

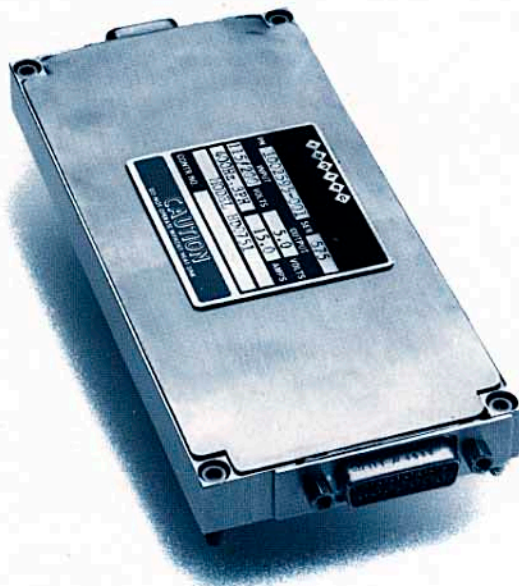
SERIES HD 7530

High Density Military Power Supplies

75 Watts

3 ϕ /400 Hz

SERIES HD 7530



Features

- 400 Hz three-phase or 270 VDC input
- 75-watt output
- Overcurrent foldback and assessment
- Overvoltage protection
- High efficiency
- MIL-C-24308 I/O connectors
- 95°C baseplate operating temperature
- Tri-Service qualified
- FULL-MIL components
- MTBF to 350,000 hours

Description

Rantec Series HD 7530 high-density power supplies, utilizing current mode, constant-frequency switching technology, individually provide output capability to 75 watts. Additionally, they may be directly paralleled with up to four identical units to provide redundant or extended capability. Full component derating, in accordance with NAVMAT P-4855-1A, is in effect at a baseplate temperature of 95°C.

Series HD 7530 interfaces with three-phase, 400 Hz or 270 VDC prime power in accordance with MIL-STD-704 and incorporates an internal EMI filter in compliance with MIL-STD-461C, Part 2, including CEO1. Capability is provided to externally synchronize the power supply switching frequency to a system clock. Series HD 7530 is field repairable.

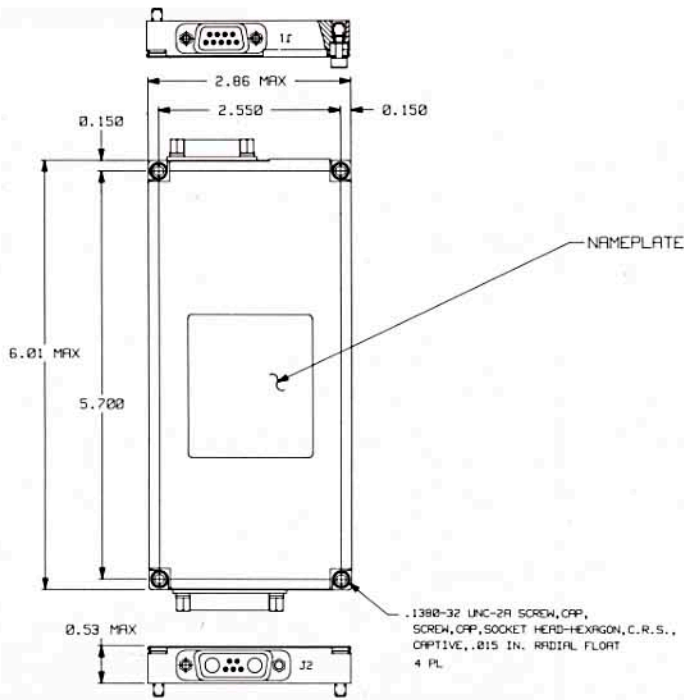
Rantec Series HD 7530 power supplies are qualified in accordance with the following applicable military specifications.

