M8253 SERIES

DC/DC POWER SUPPLY

PRODUCT HIGHLIGHTS

- MINIATURE
- HIGH DENSITY
- DUAL OUTPUT
- DC/DC CONVERTER
- UP TO 200W

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Amphenol
MILITARY HIGH SPEED

M8253 Series– DC/DC Power Supply

Applications

Military, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- External synchronization capability
- TTL logic enable
- EMI filters included
- Non-latching protections:
  - Overload/short-circuit
  - Input under/over lockout
  - Over temperature

Environmental Conditions

Meets or exceeds MIL-STD-810D

Temperature:
Operating: –55 °C to +85 °C (baseplate)
Storage: –55 °C to +125 °C

Reliability

At least 150,000 hours calculated IAW MIL-HDBK-217F at +85 °C baseplate, ground fix conditions.

Electrical Specifications

DC INPUT

Normal voltage range: 18 to 48 V_{DC}

Abnormal transient protection:
No damage (may shut down and restart)
IAW MIL-STD-1275A (100 V / 50 ms) and
MIL-STD-704A (80 V for 0.1 s)

Efficiency: up to 87%

EMC: Designed to meet* MIL-STD-461F CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103

Isolation:
Input to Output: 200 V_{DC}
Input to Case: 200 V_{DC}

DC OUTPUT (floating)

Voltage regulation: Up to ±1% (no load to full load, –55 °C to +85 °C)

Ripple and Noise: 50 mV_{p-p}, typical (max. 1%)

Current limiting:
Continuous protection for unlimited time

Over voltage protection:
Secondary active protection and passive transorb on outputs.

Over temperature protection:
Shutdown if baseplate temperature exceeds +105 °C ± 5 °C. Automatic recovery upon cooldown to below +95 °C ± 5 °C

Isolation:
Output to Case: 100 V_{DC}

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Pin Assignment

Option A:

Connector type: M55302/61-A36 or eq.

Mating connector type:

- M55302/65-36S (removable crimp pins, turning jackset)
- M55302/65-36H (removable crimp pins, hex turning jackset)

(other possibilities exist)

Pin No.	Function
9, 10, 27, 28	INPUT
11, 12, 29, 30	INPUT RTN
8	SIGNAL RTN *
6	SYNC
7	INHIBIT
13, 14, 15, 16, 33	OUT1
17, 18, 34, 35, 36	OUT 1 RTN
32	OUT 1 SENSE
31	OUT 1 SENSE RTN
1, 2, 19, 20, 21	OUT 2
3, 4, 5, 22, 23	OUT 2 RTN
25	OUT 2 SENSE
24	OUT 2 SENSE RTN
26	CHASSIS

* INHIBIT and the SYNC signals are referenced to SIGNAL RTN.

Option B:

Connector type: M55302/61-A36 or eq.

Mating connector type:

- M55302/65-36S (removable crimp pins, turning jackset)
- M55302/65-36H (removable crimp pins, hex turning jackset)

(other possibilities exist)

Pin No.	Function
7, 8, 25, 26	VIN (+)
9, 10, 27, 28	VIN RTN (-)
12, 13, 14, 15, 30, 31, 32	OUTPUT 1 (+)
16, 17, 18, 33, 34, 35, 36,	OUTPUT 1 RTN (-)
11	OUTPUT 1 SENSE (+)
29	OUTPUT 1 SENSE RTN (-)
1,2, 19	OUTPUT 2 (+)
3,20,21	OUTPUT 2 RTN (-)
23	OUTPUT 2 (+)
22	OUTPUT 2 RTN (-)
4	SYNC
5	INHIBIT
6	SIGNAL RTN
24	CHASSIS

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.

SYNC signal

The SYNC signal is used to allow the power supply frequency to sync with the system frequency.
The system frequency can be 250 kHz ± 10 kHz.
When not connected, the power supply will work at internal frequency, close to 250 kHz ± 10 kHz.

SIGNAL RTN

The ***SIGNAL RTN*** is used as grounding for ***SYNC*** and ***INHIBIT*** signals.
This is referenced to the ***INPUT RTN*** pin.

SENSE #

The ***SENSE #*** is used to achieve accurate load regulation at the load terminals. This is done by connecting these pins directly to their respective load terminals. The use of remote sense has a limit of voltage dropout between converter's output and load terminals of 4%-8% from voltage output.
When not used connect ***SENSE #*** to ***OUT #*** and ***SENSE # RTN*** to ***OUT # RTN*** for each of the outputs.

