M4262 SERIES

DC/DC HOLDUP UNIT

PRODUCT HIGHLIGHTS

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

Milpower Source, Inc. • Belmont, NH, **USA** • P: (603) 267-8865
Email: sales@milpower.com • Website: www.milpower.com • CAGE: 5YWX2

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 ℃, 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)

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.

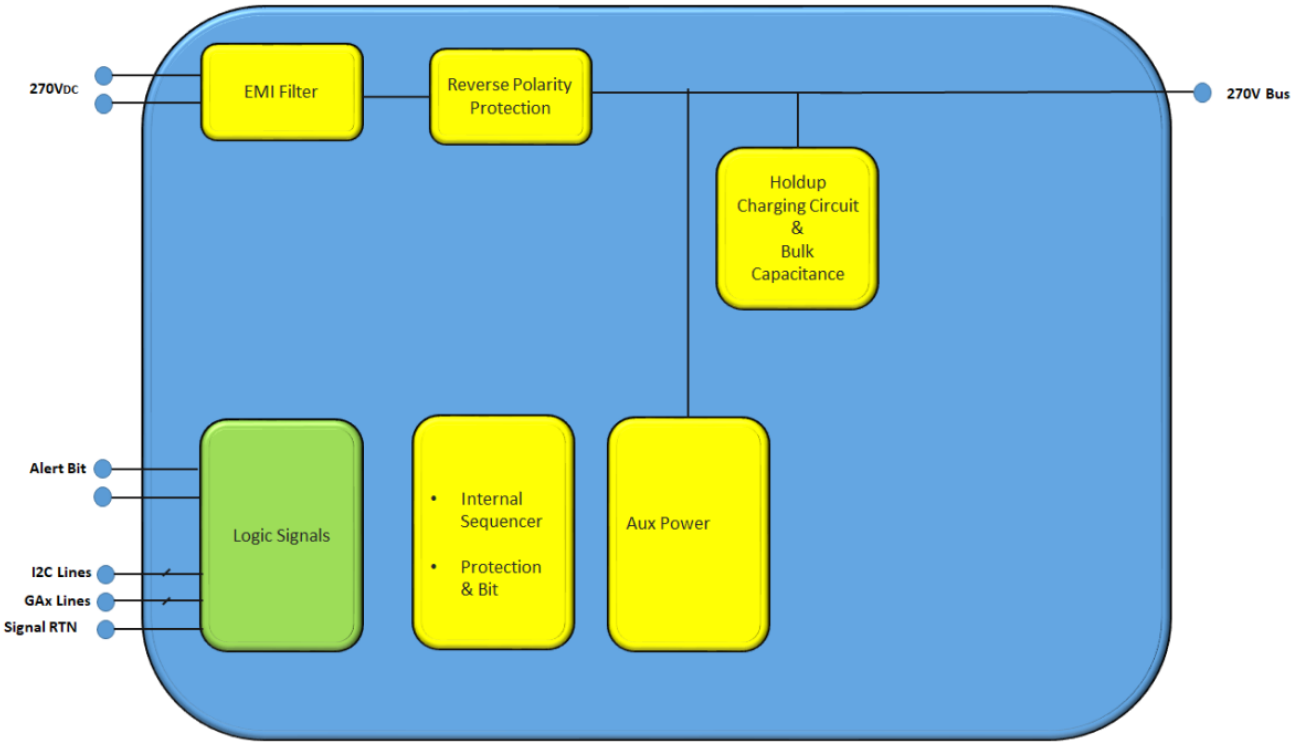
Reducing Charging current and increasing charge time is optional.

Functions and Signals - According to VITA 62

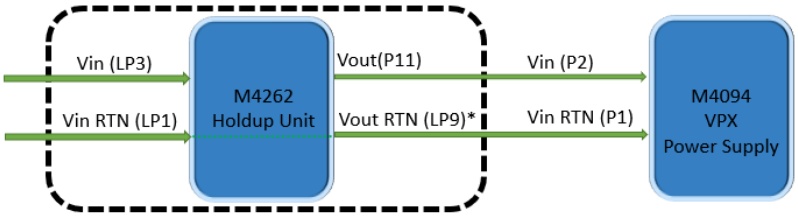
Signal No.	Signal Name	Type	Description	Pin No'
1	Power Down	Output	Indicates that Holdup event has occurred. Open Drain. Normally Open, goes low during Holdup time.	A1
2	Power Ready	Input	Indicates to other modules that Holdup capacitor bank is Fully charged. Open Drain. Normally Open, goes low when 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**

