

## THE DEFINITIVE POWER MANAGEMENT SOLUTION

The massive array of electrically powered tactical systems installed on military vehicle platforms has expanded far beyond the level anticipated just a few years ago. Military vehicles in service today were not designed to cope with this additional burden, leading to power shortages in theater and causing systems to turn off without warning.

As a result of a lack of confidence and knowledge regarding power availability, crews idle large diesel engines just to ensure that there is a charge going into the system. Depending on the vehicle type and fuel expense, this costs thousands of dollars an hour per vehicle.

Merlin Power Systems' VBMS provides the most solid and reliable foundation available today for essential tactical systems. It is a PC-programmable, fully automated system for controlling multiple battery bank charging and power distribution on mobile military platforms.

## INTELLIGENT POWER MANAGEMENT

The VBMS employs the most accurate State-of-Charge (SoC), State-of-Health (SoH), voltage, current, temperature and time remaining battery information available to make decisions about the priority in which generated power is distributed to serve different batteries and consumers, based on mission requirements and real-time demand.

## DEEP DISCHARGE PROTECTION

Combat vehicles carry multiple batteries which can be easily damaged, and delivering replacement batteries to the front line is expensive. With the VBMS, different levels for each battery bank can be assigned depending on their role on the vehicle. This helps limit vehicle downtime and saves the enormous cost of unnecessary battery replacement.

## MAXIMUM SILENT WATCH CAPACITY

The VBMS can be configured to optimize power sharing between multiple battery banks, significantly extending capacity and run time for silent watch missions.

## INTEROPERABLE / REMOTE SYSTEM CONTROLS

The VBMS can communicate with third-party systems and the base vehicle architecture for graphical information display on a multi-function screen and/or the automation of essential tasks (e.g., auto APU start). Additionally, the system can be operated and monitored from a single, easy-to-use remote control panel.

## EMERGENCY PARALLEL CAPABILITY

The VBMS can remotely connect battery banks to supplement one another for emergency engine starting or other scenarios where the urgent power demand is critical.

## SIMPLE SYSTEM DIAGNOSTICS

The VBMS features PC-based diagnostics and data logging for easy vehicle troubleshooting.



## SPECIFICATIONS

### **Part Number:**

VBM-7001

### **Nominal Power Consumption:**

System Control Unit (SCU): 33.3 mA

Battery Monitor Unit (BMU): 25.0 mA

### **Normal Operating Voltage:**

8 to 40 VDC

### **Component Sizes:**

System Control Unit (SCU): 8.54" W x 4.96" D x 2.09" H

Battery Monitor Unit (BMU): 7.13" W x 4.02" D x 2.09" H

Shunt Sensor Module (SSM): 4.88" W x 3.19" D x 3.07" H

Remote Control Panel (RCP): 5.94" W x 2.36" D x 4.49" H

Isolator Gateway (IG) and Isolator/Split Charge

Gateway (ISG): 6.18" W x 6.26" D x 3.50" H

### **Component Weights:**

System Control Unit (SCU): 1.32 lbs.

Battery Monitor Unit (BMU): 1.10 lbs.

Shunt Sensor Module (SSM): 1.30 lbs.

Remote Control Panel (RCP): 0.88 lbs.

Isolator Gateway (IG): 4.19 lbs.

Isolator/Split Charge Gateway (ISG): 4.85 lbs.

