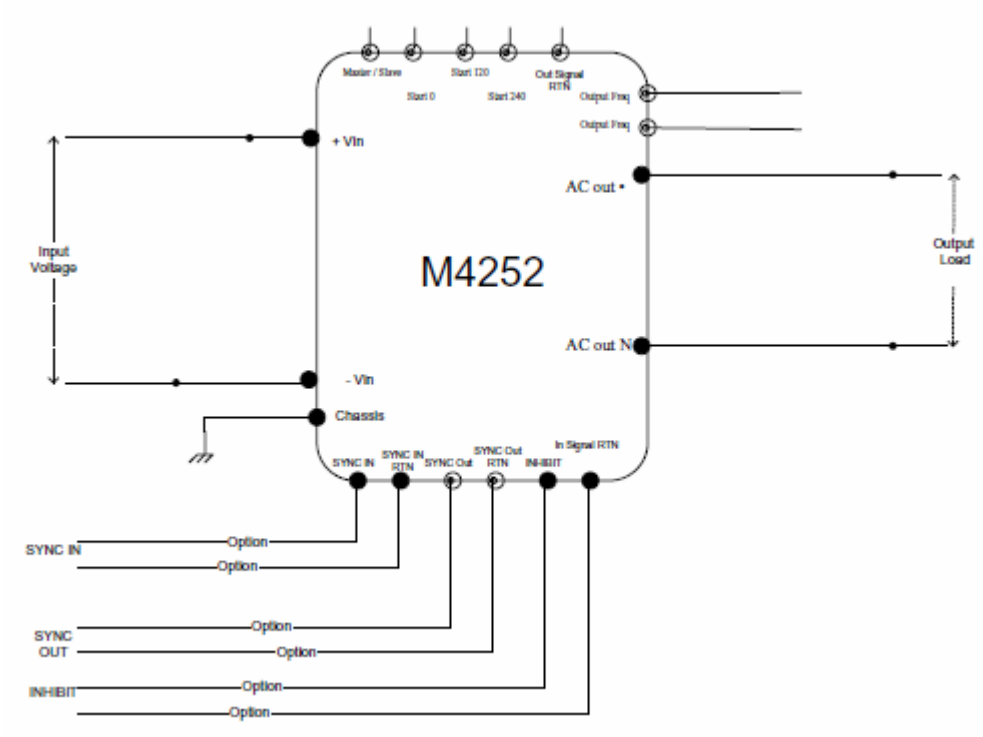
SYN IN signal
The SYN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250Khz ± 10Khz. When not connected the power supply will work at ~250KHZ

SYN OUT signal
The SYNC OUT signal is used to sync the system with the power supply frequency.

Master / Slave
These signals are used for triple phase output connection – for detail please consult factory

Start 0 , Start 120, Start 240
These signals are used for triple phase output connection – for detail please consult factory

Chassis PIN
This chassis pin allows connection of the unit chassis to system chassis.



NOTE: For Triple phase output connection please consult factory.

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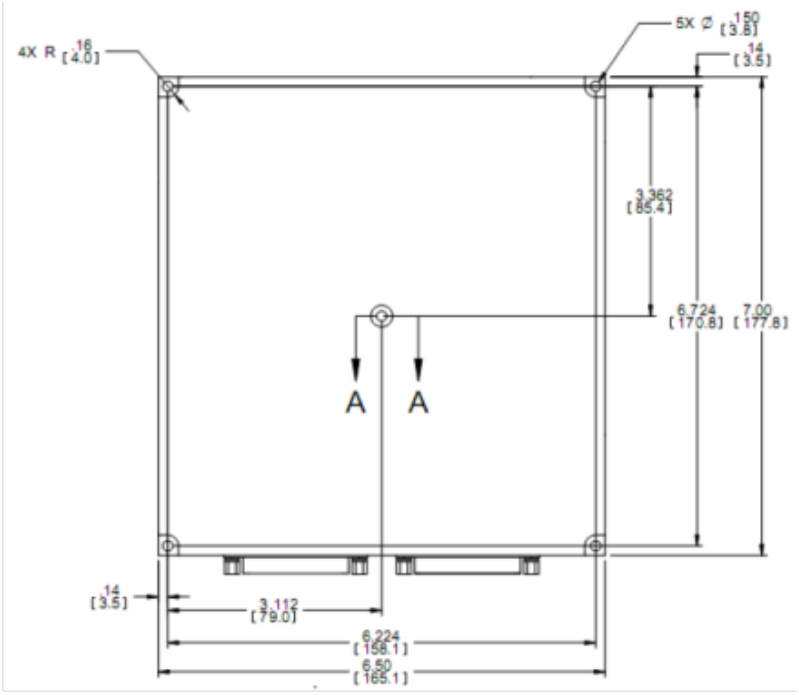
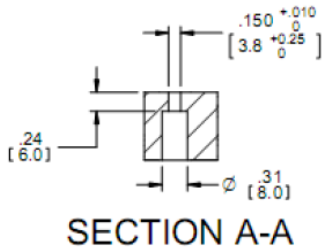
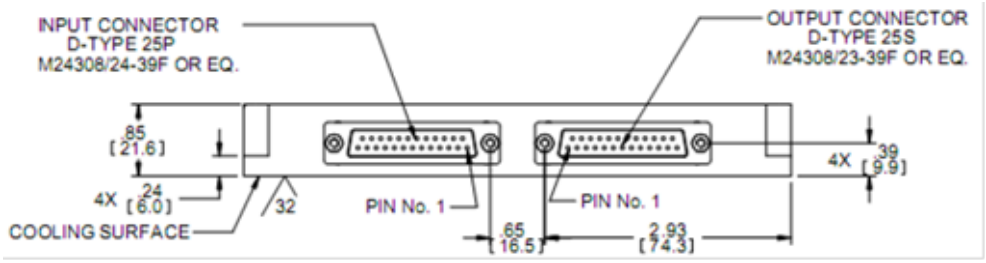
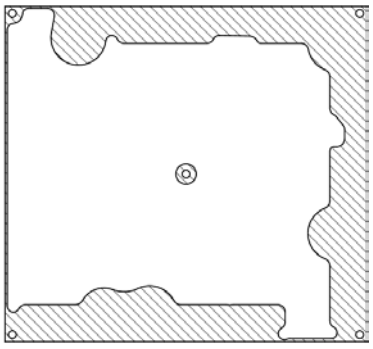
Outline Drawing







Heat Dissipation Surface



Dissipation Area
13.78 in²
(8890 mm²)

* Specifications are subject to change without prior notice by the manufacturer

Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ±0.01 IN
   .XXX ±0.005 IN
3. Weight: Approx. 37 Oz (1050gr)
4. Parasolide 3D module is available for download on site.

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