CHASSIS

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

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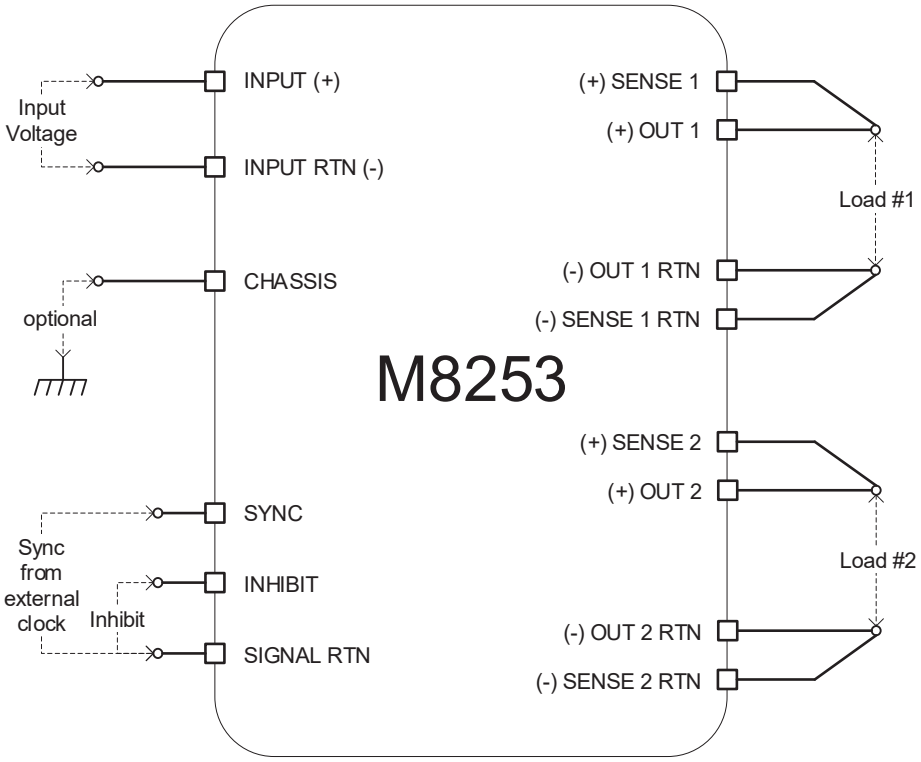
Typical Connection Diagram



M8253 Standard configuration table:

Part number	Input	Outputs		Output Power
	Voltage range	Output #1	Output #2	
M8253-100	18 to 48 VDC	2.5V/25A	3.3V/10A	95.5W
M8253-101	18 to 48 VDC	3.3V/25A	5V/10A	132.5W
M8253-102	18 to 48 VDC	5V/10A	12V/12A	194W
M8253-103	18 to 48 VDC	28V/5A	5V/12A	200W
M8253-104	18 to 48 VDC	28V/5A	12V/5A	200W
M8253-105	18 to 48 VDC	48V/3A	5V/10A	194W

Other options available – consult factory

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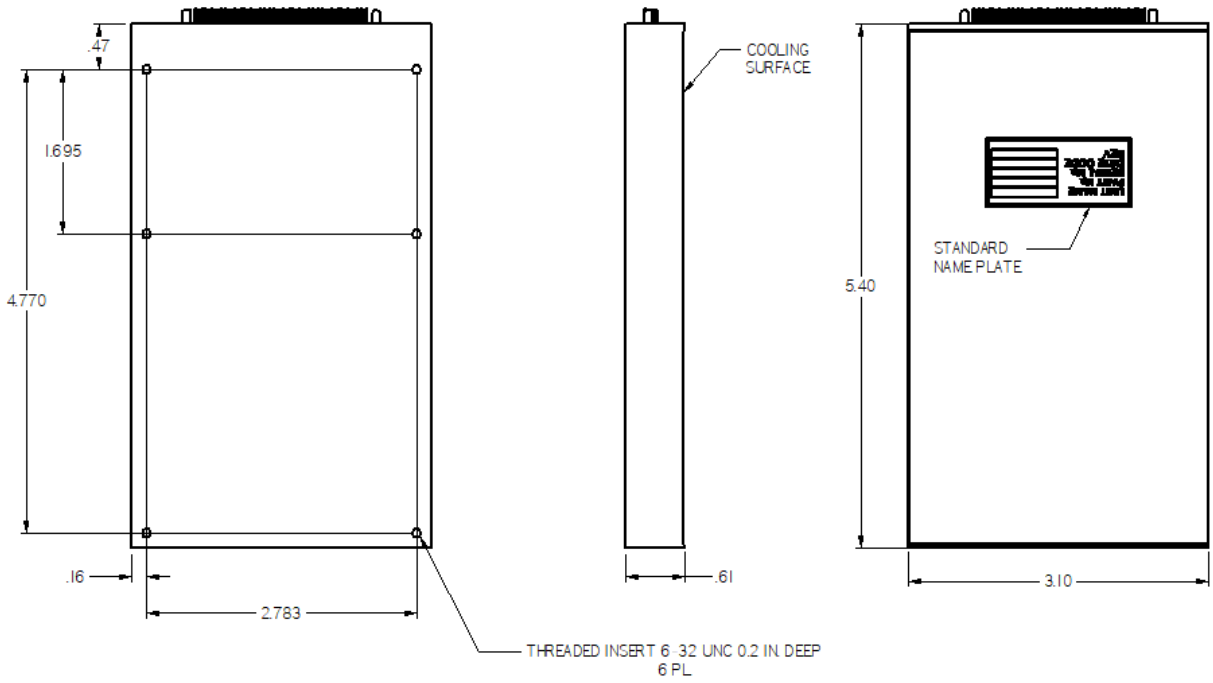
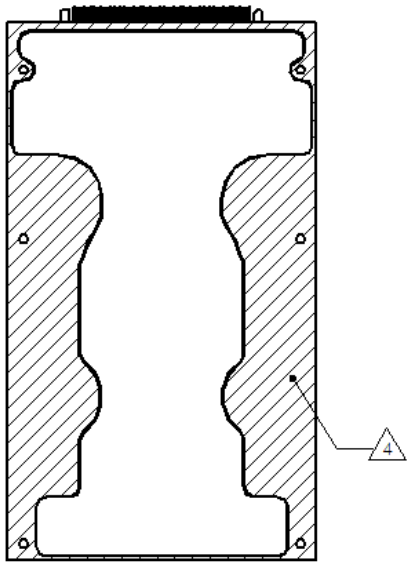
Outline Drawing





BOTTOM VIEW

Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ± .02 in
   .XXX ± .01 in
3. Weight: Approx. 10.23 ± 0.35 oz (290 ±

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Note: Specifications are subject to change without prior notice by the manufacturer

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