

M4262 SERIES

DC/DC HOLDUP UNIT



PRODUCT HIGHLIGHTS

- VITA 62 COMPLIANT
- 3U FORM FACTOR
- 270V Line
- Advanced I2C / 46.11 COMMUNICATION
- UP to 48J

M4262 SERIES VPX DC/DC HOLDUP UNIT

Electrical Specifications

DC Input

Up to 270V_{DC} Continuous work during MIL-STD-704 transients

DC Output

VS1: Power
VS2: Power return
Normally: Input Follower

Isolation

Over 20 MΩ at test voltage: 500V between Input & output to case

Communication

Advanced I2C/ 46.11 protocol available for voltages

Efficiency

Typical 98%

EMC

Complies with MIL-STD-461F (5μH LISN): CE101, CE102, CS101, CS114, CS115, CS116, CS117

Environmental

Design to Meet MIL-STD-810G

Temperature

Operating: -55°C to +85°C at unit edge
Storage: -55°C to +125°C

Altitude

Method 500.5, Procedure I & II Storage/Air Transport: 40 kft Operation/Air carriage: 70 kft

Salt Fog:

Method 509.5

Fungus

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

Humidity

Method 507.5, Up to 95% RH

Shock

Method 516.6
40g, 11msec saw-tooth (all directions)

Vibration

Shock: Saw-tooth, 20g peak, 11mS.
Vibration: Vita47 Class V3

Reliability

239,210 Hours, calculated IAW, MIL-HDBK-217F Notice 2 at +85 °C, GF (Max Holdup).

Note: **Environmental Stress Screening (ESS)** Including random vibration and thermal cycles is also available.
Please consult factory for details.

Protections

Input

- **Inrush Current Limiter**
Peak value of 5 x I_{IN} for initial inrush currents lasting more than 50μSec.

- **Under Voltage**
Unit shuts down when input voltage drops below 160± 2.5V_{DC}
Automatic restart when input voltage returns to 180V Line.

General

- **Over Temperature Protection**
Automatic shutdown at internal temperature of 95 ± 5°C.
Automatic recovery when temperature drops below 90 ±5°C.

Note: Thresholds and protections can be modified/removed (please consult factory)

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Normal Operation: During Normal Operation, the M4262 works as an Input follower. Small Voltage drop, of less than 1V is expected

Hold Up Operation: When Voltage at the input of the unit drops under normal line the Holdup will discharge it's internal capacitance into the DC Bus. During this time the M4262 output voltage about 230V. Recharging of the capacitor bank will start before Input voltage goes back to steady state line. The M4262 charging time is less than 0.5Sec per Mil-STD-704, during this time, the average charging current taken from the source can be calculated as follow

$$E = \frac{C * Vc^2}{2}$$

$$I = \frac{E}{Vin * t * Eff}$$

Where **E** is Holdup Energy, **Vc** and **C** are the charging voltage and Holdup capacitance, **Vin** is input voltage and **Eff** is the charging circuit efficiency.

Typical Charging current peak < 10A for duration of less than 500mSec

For specific details contact Factory.

Reducing Charging current and increasing charge time is optional.