### **Outputs:**

CAN Bus

RS-422

### **Operating Temperature:**

-25° C to +105° C

### **Storage Temperature:**

-55° C to +150° C

### **EMI Standards Compliance:**

Designed to MIL-STD-461F

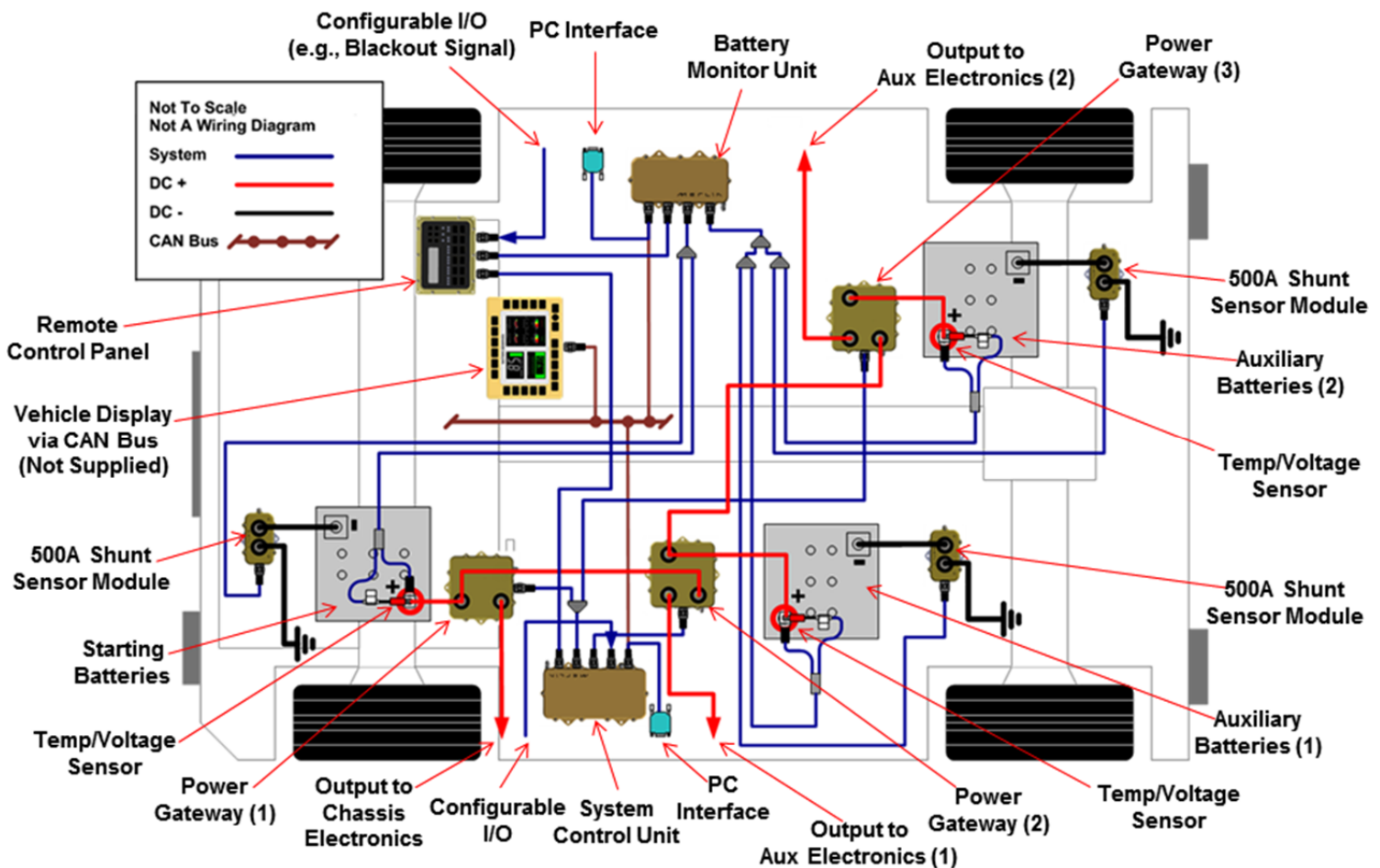
### **Environmental Standards Compliance:**

