

M811 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- MINIATURE, HIGH DENSITY
- EIGHT OUTPUTS
- UP TO 145 W
- DC/DC POWER SUPPLY

Applications

Military (airborne, mobile, shipboard), Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Outputs groups isolation
- Fixed switching frequency (~250 kHz)
- External synchronization capability
- Remote inhibit
- EMI filters included
- Non-latching protections:
- Overload / short-circuit protection
- Input under/over-voltage lockout
- Over temperature shutdown

Environmental Conditions

Meets or exceeds MIL-STD-810G

Temperature:

Operating -55 °C to +85 °C (at baseplate) Storage
-55 °C to +125 °C

Reliability

150,000 hours, calculated IAW MIL-HDBK- 217F
Notice 2 at +85°C baseplate, Ground Fixed
conditions.

Electrical Specifications

DC INPUT

Voltage range: 18 to 70 V_{DC}

Transient protection: protected against abnormal
surge IAW MIL-STD-1275A (100 V
/ 50 ms) and MIL-STD-704A (80 V / 0.1 s) Efficiency:

Up to 80%

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 OUTPUTS

Voltage regulation:

≤ ±1% (low to high line voltage, no load to
full load, -55 °C to +85 °C)

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

Overcurrent protection:

current limit (CC) beyond threshold.

Over voltage protection: Passive protection. Over

temperature protection:

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

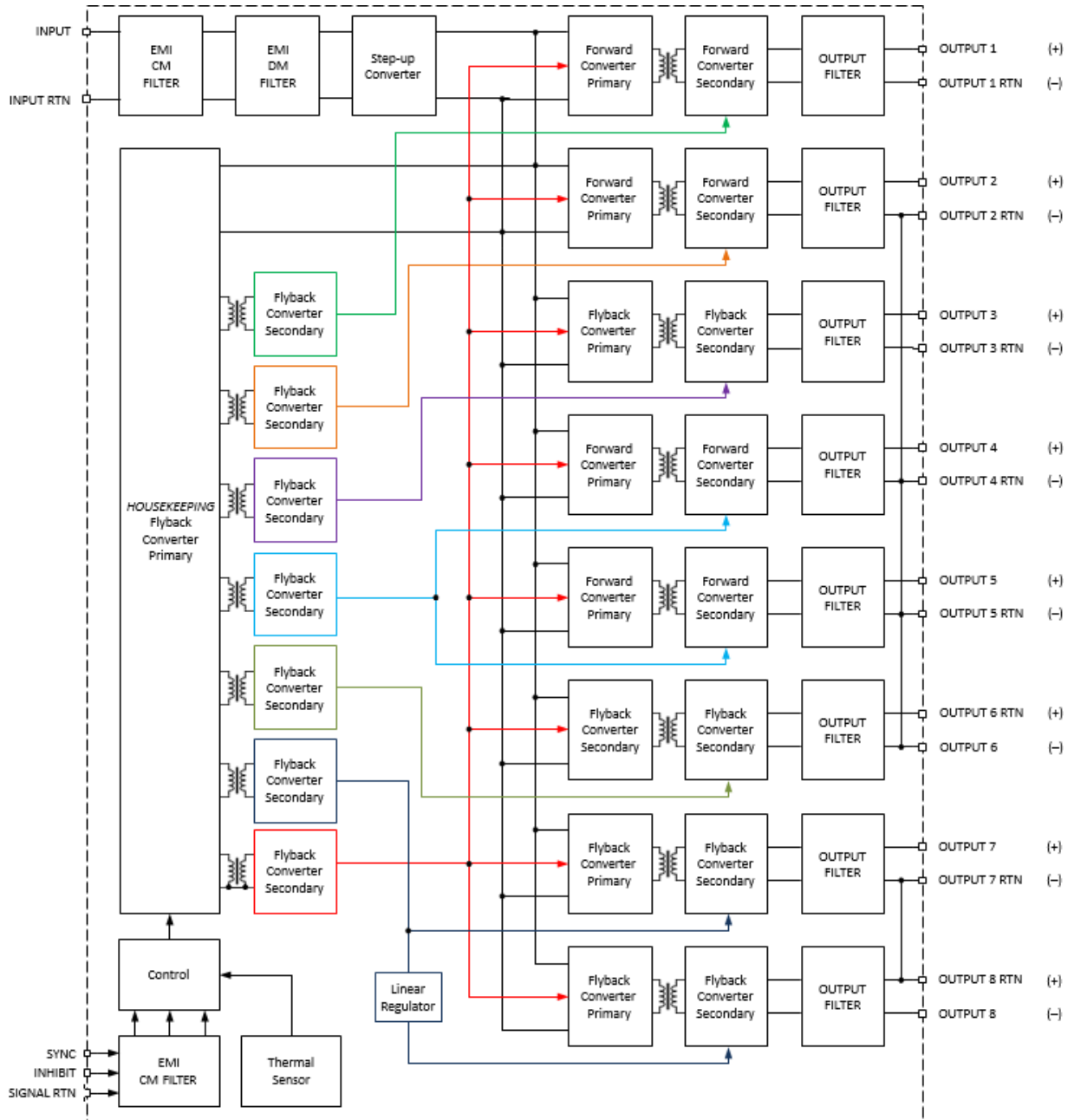
Isolation:

Output and Case: 100 V_{DC}

*EMC compliance achieved when tested with 5 µH LISNs , shielded harness and static resistive load.