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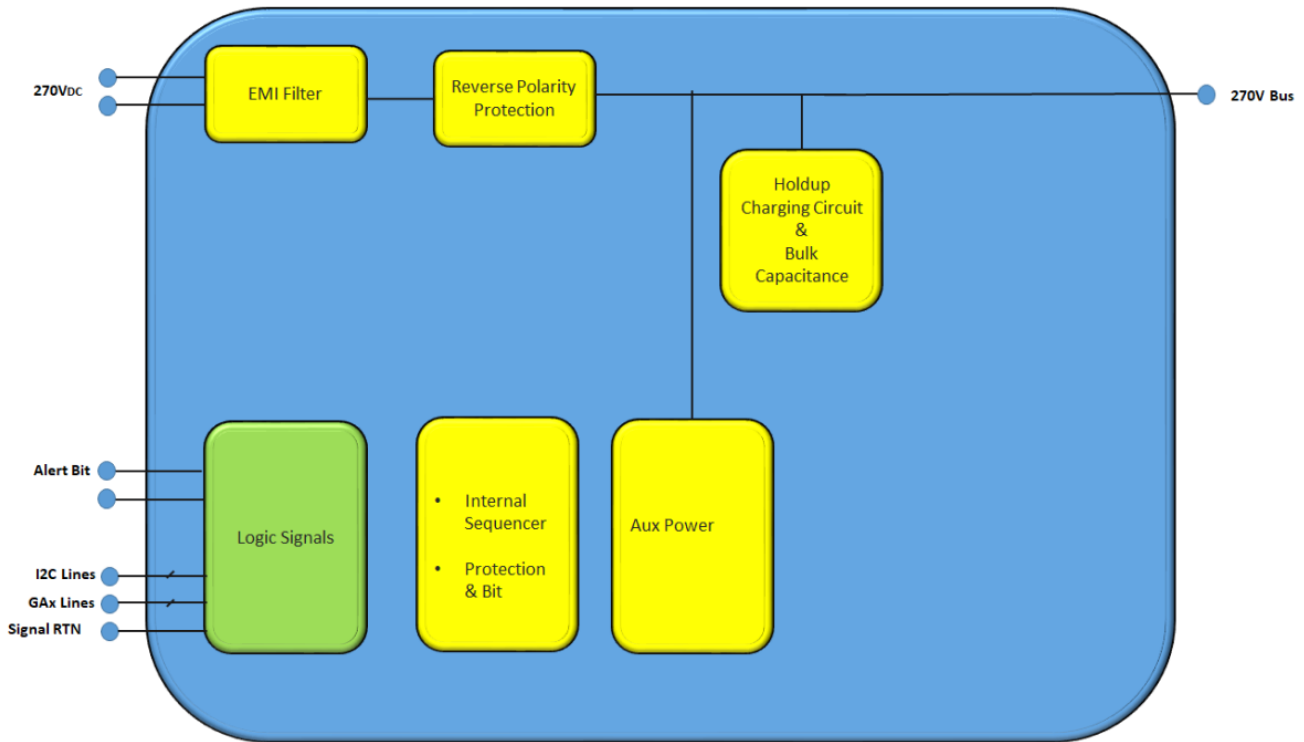
Functions and Signals - According to VITA 62

Signal No.	Signal Name	Type	Description	Pin No'
1	Power Down	Output	Indicates that Holdup event has occurred. Open Drain. Normally Open, goes low during Holdup time.	A1
2	Power Ready	Input	Indicates to other modules that Holdup capacitor bank is Fully charged. Open Drain. Normally Open, goes low when Holdup energy under 90%.	C1
3,4	GA0, GA1	Input	Used for geographical addressing. GA1 is the most significant bit and GA0 is the least significant bit.	D1,A2
5,6	SCL_A, SDA_A	Bidirectional	Primary I2C bus Clock and Data respectively. Through this bus the voltage and temperature readouts can be shared.	B2,C2
7,8	SCL_B, SDA_B	Bidirectional	Secondary I2C bus Clock and Data respectively. Through this bus the voltage and temperature readouts can be shared.	D2,A3
9	Signal_RTN	Ground	Signal Ground to All signals Above. Should be referred to Unit Power Ground	C3

