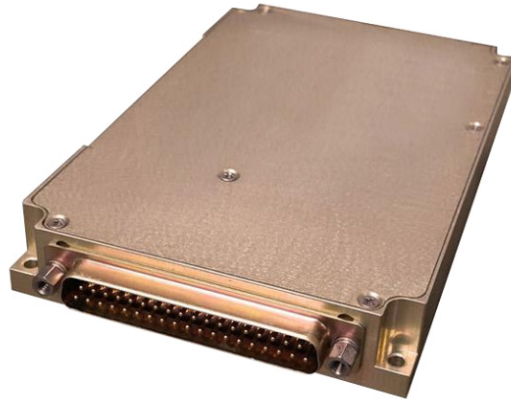


M6201 SERIES

DC/DC POWER SUPPLY



DESCRIPTION

The M6201 military power supply is a rugged single output DC to DC converter which accepts an 200 - 350VDC input voltage range and provides a single DC output from 1.8 to 60V at up to 200W. Custom outputs available upon request and the unit is Designed to meet military standards, MIL-STD-810, MIL-STD-461.

FEATURES

- High efficiency
- Wide input voltage range
- Input / Output isolation
- Remote sense
- Remote inhibit (On/Off)
- Fixed switching freq. (250kHz)
- External sync. capability
- EMI filters included
- Inrush current limiter circuit
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

HOW TO ORDER

Part Number	CF-02EM6201	DC/DC Power Supply
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ELECTRICAL SPECIFICATIONS:

DC INPUT		
DC Input Voltage range: 200 to 350VDC	DC Output Voltage range: 1.8 to 60VDC Current range: 0 to 36A Power range: 0 to 200W	Isolation Input to Output: 500VDC Input to Case: 500VDC Output to Case: 100VDC
Output Voltage Regulation: Better than $\pm 1\%$ (no load to full load, -55°C to $+85^{\circ}\text{C}$ and over input voltage range).	Efficiency: Typical: 88-90% (full load, nominal line voltage, room temperature)	EMC: Designed to meet* MIL-STD461F: CE101, CE102, CS101, CS114, CS115, RE101, RE102, RS101RS103
Ripple and Noise: Better than 50mVp-p, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly.	Transient Over-and undershoot: Output resistance at load change of 50% to 100% is 30 to 200m Ω (depending on output voltage). Output back to steady state within 300 to 50 μs .	Turn on Transient: No voltage overshoot during power on

DC OUTPUT (floating)		
Line/Load regulation: Less than 1% (no load to full load, -55°C to $+85^{\circ}\text{C}$)	Ripple and Noise: 50mVp-p, typical (max. 1%)	Current limiting (Hiccup): Continuous protection for unlimited time
Over voltage protection: Electronic shutdown with automatic recovery and a passive transistor on output.	Over temperature protection: Shutdown at baseplate temperature of $+105^{\circ}\text{C}$ ($\pm 5^{\circ}\text{C}$) Automatic recovery at baseplate temperature lower than $+95^{\circ}\text{C}$ ($\pm 5^{\circ}\text{C}$)	Isolation: 200V between Output and Input 100V between Output and Case

PRODUCT SPECIFICATIONS:

PROTECTIONS		
Input	Output	General
Inrush Current Limiter Peak value of up to 5 times maximum input current for inrush currents lasting over 50µs.	Active Over-Voltage Protection: Internal control protects unit (no damage) 110% ±5% of nominal voltage.	Over-Temperature Protection: Unit shuts down if baseplate's temperature rises above +105°C ±5°C
Under-Voltage Lock-Out: Output shuts down when input voltage is below 180 ±20VDC	Passive OverVoltage Protection: Transorb on output, selected at 120% ±10% of nominal voltage.	Unit automatically recovers when baseplate's temperature falls below +95°C ±5°C.
Over-Voltage Lock-Out: Output shuts down if input voltage is above 370 ±10VDC	Current Limiting (Hiccup) Indefinite protection. Threshold set at 120% ±15% of nominal current.	

Environmental Conditions		
Temperature: Operating: -55°C to +85°C (at Altitude Method 500.4 Salt Fog Method 509.4 baseplate) Storage: -55°C to +125°C	Altitude: Method 500.4 Procedure I: Up to 70000ft. Procedure II: Up to 20000ft.	Salt Fog: Method 509.4
Humidity: Method 507.4 Procedure I Up to 95% RH	Vibration (random): Method 514.5 Category 4 - General minimum integrity exposure IAW Figure 514.5C-17 1 hour per axis.	Shock: Method 516.5 Procedure I 30g, 11ms terminal peak sawtooth

PIN ASSIGNMENT:

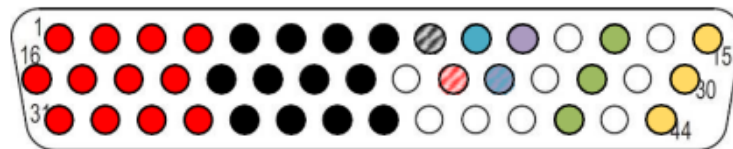
Connector type: M24308/24-75F or eq.