Designed to MIL-STD-810G

## REMOTE CONTROL PANEL (RCP) DETAIL

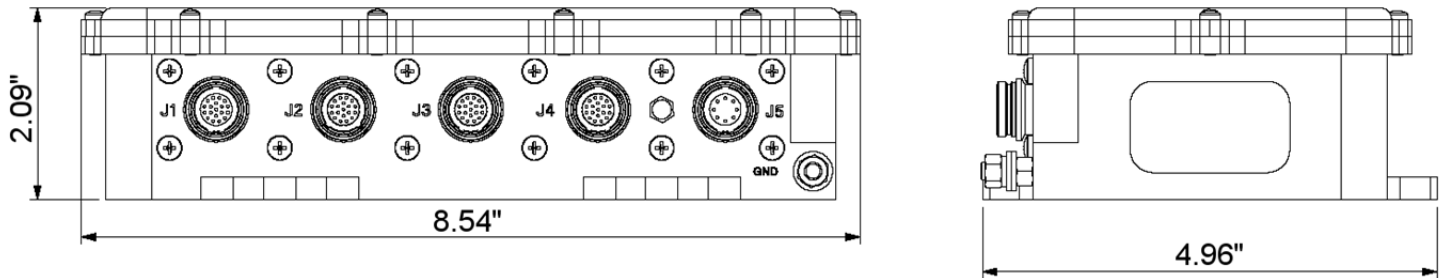


## SYSTEM OVERVIEW

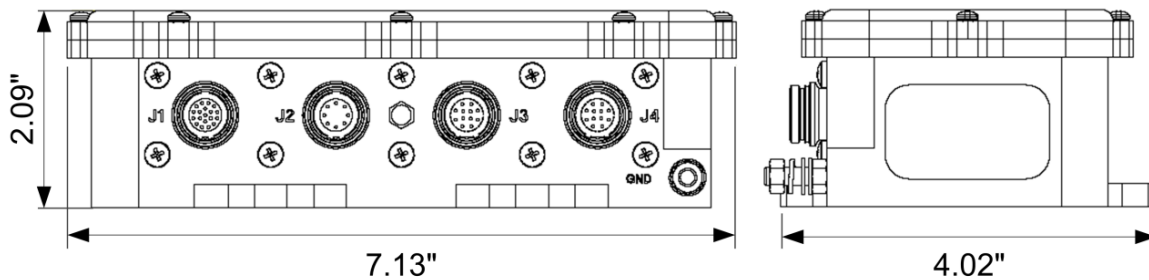


## OUTLINE/INSTALLATION DRAWINGS

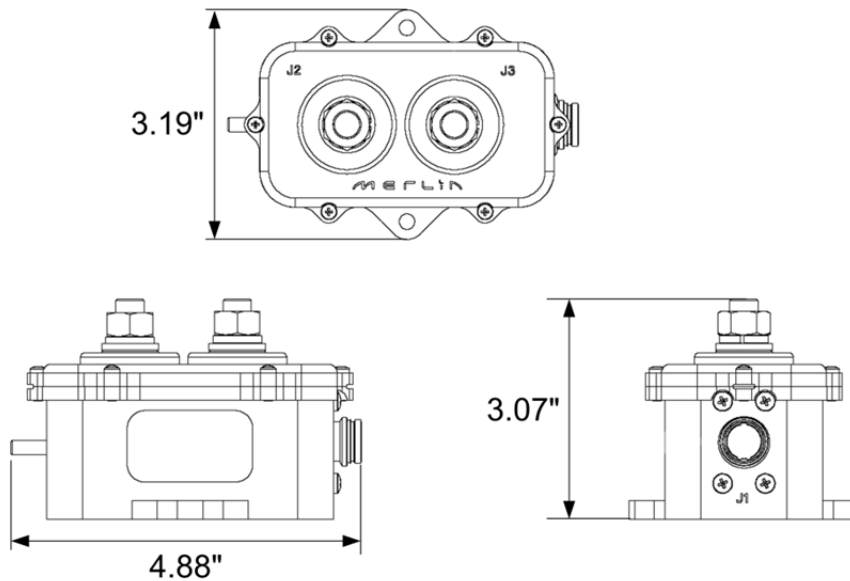
### System Control Unit (SCU)



