

XMP 96P HIGH POWER

Freudenberg Battery Power Systems (FBPS) is a premium total system solution manufacturer of packs, battery management systems and controls, racks, and telematics. FBPS is capable of handling any energy storage need, anywhere in the world, from our highly automated advanced production facility in Midland, Michigan.

The XPAND Modular Pack (XMP) is FBPS’s Energy Storage System based on XALT Energy’s lithium-ion cells. XMP is designed for use in medium to heavy duty commercial trucks, buses, marine equipment, and specialty applications, such as construction and mining equipment.

XMP 96P is ideal for applications with high discharge/charge power demands and high C-rate regenerative charging capability. Each sub-pack contains Voltage Temperature Balancing (VTB) boards that report voltage for all cell pairs and internal pack temperatures, and perform cell balancing. XMP 96P is designed for use with FBPS’s Battery Disconnect Unit (BDU) and Master Control Unit (MCU) through the Input/Output port.

Upgradeable, Ultra-Long Life Cycle Roadmap

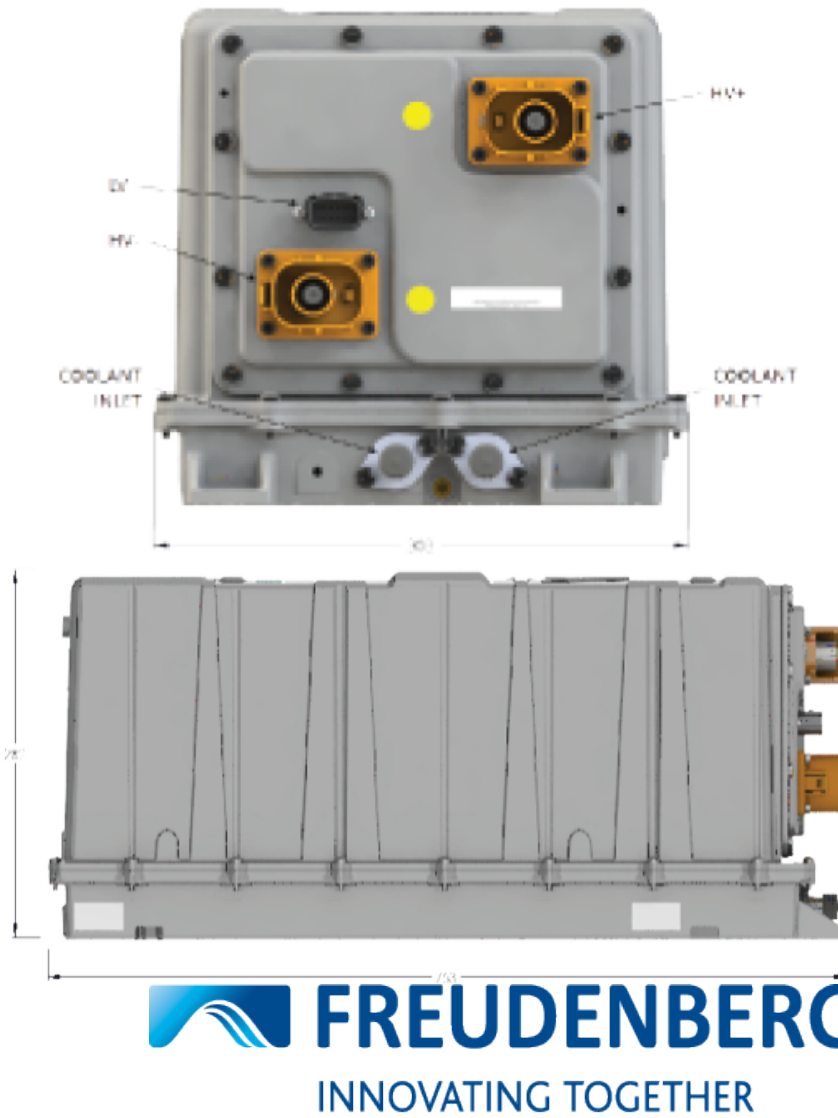
- XMP core accommodates cells in XALT’s 225mm family without the need for retooling, anticipating a wide variety of application voltage, power, and energy
- As cell technologies advance or packs become available for re-purposing, the XMP core can be replaced while all external interfaces remain the same

Advanced Thermal Management

- XMP’s advanced active liquid cooling system maintains ideal cell temperatures throughout the pack, and responds quickly to increases in power demand and changes in ambient (environmental) temperatures
- Base pack (non-marine) is IP67 rated for sealing performance, and efficient direct liquid cooling prolongs cell life under the most demanding cycle profiles and severe environments

