

150 Watt, Single Output Military Grade DC to DC Converter

Product Description

This unit is a 150 watt, single output, military grade dc to dc converter designed for electronic systems operating in harsh environments (subject to abnormal shock and vibration) and extreme temperature conditions. It is conduction cooled providing a -55° to +90° C operating temperature range. This highly reliable design will meet or exceed all applicable military standards including MIL-STD-810D & MIL-STD-461D.

Product Features

- Meets MIL-STD-704A/704D
- Meets MIL-STD-1275A
- Meets MIL-STD-461C
- Meets MIL-STD-810D
- Wide Range Input: 18-48Vdc
- Operating Temperature Range: -55° to +90° C



DC Input

- Voltage Input Range: 28VDC (18-48Vdc input range)

Output Selection Guide

Model #:	Voltage	Max Current	Regulation	Ripple
M7228-1	3.3Vdc	38.6 Amps	±3%	50mV pk-pk
M7228-2	5.0Vdc	27.0 Amps	±3%	50mV pk-pk
M7228-3	9.0Vdc	15.8 Amps	±1%	120mV pk-pk
M7228-4	12Vdc	12.5 Amps	±1%	120mV pk-pk
M7228-5	15Vdc	10.0 Amps	±1%	150mV pk-pk
M17228-6	19Vdc	7.8 Amps	±1%	150mV pk-pk
M7228-7	24Vdc	6.2 Amps	±1%	240mV pk-pk
M7228-8	28Vdc	5.3 Amps	±1%	240mV pk-pk
M7228-9	36Vdc	4.1 Amps	±1%	240mV pk-pk
M7228-10	48Vdc	3.1 Amps	±1%	240mV pk-pk

Note: Alternate output voltages are available, consult factory for availability.

DC Output Characteristics (floating)

- Output Power: 150 Watts (maximum continuous power, may require derating for some low voltage outputs)
- Line Regulation: $\pm 3.0\%$ Typical
- Load Regulation: $\pm 2.0\%$ Typical (No load to full load; nominal input)
- Output Ripple/Noise: 1% Typical (pk-pk; nominal input; full load; 20MHz bandwidth)
- Set Point Accuracy: $\pm 1.0\%$ of Output Voltage (Nominal input; full load; 25°C)
- Transient Response: Output voltage returns to within 1% in less than 2.5mS for a 50% load change and the peak transient does not exceed 5%.
- Overshoot: Turn-on and turn-off overshoot should not exceed 5% over nominal voltage.

Electrical Characteristics

- Switching Frequency: 250KHz Fixed
- Efficiency: 85% Typical (Measuring at 28Vdc and at full load)
- Isolation Voltage: 500V between input and output. 500V between input and case.
- Temperature Regulation: $\pm 2.0\%/^{\circ}\text{C}$ ($\pm 0.005\%/^{\circ}\text{C}$ max; over operating temp range)

Protection

- Over Current Limit: ~ 115 to 120% of maximum rating. Hiccup, continuous.
- Over-Voltage Setpoint: $\sim 115\%$ of nominal main. Unit latched 1 minute, recycle AC input to reset at 25°C.
- Short Circuit: Auto-Recovery after short circuit condition is removed.
- Over temperature Protection: Shutdown at baseplate temperature of $+105^{\circ}\text{C}$ ($\pm 5^{\circ}\text{C}$) Automatic recovery at baseplate temperature lower than $+95^{\circ}\text{C}$ ($\pm 5^{\circ}\text{C}$)

Environmental

- Operating Temperature: -55° to $+9^{\circ}$ C (baseplate)
- Storage Temperature: -55° to 125° C
- Operating Humidity: 5% to 90% RH, Non-condensing
- Storage Humidity: 5% to 95% RH, Non-condensing
- Operating Altitude: Sea-level to 40,000 ft. in pressurized environment
- Shock & Vibration Standards: MIL-STD-810D
- Conducted EMI: MIL-STD-461D
- Cooling: Conduction cooled, coldplate mounting

Reliability

- 150,000 hours, calculated per MIL-STD-217F at $+85^{\circ}\text{C}$ baseplate, ground fixed.

Mechanical

- Outline Dimensions: ~0.61" X 2.8" X 4.4" (H X W X L) – not including I/O connector
- Weight: ~9.2 lbs. (265 grams)
- DC Input & Output Connector: 37 Pin D-Sub M24308/26-1 or equiv.

Additional Features, Controls or Alarms

- Remote External Synchronization Capability In/Out
- TTL Logic Enable
- Remote Sense
- Parallel Operation

Notes

- Product specifications subject to change without notice. All rights reserved.
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