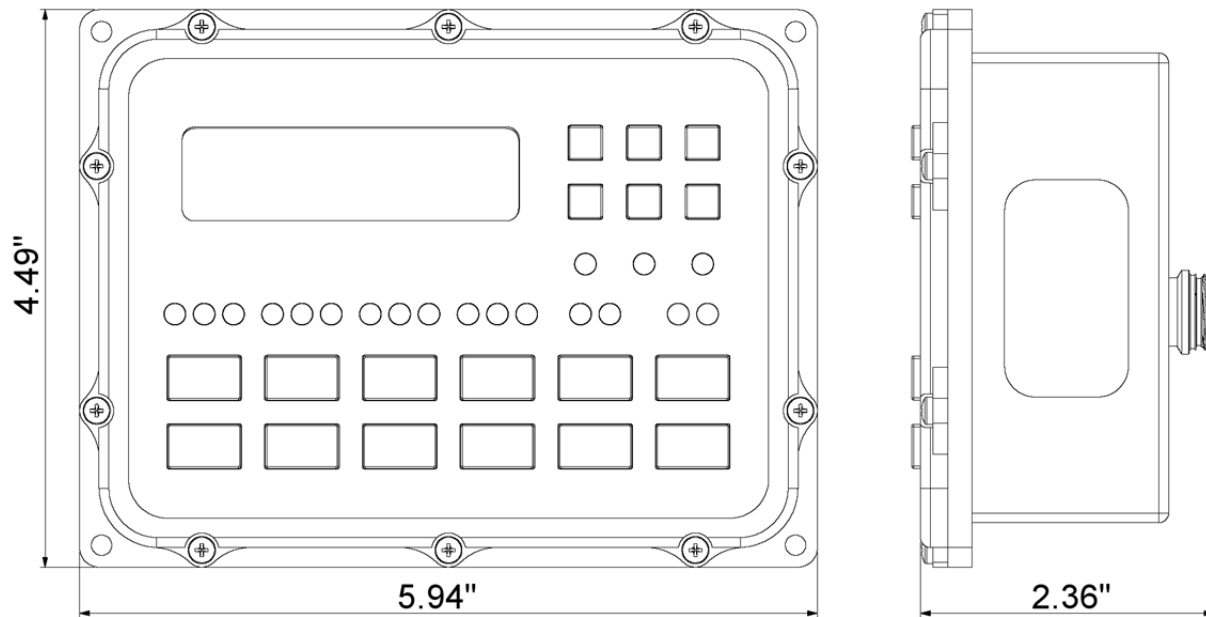
### Battery Monitor Unit (BMU)



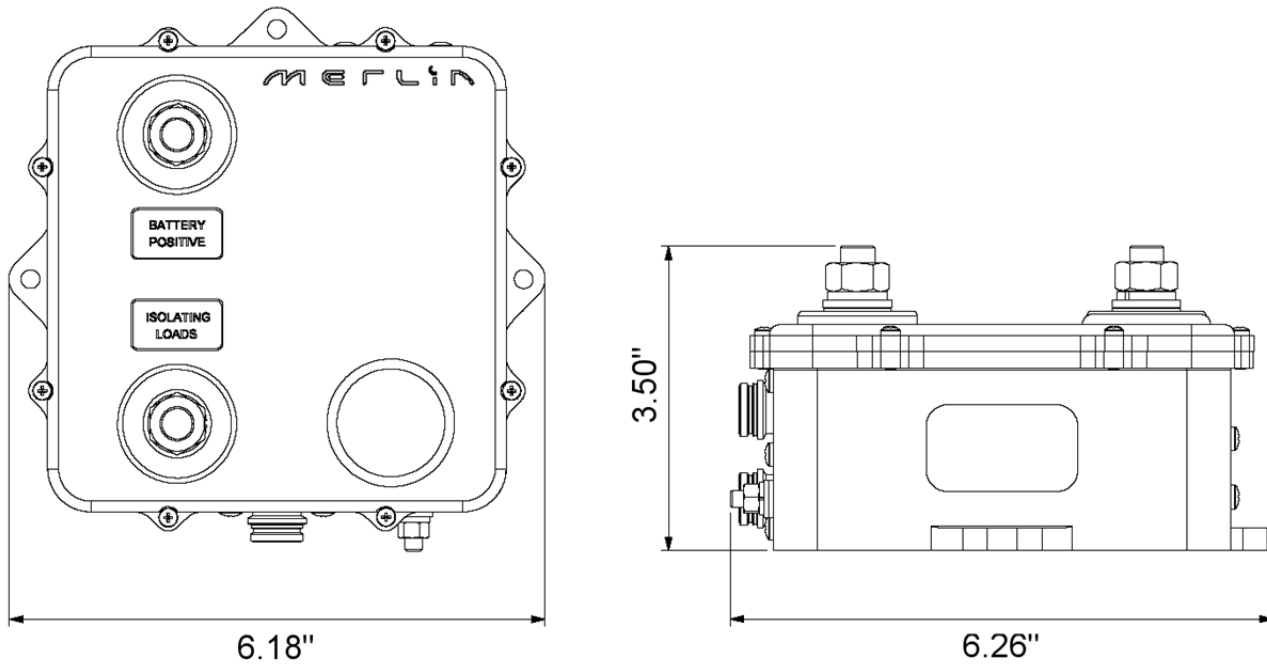
### Shunt Sensor Module (SSM)



## Remote Control Panel (RCP)



## Isolator Gateway (IG)



Isolator/Split Charge Gateway (ISG)