THE FBPS ADVANTAGE

- Exceptional cycle life with proven XALT NMC SHP cells
- Rugged design for challenging environments
- Outstanding safety and abuse tolerance
- Efficient direct liquid cooling maintains ideal cell temperatures
- IP67 compliant (with connectors mated)
- Easy to install, configure, and upgrade
- ISO 9001:2015 certified production environment
- IP44 compliant for marine application (with connectors mated)
- IEC62619 compliant



FEATURES AND BENEFITS

Modular and Flexible Design

- Easy to customize high voltage, low voltage, and cooling interfaces to each application
- All connections at front panel; rear access not needed for installation

System Support

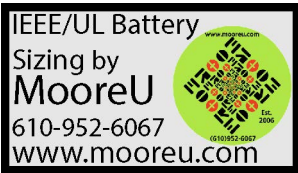
- Battery Disconnect Unit (BDU)
- Master Control Unit (MCU)
- Low Voltage Harness (LVH) Kit
- High Voltage Cable (HVC) Sets
- FBPS Battery Viewer Telematics
- FBPS Rack System

Life Cycle Support

- XPAND Service Tool
- Remote Data Monitoring & Prognostics
- Pack Replacement Maintaining Interface Connections
- End-of-Life Re-purposing, Recycling
- Integration Support
- On-site Training Classes

Additional Benefits

- In-house cell modeling and development creates sophisticated software and controls for accurate Power, SOC, and SOH predictions
- Custom warranty programs available



The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

www.FBPS.com

Performance	
Capacity (Rated @ C/5)	108Ah
Discharge Energy (Rated @ C/5)	9,671Wh
Nominal Voltage	88.8VDC
Specific Power*	≥551W/kg
Specific Energy	≥126Wh/kg
Energy Density	≥150Wh/l
Discharge Peak*	4.4C / 475A
Charge Peak*	3.9C / 420A
Discharge Continuous**	2.8C / 300A
Charge Continuous**	2.0C / 220A
Weight	76.5kg
Dimensions (all versions incl base) (L) 753mm (W) 303mm (H) 282mm	

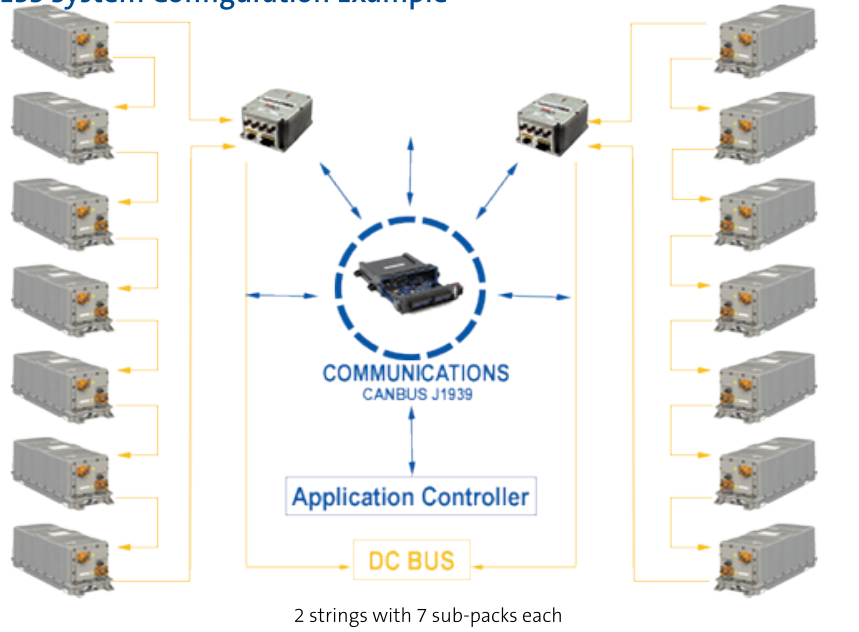
*10 seconds duration

**Cell performance will be affected by temperature, SoC, SoH, aging, etc.

Cycle Life	Typical
100% DOD Cycles @ 1C charge-discharge	>4,000 cycles***
80% DOD Cycles @ 1C charge-discharge	>10,000 cycles***

***Cycle life to 80% of rated capacity at 25°C room temperature with 10 min. step rest

ESS System Configuration Example



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