Simplified Block Diagram



Typical Application



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- 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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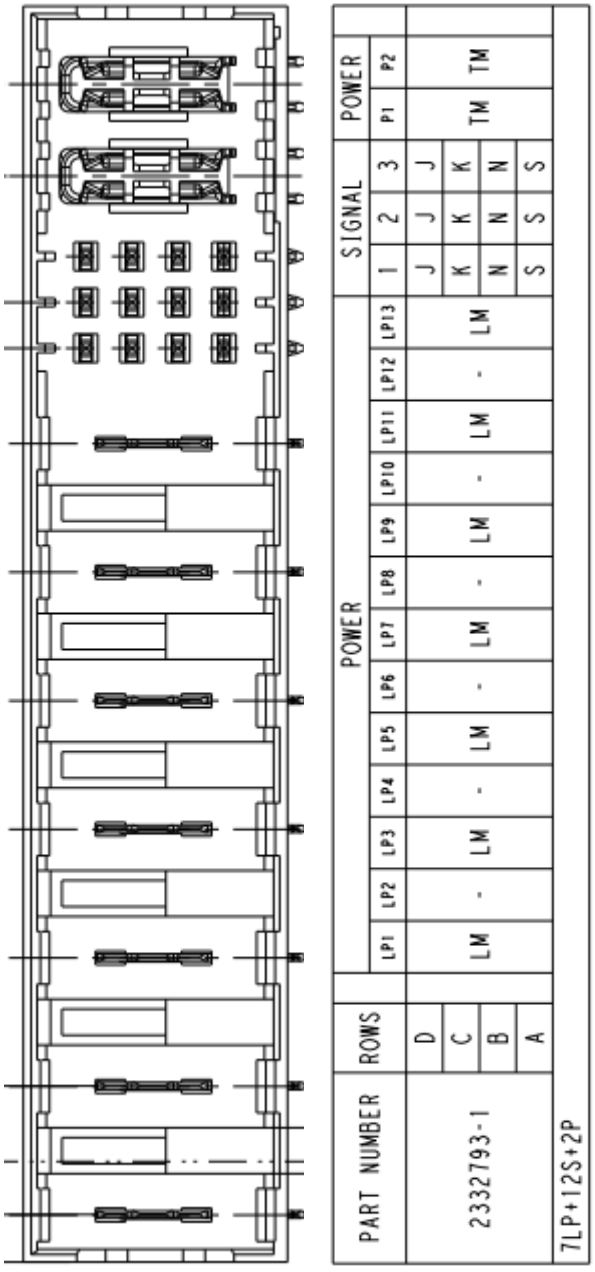
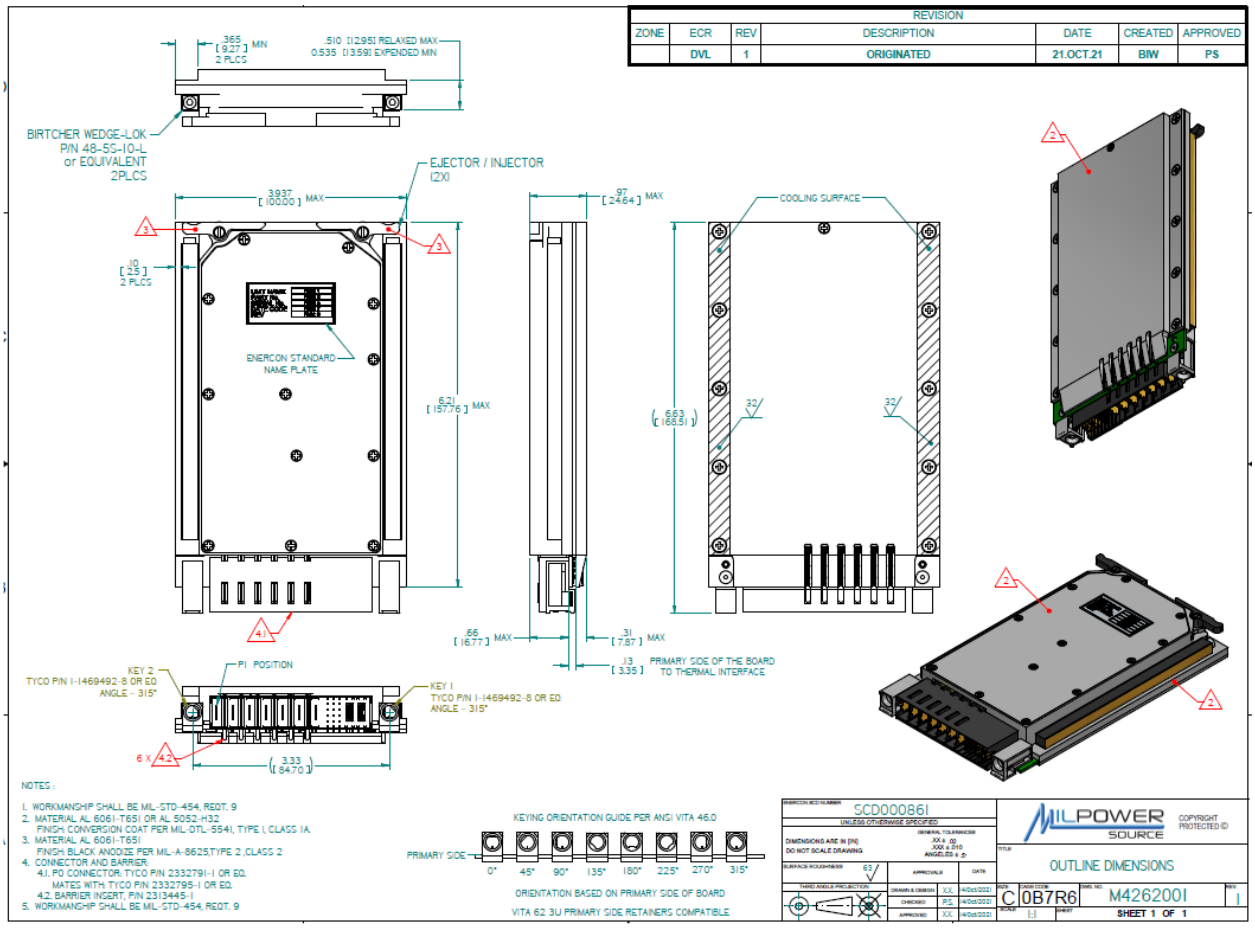
Pin Assignment

Pin Number	Pin Name
P1	N.C.
P2	N.C.
LP1	-DC_IN
LP3	+DC_IN
LP5	CHASSIS
LP7	N.C.
LP9	POWER_RETURN
LP11	OUTPUT
LP13	N.C.
A1	POWER DOWN
B1	N.C (SYNC_IN)
C1	POWER READY
D1	GA0
A2	GA1
B2	SCL_A
C2	SDA_A
D2	SCL_B
A3	SDA_B
B3	N.C.
C3	SIGNAL_RTN
D4	N.C.



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.

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