

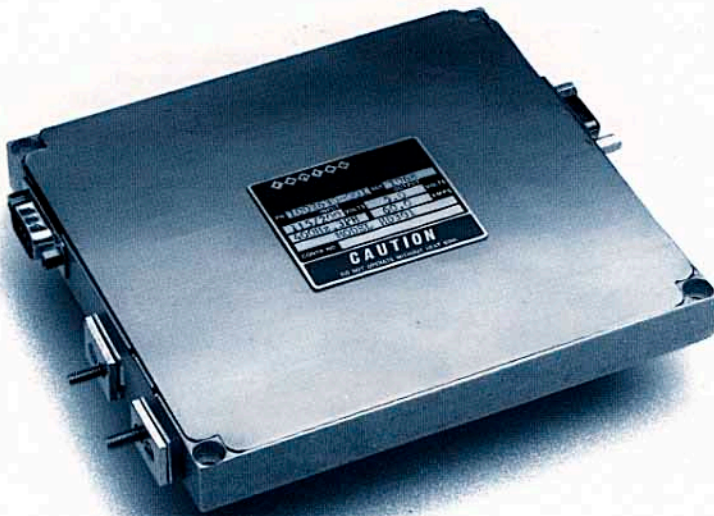
SERIES HD 30030

High Density Military Power Supplies

300 Watts

3 ϕ 400 Hz

SERIES HD 30030



Features

- 400 Hz three-phase or 270 VDC input
- 300 watt output
- Overcurrent foldback/assessment
- Overvoltage protection
- High efficiency
- MIL-C-24308 input auxiliary connectors
- Bus Bar output electrical interface
- 95°C baseplate operating temperature
- Tri-Service qualified
- FULL-MIL components
- MTBF to 335,000 hours

Description

Rantec Series HD 30030 high-density power supplies, utilizing current mode, constant-frequency switching technology, individually provide output capability to 300 watts. Additionally, they may be directly paralleled with up to four identical units to provide redundant or extended capabilities. Full, component derating is in effect at a baseplate temperature of 95°C.

Series HD 30030 interfaces with three-phase, 400 Hz or 270 VDC prime power in accordance with MIL-STD-704 and incorporates an internal EMI filter compliant 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 30030 is field-repairable.

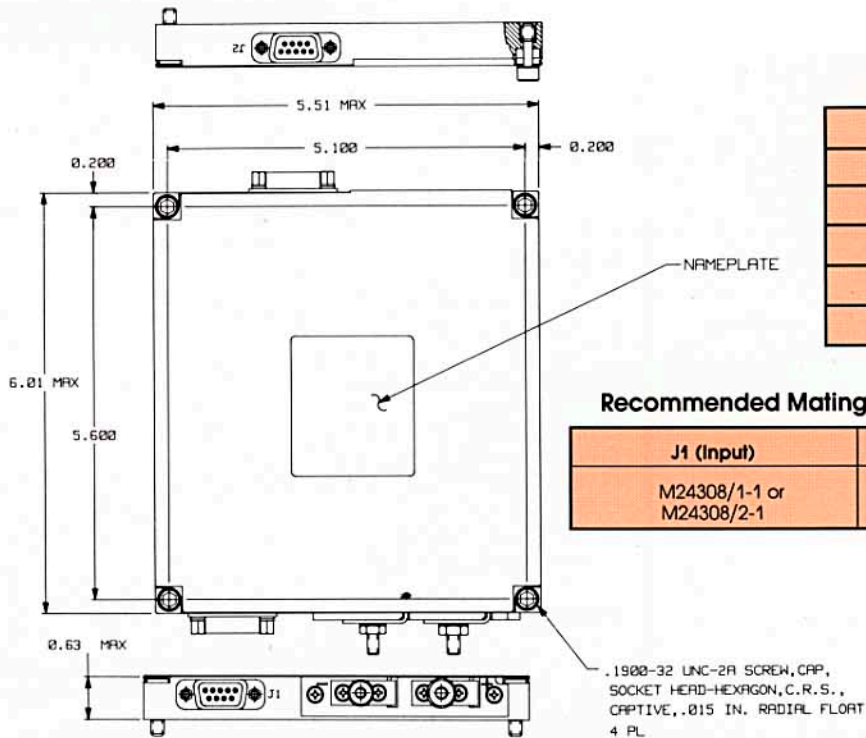
Rantec Series HD 30030 power supplies are qualified in accordance with the following applicable military specifications:

Specifications

- MIL-STD-704D Aircraft Electrical Power
- MIL-E-5400T Electric Equipment/General Aerospace
- MIL-E-16400G General Equipment/Specified for Naval Shipboard, Shore Communications 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	60A	HD 30031
12V	25A	HD 30032
15V	20A	HD 30033
24V	12.5A	HD 30034
28V	10.7A	HD 30035

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

J1 (Input)	J2 (Auxiliary)	+ Out	RTN
M24308/1-1 or M24308/2-1	M24308/301 or M24308/4-1	.190 DIA. Lug	.164 DIA. Lug

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, REQ2.1 and RS03.

Switching Frequency

Fixed 250 KHz (nominal)

External Synchronization

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

Efficiency

Minimum 78% for all outputs.

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 chemical conversion coating per MIL-C-5541. The cover is stainless steel

I/O Connections

Standard MIL-C-24308 type and stud terminals (see table for mating connectors and lugs).

Weight

Weight is 2.0 lbs. maximum

Altitude

To 70,000 feet

Shock

MIL-S-901D, High Impact Grade A, Type A, Class 1

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-810C, Method 509, proc. I

MTBF

335,000 hours. Calculated at 85 $^{\circ}C$ baseplate temperature 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.