

M191 SERIES

AC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- **MINIATURE**
- **HIGH DENSITY**
- **FIVE OUTPUTS**
- **3-PHASE AC/DC CONVERTER**
- **UP TO 300W**

Applications

Military, Airborne, Mobile, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Output groups float from each other
- Fixed switching frequency
- EMI filters included
- Remote inhibit (TTL Level, Floating)
- Turn-on sequencing (option)
- BIT signal indicates outputs' status
- Limited inrush current
- Non-latching protections:
 - Overload / short-circuit
 - Over Temperature

Environmental Conditions

Meets or exceeds MIL-STD-810D

- Temperature:
 - Operating: -55°C to $+85^{\circ}\text{C}$
 - (Colling surface) Storage: -55°C to $+85^{\circ}\text{C}$
- Random Vibration IAW MIL-STD-810D Method 514.3, Procedure I, Category 7B Fig. D

Frequency [Hz]	PSD [g^2/Hz]	Remarks
15 to 120	0.04	
120 to 300	Rise to 0.04	4dB/oct
300 to 1000	0.14	
1000 to 200	Decrease by 6dB/oct	

Reliability

100,000 hours, calculated per MIL-STD-217F

Notice 2 at $+85^{\circ}\text{C}$ (Colling surface), Ground Fixed.

Electrical Specifications

INPUT

AC version input voltage range:

Steady-state: 103 to

$127 V_{\text{rms},\text{L-n}}$, 400 Hz, 3-Phase

Transients: $80 V_{\text{rms}}$ / 100 ms;

$180 V_{\text{rms}}$ / 100 ms

DC version input voltage range:

Steady-state: 220 to $350 V_{\text{DC}}$

Transients: $160 V_{\text{DC}}$ / 100 ms;

$440 V_{\text{DC}}$ / 100 ms Efficiency:

up to 82%

EMC: Designed to meet*

MIL-STD-461F CE102,

CS101, CS114, CS115,

RS102, RS103

Isolation:

Input to Output: $> 10 M\Omega$ @ $500 V_{\text{DC}}$

Input to Chassis: $> 10 M\Omega$ @ $500 V_{\text{DC}}$

DC OUTPUTS (All floating from each other)

Output voltage regulation:

Less than $\pm 3\%$ (0 to full load, -55°C to $+85^{\circ}\text{C}$)

Ripple and Noise: $50 \text{ mV}_{\text{p-p}}$,

typical (max. 1% of typical output voltage)

Current limiting:

Continuous

protection for

unlimited time Over-

Voltage Protection:

Passive transorbs on outputs.

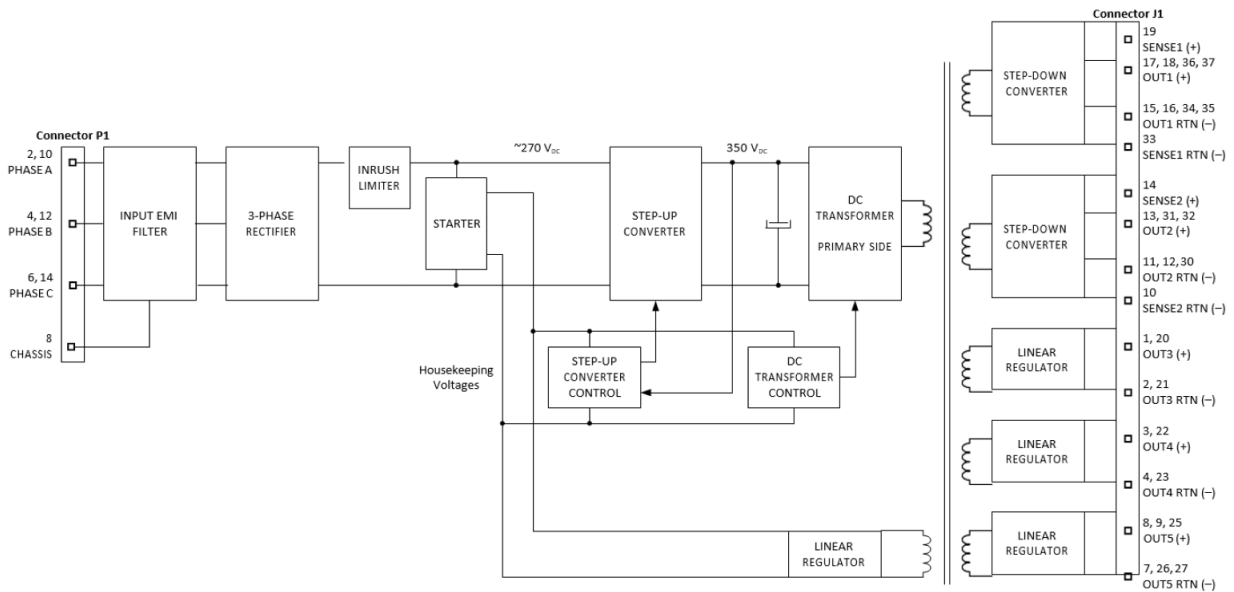
Isolation:

Output to Chassis: $> 1 M\Omega$ @ $100 V_{\text{DC}}$

* Compliance achieved with shielded cables.

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Operational Block Diagram



Outputs Range

Output #	Voltage Range	Current Range	Power Range
1	3.3 to 12 V _{DC}	0 to 15 A	0 to 135 W
2	3.3 to 12 V _{DC}	0 to 10 A	0 to 50 W
3	3.3 to 24 V _{DC}	0 to 4 A	0 to 60 W
4	3.3 to 24 V _{DC}	0 to 4 A	0 to 60 W
5	3.3 to 28 V _{DC}	0 to 9 A	0 to 230 W
Total			0 to 300 W

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Pin Assignment

Input Connector (P1)

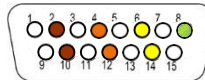
Connector type: M24308/24-38F or eq.

Mating connector type: M24308/2-2F or eq.

Pin No.	Function	
1	N.C.	
2	Phase A	●
3	N.C.	
4	Phase B	●
5	N.C.	

Pin No.	Function	
6	Phase C	●
7	N.C.	
8	Chassis	●
9	N.C.	
10	Phase A	●

Pin No.	Function	
11	N.C.	
12	Phase B	●
13	N.C.	
14	Phase C	●
15	N.C.	



Output Connector (J1)

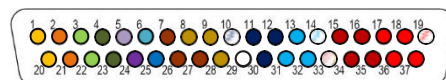
Connector type: M24308/23-40F or eq.

Mating connector type: M24308/4-4F or eq.

Pin No.	Function		P
1	OUT 3	●	+
2	OUT 3 RTN	●	-
3	OUT 4	●	+
4	OUT 4 RTN	●	-
5	BIT	●	+
6	INHIBIT	●	+
7	OUT 5 RTN	●	-
8	OUT 5	●	+
9	OUT 5	●	+
10	SENSE 2 RTN	○	-
11	OUT 2 RTN	●	-
12	OUT 2 RTN	●	-
13	OUT 2	●	+

Pin No.	Function		P
14	SENSE 2	○	+
15	OUT 1 RTN	●	-
16	OUT 1 RTN	●	-
17	OUT 1	●	+
18	OUT 1	●	+
19	SENSE 1	○	+
20	OUT 3	●	+
21	OUT 3 RTN	●	-
22	OUT 4	●	+
23	OUT 4 RTN	●	-
24	BIT RTN	●	-
25	INHIBIT RTN	●	-
26	OUT 5 RTN	●	-