Mates with: M24308/2-13F or eq.

Pin No.	Function	P	
1	OUT	+	●
2	OUT	+	●
3	OUT	+	●
4	OUT	+	●
5	OUT RTN	-	●
6	OUT RTN	-	●
7	OUT RTN	-	●
8	OUT RTN	-	●
9	SENSE RTN	-	●
10	INHIBIT	+	●
11	SYNC IN	+	●
12	N.C.		
13	IN RTN	-	●
14	N.C.		
15	IN	+	●

Pin No.	Function	P	
16	OUT	+	●
17	OUT	+	●
18	OUT	+	●
19	OUT	+	●
20	OUT RTN	-	●
21	OUT RTN	-	●
22	OUT RTN	-	●
23	OUT RTN	-	●
24	N.C.		
25	SENSE	+	●
26	SIGNAL RTN	-	●
27	N.C.		
28	IN RTN	-	●
29	N.C.		
30	IN	+	●

Pin No.	Function	P	
31	OUT	+	●
32	OUT	+	●
33	OUT	+	●
34	OUT	+	●
35	OUT RTN	-	●
36	OUT RTN	-	●
37	OUT RTN	-	●
38	OUT RTN	-	●
39	N.C.		
40	N.C.		
41	N.C.		
42	IN RTN	-	●
43	N.C.		
44	IN	+	●



FUNCTIONS AND SIGNALS:

INHIBIT

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

To turn the power supply OFF, apply a TTL “0” signal or SHORT to SIGNAL RTN.

To turn the power supply ON, apply a TTL “1” signal or leave this pin OPEN. If not used (always ON), leave this pin OPEN.

This signal is referenced to SIGNAL RTN.

SYNC IN

The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system

frequency should be 250kHz \pm 10kHz.

When not connected the power supply will work at 250kHz \pm 10kHz. This signal is referenced to SIGNAL RTN.

SIGNAL RTN

Both INHIBIT and SYNC IN signals are referenced to this pin. This pin is floating from both input and output.

SENSE

The SENSE line is used to achieve accurate voltage regulation at load terminals. To use this feature, connect this pin directly to load’s positive terminal.

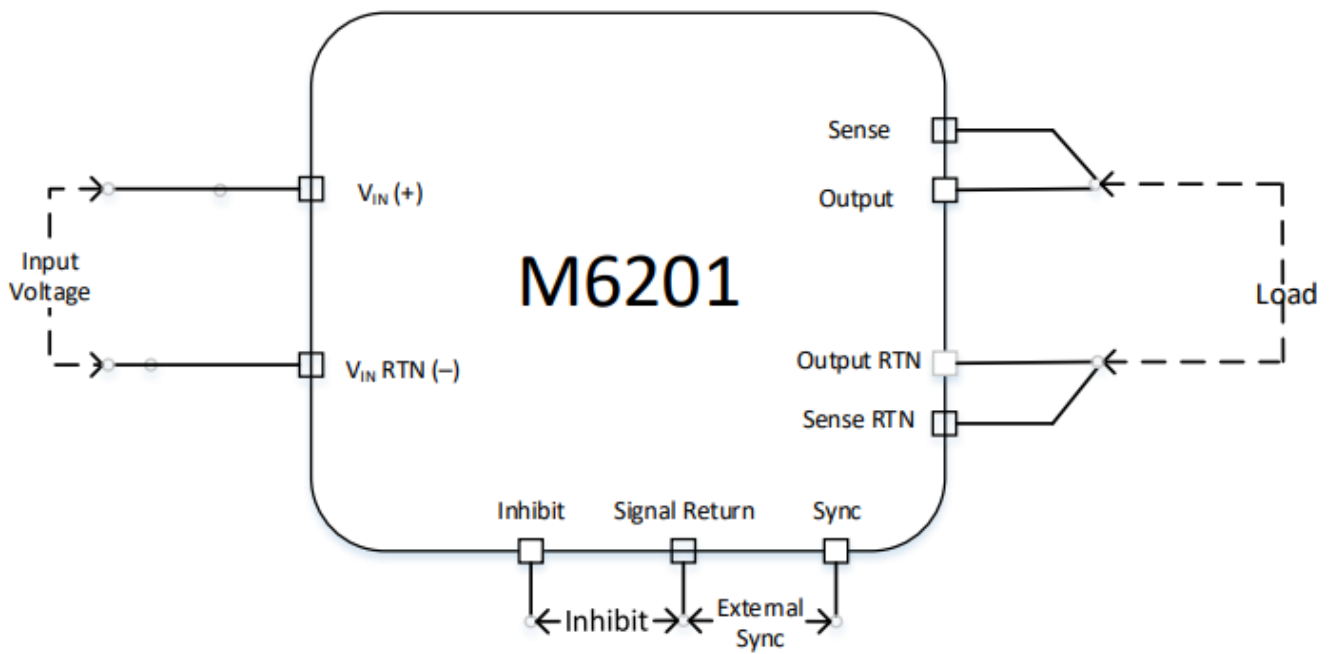
If this function is not required, short SENSE pin to OUT pins as close as possible to the unit.