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Operational Block Diagram



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Outputs Configuration Range

Output #	Voltage Range	Current Range	Power Range
1	2.5 to 28 V _{DC}	0 to 3 A	0 to 40 W
2	1.5 to 28 V _{DC}	0 to 4 A	0 to 40 W
3	2.5 to 28 V _{DC}	0 to 3 A	0 to 20 W
4	2.5 to 28 V _{DC}	0 to 5 A	0 to 30 W
5	2.5 to 28 V _{DC}	0 to 8 A	0 to 30 W
6	1.25 to 28 V _{DC}	0 to 5 A	0 to 15 W
7	2.5 to 28 V _{DC}	0 to 2.5 A	0 to 15 W
8	-2.5 to -28 V _{DC}	0 to 2.5 A	0 to 15 W
Total			0 to 145 W

Outputs Isolation (Ground RTN groups)

- All outputs are isolated from the input.
- Outputs are separated into the following four galvanically isolated groups:
 - Group A: Output #1
 - Group B: Output #2, #4, #5 and #6
 - Group C: Output #3
 - Group D: Outputs #7 and #8

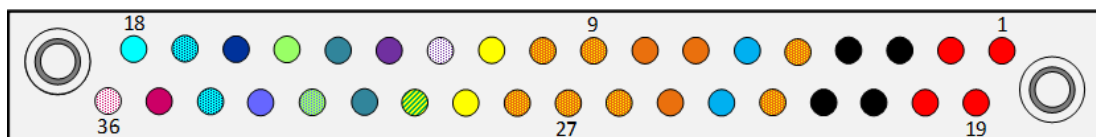
Pin Assignment

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Connector type: M55302/61-A36 or eq.

Mating connector type: M55302/62-A36M (solder cup termination) or M55302/66-32M (#22 AWG crimp termination) or eq.

Pin #	Function	P		Pin #	Function	P		Pin #	Function	P	
1	INPUT	+	●	13	OUT 1	+	●	25	OUT 5	+	●
2	INPUT	+	●	14	OUT 2	+	●	26	OUT 2,4,5,6 RTN	-	●
3	INPUT RTN	-	●	15	INHIBIT	+	●	27	OUT 2,4,5,6 RTN	-	●
4	INPUT RTN	-	●	16	OUT 8	-	●	28	OUT 2,4,5,6 RTN	-	●
5	OUT 2,4,5,6 RTN	-	●	17	OUT 7,8 RTN		●	29	OUT 4	+	●
6	OUT 6	+	●	18	OUT 7	+	●	30	CHASSIS		●
7	OUT 5	+	●	19	INPUT	+	●	31	OUT 2	+	●
8	OUT 5	+	●	20	INPUT	+	●	32	SIGNAL RTN	-	●
9	OUT 2,4,5,6 RTN	-	●	21	INPUT RTN	-	●	33	SYNC	+	●
10	OUT 2,4,5,6 RTN	-	●	22	INPUT RTN	-	●	34	OUT 7,8 RTN		●
11	OUT 4	+	●	23	OUT 2,4,5,6 RTN	-	●	35	OUT 3	+	●
12	OUT 1 RTN	-	○	24	OUT 6	+	●	36	OUT 3 RTN	-	○



Signals Description

INHIBIT (pin 31)

The ***INHIBIT*** signal is used to turn the power supply ON and OFF.

TTL "1" or OPEN – Power supply active (output turned on).

TTL "0" or SHORT to ***SIGNAL RTN*** – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected.

This signal is referenced to ***SIGNAL RTN*** (pin 32)

SYNC (pin 33)

The ***SYNC*** signal is used to synchronize the power supply's switching frequency to system's clock. If this function is not required, leave this pin unconnected - the power supply will use its internal clock.

External clock frequency can be between 240 kHz to 260 kHz, with duty cycle of 40% to 60%.

Valid

clock voltage level is between 5 to 12 V.