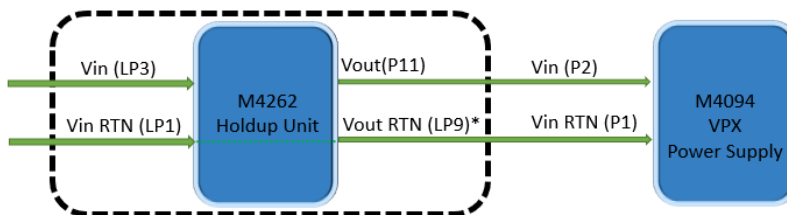
*All Signals Refer to Signal Ground

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Simplified Block Diagram



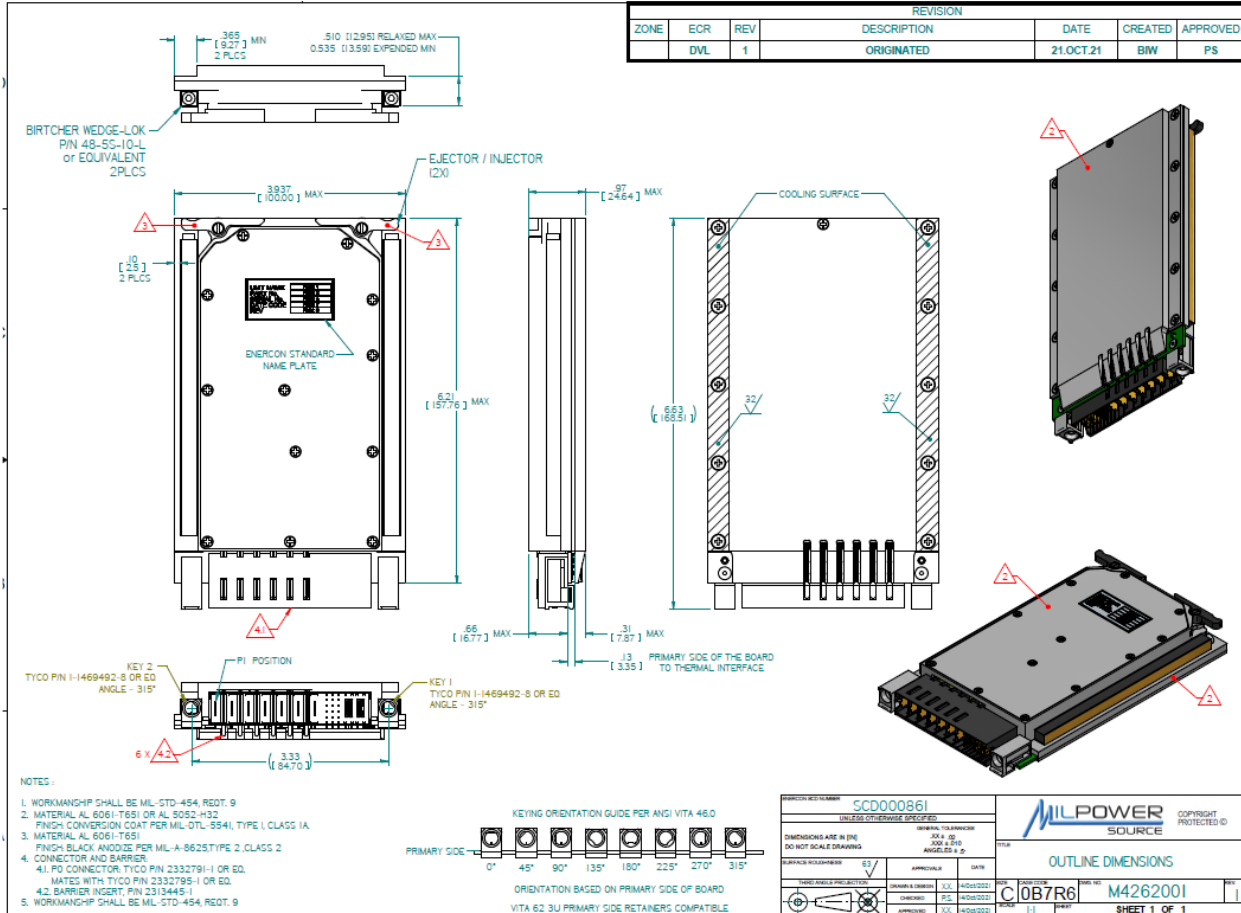
Typical Application



- * Vin RTN & Vout RTN are internally shorted
- As Hold-up event generate ground noise, it is important to keep Power Supply Input to Output grounds isolation
- All signals are floating and can be referred to Power Supply Signal ground

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Outline Drawing



Notes:

1. Dimensions are in inches [mm]
2. Tolerance is:
.XX ± 0.02 IN
.XXX ± 0.008 IN
3. Weight: Approx. 1050g
4. 3D model available

Note: Specifications are subject to change without prior notice by the manufacturer.