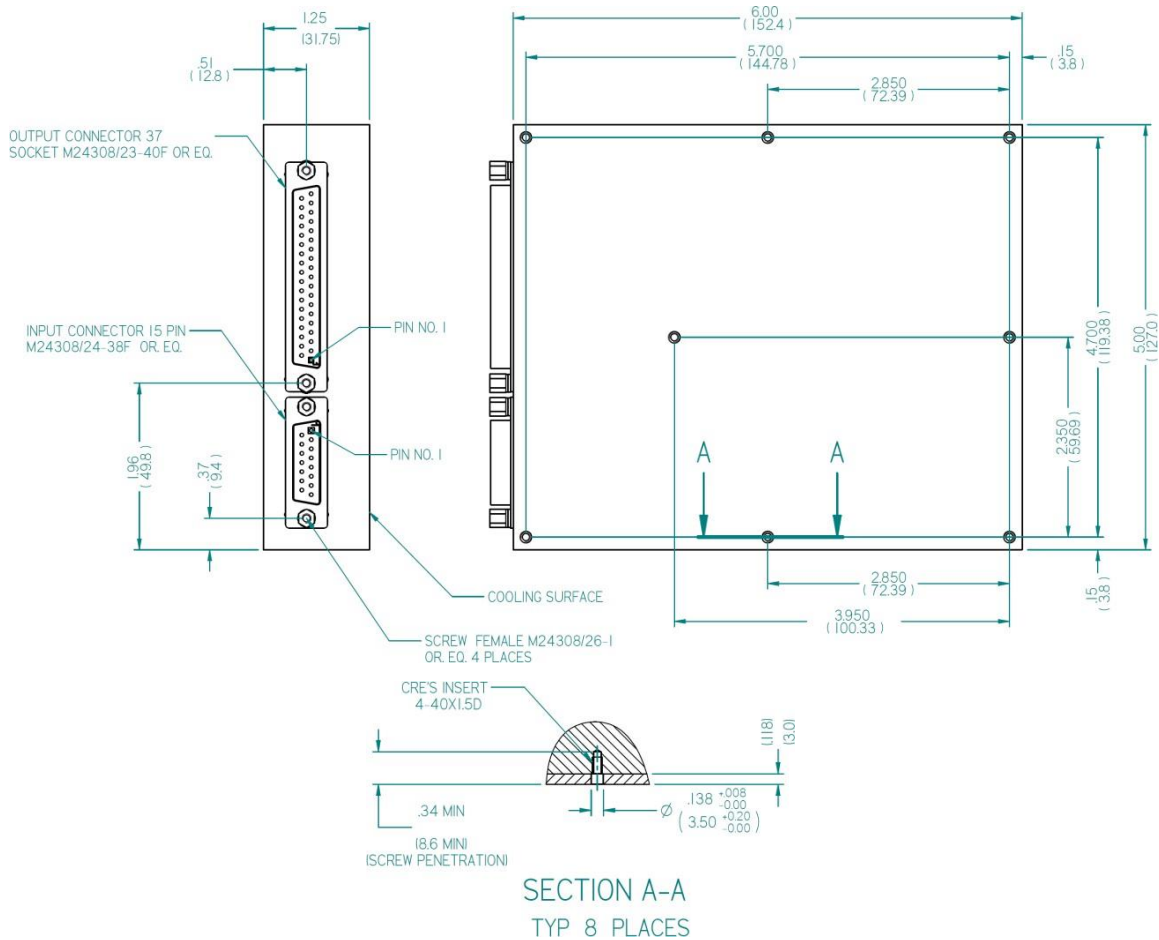
Pin No.	Function		P
27	OUT 5 RTN	●	-
28	OUT 5	●	+
29	N/C		
30	OUT 2 RTN	●	-
31	OUT 2	●	+
32	OUT 2	●	+
33	SENSE 1 RTN	○	-
34	OUT 1 RTN	●	-
35	OUT 1 RTN	●	-
36	OUT 1	●	+
37	OUT 1	●	+



Note: All pins with identical function and/or designation should be connected together for best performance.

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Outline Drawing



Notes

1. Dimensions are in inches (mm)
2. Tolerance is:
 .XX ±.02 in.
 .XXX ±.01 in.
3. Weight: Approx. 4.4 lbs (2 kg)

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