SENSE RTN

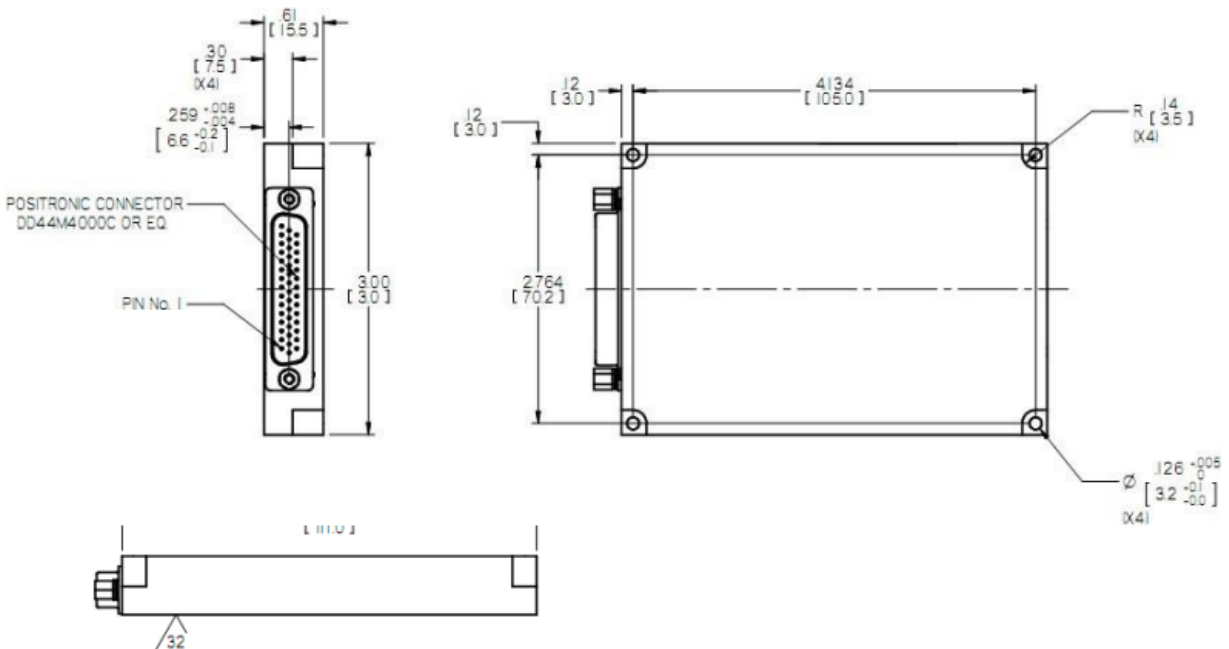
The SENSE RTN line is used to achieve accurate voltage regulation at load terminals. To use this feature, connect this pin directly to load’s negative terminal.

If this function is not required, short SENSE RTN pin to OUT RTN pins as close as possible to the unit. When not used, connect SENSE to OUT and SENSE RTN to OUT RTN

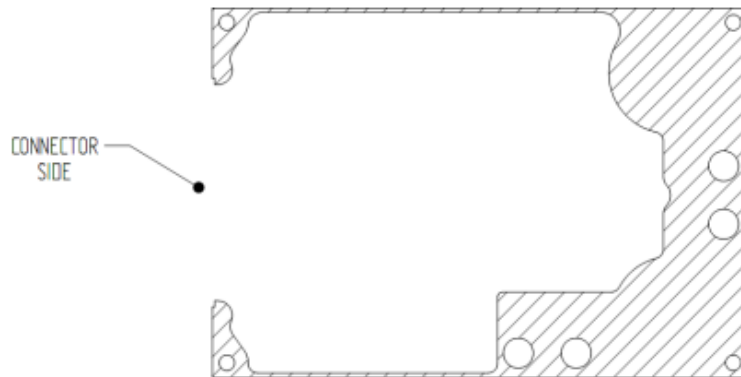
Typical Connection Diagram:



OUTLINE DRAWING:



HEAT DISSIPATION SURFACE:



Dissipation
Area 3.6534 in²
[2357 mm²]

Notes

1. Dimensions are in inches
2. Tolerance is:
.XX ± 0.01 in
.XXX ± 0.005 in
3. Weight: 8.11 oz (230 g)

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2. Tolerance is:
.XX ± 0.01 in
.XXX ± 0.005 in
3. Weight: Approx. 8.11 oz (230 g)

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PRELIMINARY

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Amphenol

MILITARY HIGH SPEED

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