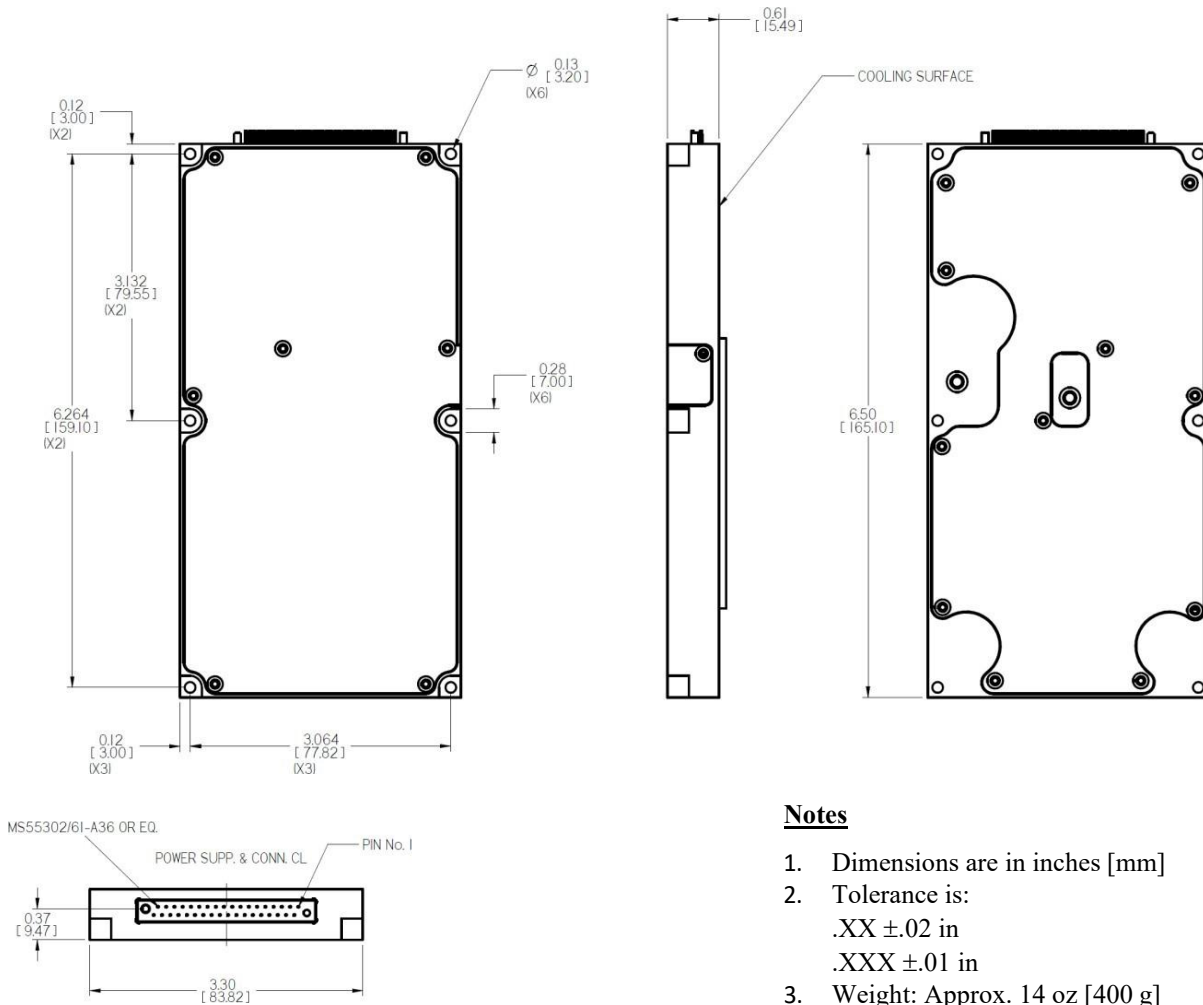
This signal is referenced to ***SIGNAL RTN*** (pin 32)

SIGNAL RTN (pin 32)

Both ***INHIBIT*** and ***SYNC*** signals are referenced to this pin. This pin is referenced to ***INPUT TN*** (pins 3, 4, 21 and 22).

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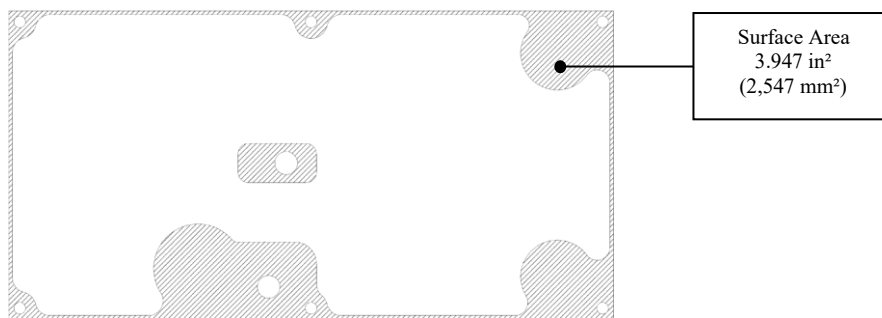
Outline Drawing



Notes

1. Dimensions are in inches [mm]
2. Tolerance is:
 .XX \pm .02 in
 .XXX \pm .01 in
3. Weight: Approx. 14 oz [400 g]

Heat Dissipation Surface Area



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