VITA 62 VPX SOLUTIONS
Three Phase

DPM4700 SERIES

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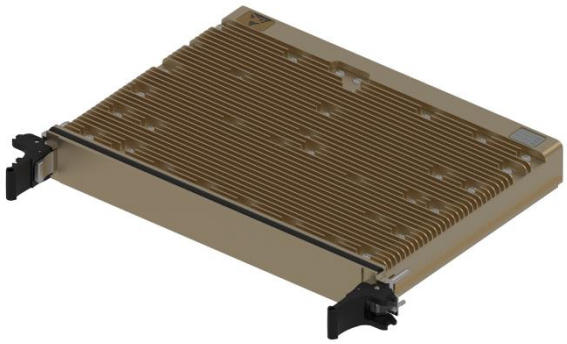
AC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- **VITA 62 COMPLIANT**
- **6U VPX FORM FACTOR**
- **AC/DC CONVERTER**
- **Up to 1000W Steady State**
- **Cyber Secure**

Description

DPM4700 is a military grade 6U VPX, VITA62 power supply that provides 12V, 5V and VAUX per VITA 62 that is rated at 1000W output power. Features include: Air Flow By cooling, 1.2" pitch, current-sharing, internal EMI filters, VITA 46.11 system management. AC input is 115V per MIL-STD-704. Designed to meet MIL-STD-810 and MIL-STD-461.

Applications

Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial

Special Features

- VITA 62 6U 1.2”
- High efficiency
- Input / Output isolation
- Remote sense
- EMI filters included
- Fixed switching frequency
- Parallel configuration
- 46.11 Tier 2 communication
- External Inhibit & Enable
- Indefinite short circuit protection with auto-recovery
- Over temperature shutdown with auto recovery

Electrical Specifications

AC Input

115 $V_{AC\ (Y)}$

- Works Through MIL-STD-704 (B-F) Normal and Abnormal Steady State.
- Works Through MIL-STD-704(B-F) Normal transients
- Protected MIL-STD-704(B-F) Abnormal Transients

Line/Load regulation

See Table 2 on page 6.

Ripple and Noise

Less than 50mV_{p-p}, typical (max. 1%), Under all Line, Load, and temperature condition (Line frequency 380 to 420Hz). measured across 0.1µF and 10µF on Load.

System Management Options

1) I2C
2) VITA 46.11 Tier II IPMC

Data available:

- Output voltages and currents
- Input voltage
- Card temperature
- Card status

DC Outputs

PO1&PO2	12V/60A
PO3	5V/30A
3.3Vaux	3.3V/20A
12Vaux	12V/1A
(-)12Vaux	(-) 12V/1A

Total Steady state Power 1000W (–55°C to +85°C Frame).

Power Factor

> 0.87 at 1kW

Current Share[3]

12V Active Current share
5V Active Current share

Load Transient

Output dynamic response up to 5% at step load of 30%-90%.
Output return to steady stated within 300-500µSec

Isolation

500V_{DC} Input to Output
500V_{DC} Input to Case
500V_{DC} Output to Case

EMC

Designed to meet MIL-STD-461F [2]
CE102, CS101, CS114, CS115, CS116, CS117 & RE102

Efficiency

Typical 87% (Nominal line, nominal load, room temperature)

Notes:

[1] Contact Factory for peak power options.
[2] RE102 Supported at system Level.
[3] Current share is optional, default configuration does not support current share

Protections (Thresholds and protections can be modified / removed – please consult factory).

Input

- **Inrush Current Limiter**: peak value of 5 x I_{IN} for inrush currents lasting longer than 100µs.
- **Under Voltage Lock-Out** Unit shuts down when input voltage is below 70VAC ± 5VAC.
- **Catastrophic Failure Protection** Fuses are available to protect from catastrophic failure. The fuses are rated not to engage due to any normal type operation.

Outputs

- **Over Voltage Protection**: 12V latch & fused Zener
  5V latch & fused Zener
  3.3Vaux fused Zener
  12Vaux Hiccup
  (-)12Vaux fused Zener
- **Overload / Short Circuit Protection**
  12V, 5V Output-Continuos Hiccup protection (110-130%).
  3.3Vaux Hiccup protection (110-150%).
  12Vaux Hiccup (110-180%)
  (-)12Vaux Hiccup/foldback (110-180%)

General

Over temperature Protection:
Shutdown at internal temperature of +100 °C±5°C.
Recovery at +80 °C±5°C.
I2C temperature sensors are located on PCB and will have correlation to Heat sink depends on load and airflow.

Environmental

Designed to meet MIL-STD-810G and VITA 47

Temperature

Operating: –55°C to +85°C (Max +85°C Envelope).
Storage: –55°C to +125°C

Humidity

810G Method 507.5 & VITA 47 Para. 5.6, Up to RH 95%.

Reliability

> 314,000 hours, calculated per MIL-STD-217F Notice 2 at +65°C on unit chassis, Ground Fixed. (complete analysis is still required)

Altitude

810G Method 500.5, Procedure II (Operational) & VITA 47 para. 5.7 60,000 ft.

