

POWER SYSTEMS ARE THE HEART OF THE BUS AND NEED QUALITY ENGINEERING

Protect, Prevent and Enclose (PPE) technologies are employed to stop cell failure propagation, limit cell-to-cell thermal transport, and safely contain flames and debris.

Protect with SIL's advanced RadToIBMS housed within each Li-Ion Intelli-Pack® battery

- Real-time monitoring and balancing of all cells
- Protects cells against Overvoltage, Undervoltage, Over Current, Short Circuit, and OOT Thermal
- Temperature sensing

Prevent with semi-active Thermal Isolating Phase-change (TIP) material for large format batteries

- TIP between each cell pair and around the cell pack
- Phase change characteristics absorb heat energy if a cell-pair goes into thermal runaway
- Prevents cascading cell failures

Enclose with SIL's robust and flight proven battery housing cell pack is further insulated with UL 94 V-0 fire resistant foam to smother any cell expulsion

SIL HIGH CURRENT BMS



BATTERY MANAGEMENT SYSTEM GUI

A well-designed graphical user interface allows for intuitive interaction with the BMS that requires minimum training to operate.

The GUI featured here is one example which is currently operated by USAF Airmen as they monitor the battery systems for ballistic missile targets deployed from heavy lift cargo aircraft.

Li-Ion battery systems present hazards if they are not charged properly. Intelligent battery management not only mitigates risks, but also ensures maximum battery life, and overall mission life of your spacecraft.

BMS FEATURES

Battery telemetry at 1 Hz rate

- Voltages: 1 mV resolution, pack & cells
- Current: 1 mA resolution, battery level
- Temperature: 1°C resolution, arrayed on cells
- SOC and SOH, Diagnostics flags

Protection Features

- Charge: Over voltage, over current, Lockout, cell voltage equalization,
- Discharge: Under voltage, over current, short circuit, lockout, pulse programmable
- Temperature: Over/under protection for all operations, Autonomous heaters for cold operations
- Autonomous Built-In-Test
- Verifies battery is functional, periodically updates SOC, SOH
- Min/Max Data Recorder (Black Box), Saves battery data in event of fault or failure

Programmable BMS Agnostic to Cell Chemistry

BMS INTEGRATED INTO 52-AH Li-Ion INTELLI-PACK® Battery