Specifications

- MIL-STD-704D Aircraft Electrical Power
- MIL-E-5400T Electric Equipment/General Aerospace
- MIL-E-16400G General Equipment/Specified for Naval Shipboard, Shore Communication and Navigational Equipment
- MIL-E-4158 General Electronic Equipment Specification
- MIL-STD-461C Electromagnetic Emission and Susceptibility Requirements
- MIL-STD-454J General Requirements for Electronic Equipment
- NAVMAT P4855-1A Naval Power Supply Reliability Design and Manufacturing Guidelines

r a n t e c

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Output Rating Table

Voltage	Current	Model
5V	15A	HD 7531
12V	6.3A	HD 7532
15V	5A	HD 7533
24V	3.1A	HD 7534
28V	2.7A	HD 7535

Recommended Mating Connector Table (Cannon or MIL-C-24308)

J1 (Input)	J2 (Output)
M24308/1-1 or /2-1	DAMM 7W2P or DAMAM 7W2P

Note: All weights and dimensions are for reference only. Contact factory for latest details.

Specifications

Input

185-215 VAC L-L, 3 ϕ 400 Hz or 250-290 VDC (reverse polarity protected)

Input Power Characteristics

To MIL-STD-704D. Including transients of 138 to 312 volts.

Output Ratings

See output rating table for details. Other V/A combinations within same power rating available. Consult factory.

Voltage adjust (Internal)

$\pm 0.5V$ or $\pm 5\%$ of nominal output voltage, whichever is greater. Set point accuracy 0.2% of the output voltage.

Dynamic load regulation

Maximum deviation of 5% from the output voltage for a load change of 0.75 FL to FL in either direction. Recovery within 100 μ s.

Static Regulation, line and load combined

$\pm 1\%$ maximum

Ripple and Noise, p-p Maximum (10 Hz to 20 MHz)

75mV or 0.5% of the nominal output voltage, whichever is greater.

Output Overshoot:

5% maximum turn-on or turn-off overshoot. Power supplies have in-rush surge limiting protection and soft start circuitry.

Remote sense

Compensates for output line loss of up to 0.3V or 3% of nominal output voltage, whichever is greater. Upper output voltage adjust range is reduced by line loss compensation.

Remote on/off

Open collector compatible input referenced to negative output terminal. "LO" turns supply off, "HI" (or open) turns supply on within 10 ms (from a standby condition).

Overload Protection

The output is protected against overload and short circuit. Limits overload to 130% of full rated current. Output recovers automatically after load fault is removed.

Overvoltage protection

Shutdown type. Trip-point set at maximum of 1.5V or 20% above nominal output voltage, whichever is greater. Reset by cycling AC input power.

EMI

To MIL-STD-461C, part 2 requirements CEO1, CEO3, CS01, CS02, CS06, REO2.1 and RS03.

Switching Frequency

Fixed 250 KHz (nominal)

External Synchronization

5 volt p-p, 260-330 KHz square wave

Efficiency

Minimum 75% for outputs equal to or less than 10 volts, 78% for outputs greater than 10 volts.

Parallel Operation

Capable of being paralleled with up to 4 identical externally synchronized power supplies.

Temperature Coefficient

$\pm 0.02\%/^{\circ}C$ max

Operating Temperature

$-55^{\circ}C$ to $+95^{\circ}C$ combined baseplate and ambient per MIL-STD-810, method 501.1, proc. II and method 502.1, proc. I.

Storage Temperature

$-62^{\circ}C$ to $+95^{\circ}C$

Cooling

Conductively cooled baseplate with maximum temperature of $+95^{\circ}C$.

Humidity

MIL-STD-810E, Method 507.3, Proc. I, Cycle 3

Construction

Fully enclosed and repairable, modularized construction, enclosure is aluminum with chromate conversion coating per MIL-C-5541. The cover is stainless steel.

I/O Connection

Standard type per MIL-C-24308 (see table for mating connectors)

Weight

Weight is 0.8 lbs. maximum

Altitude

To 70,000 feet

Shock

MIL-S-901D, High Impact, Grade A, Type A, Class I

Vibration/SINE

MIL-E-5400T, curve IVa, modified to .20 in. d.a. from 5 to 14 Hz and 2.G from 14 to 33 Hz

Vibration/Random

MIL-STD810E method 514.4, Category 10 — Minimum Integrity Test

Salt Atmosphere

MIL-STD-810E, Method 509.3, Proc. I — Aggravated

MTBF

350,000 hours. Calculated at $85^{\circ}C$ baseplate for ground-fixed environment per MIL-HDBK-217E. Component derating in accordance with NAVMAT P4855-1A.

Rantec reserves the right to change design and specifications at any time without prior notice. It is Rantec's policy to improve products as new techniques and components become available.



Power Systems Inc.