Vibration

810G Method 514.6 Procedure I. General minimum integrity exposure.
(1 hour per axis
& VITA 47 Vibration Class V3

Salt Fog

Method 509.5

Shock

810G Method 516.6 Procedure I & VITA 47 Shock Class OS2 Saw-tooth, 40g peak, 11ms

Fungus

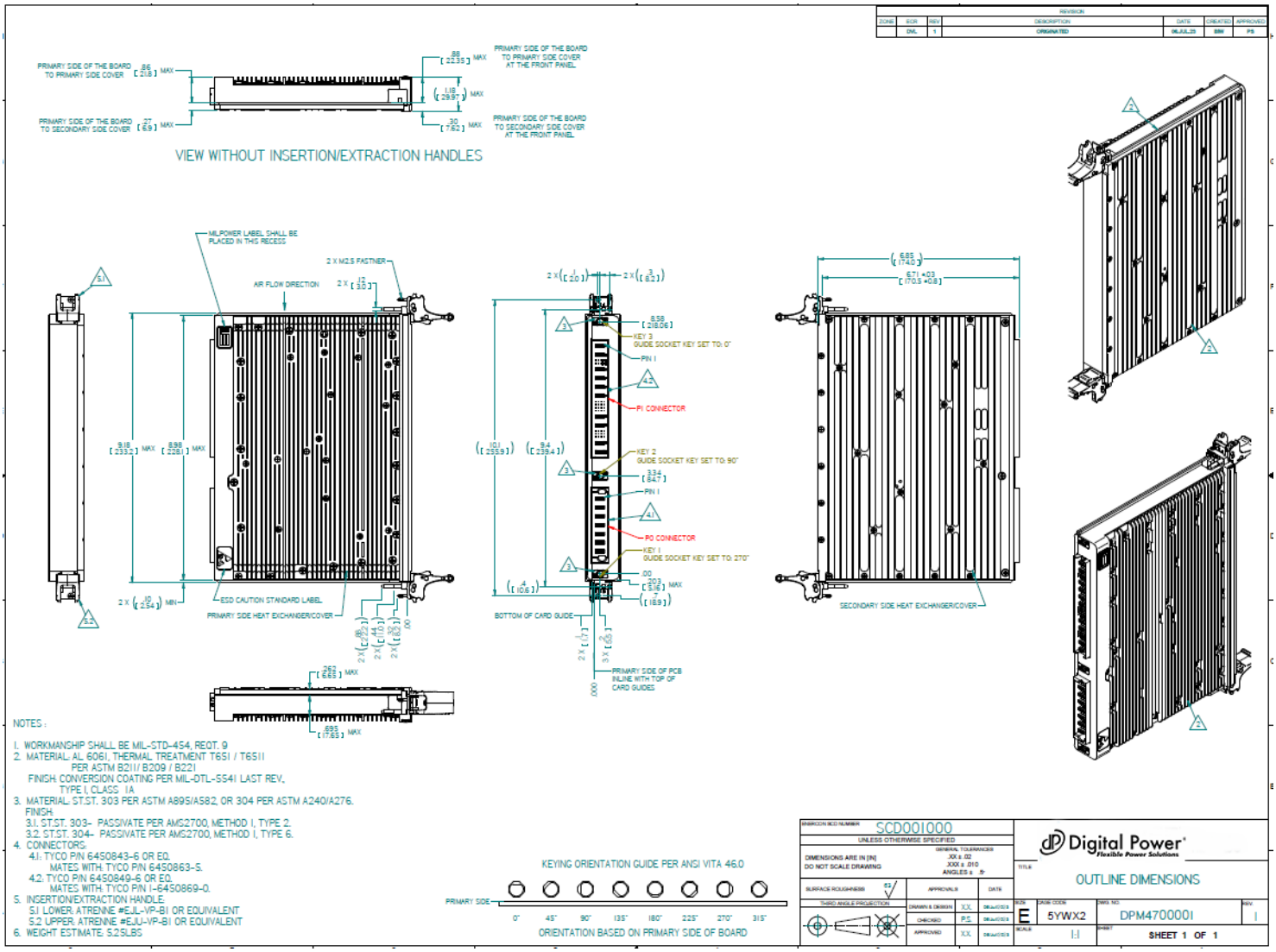
Does not support fungus growth, in accordance with the guidelines of MIL – STD – 454, Requirement 4.

Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. **Please consult factory for details.**

Outline Drawing

For detailed dimensions and tolerances see Drawing: DPM4700001



NOTES:

1. WORKMANSHIP SHALL BE MIL-STD-454, REQT. 9
2. MATERIAL: AL 6061, THERMAL TREATMENT T651 / T6511 PER ASTM B211/ B209 / B221
   FINISH: CONVERSION COATING PER MIL-DTL-5541 LAST REV. TYPE I, CLASS 1A
3. MATERIAL: ST.ST. 303 PER ASTM A893/A582, OR 304 PER ASTM A240/A276.
   FINISH
   3.1. ST.ST. 303- PASSIVATE PER AMS2700, METHOD I, TYPE 2.
   3.2. ST.ST. 304- PASSIVATE PER AMS2700, METHOD I, TYPE 6.
4. CONNECTORS:
   4.1: TYCO P/N 6450843-6 OR EQ.
   MATES WITH: TYCO P/N 6450863-5.
   4.2: TYCO P/N 6450849-6 OR EQ.
   MATES WITH: TYCO P/N 1-6450869-0.
5. INSERTION/EXTRACTION HANDLE.
   5.1 LOWER, ATRENNE #EJL-VP-B1 OR EQUIVALENT
   5.2 UPPER, ATRENNE #EJU-VP-B1 OR EQUIVALENT
6. WEIGHT ESTIMATE: 5.25LBS

based on VITA 48.7 class B, No seals for Module to Backplane seal plate or Primary side cover to secondary side cover interface

About Digital Power

Digital Power Corporation designs and manufactures full custom, value-added, and standard comprehensive power solutions for the most demanding applications in the defense, healthcare, telecom, and industrial markets.