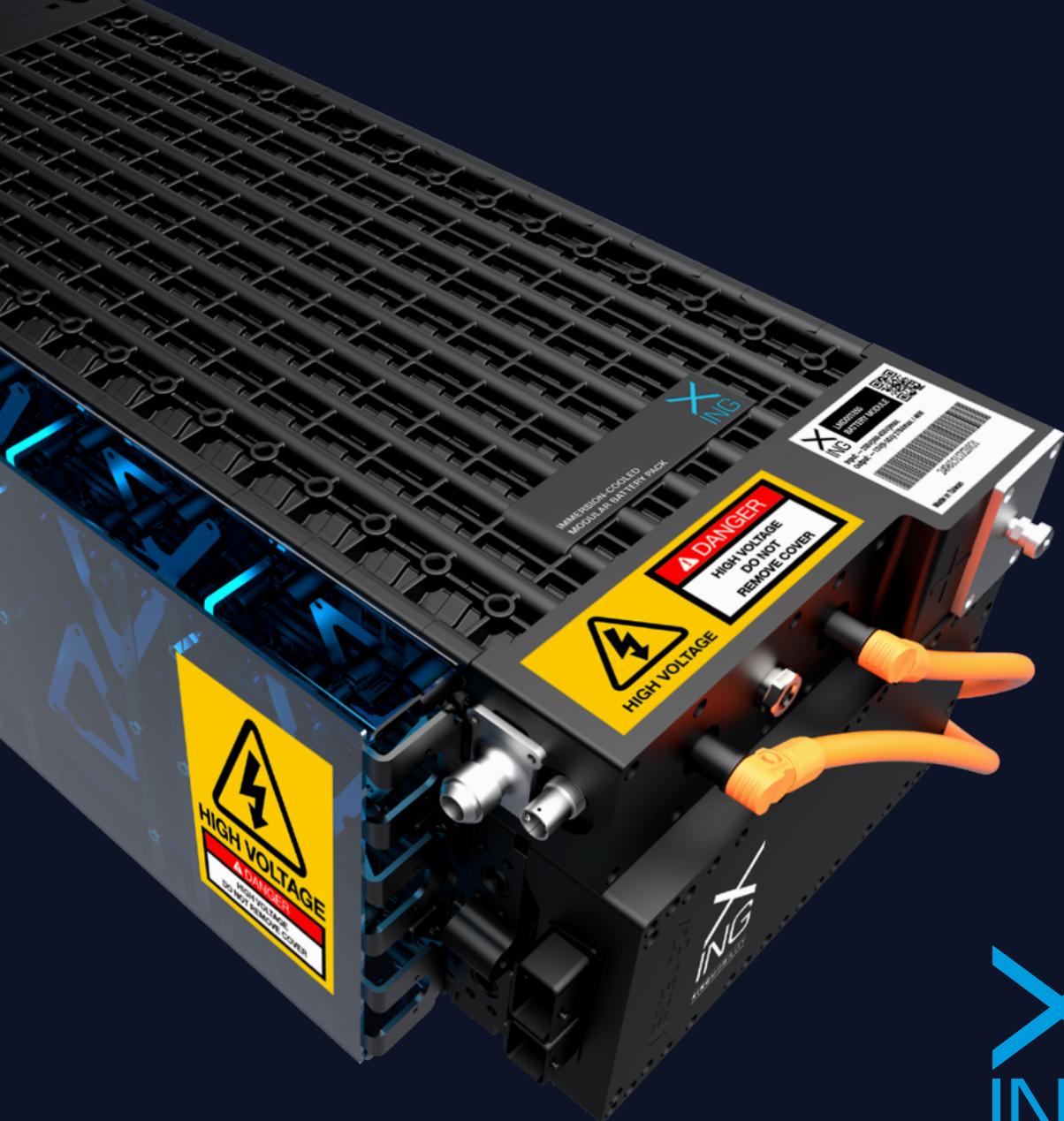


XING Mobility™

Dynamic Power on Demand™

IMMERSIO™ Modular Battery System



XING
MOBILITY

XING MOBILITY

INTRODUCING XING MOBILITY'S BREAKTHROUGH BATTERY TECHNOLOGY

XING Mobility's IMMERSIO™ Modular Battery System

delivers unprecedented continuous power to any and every electric vehicle. The world's first battery pack to make immersion cooling technology readily available for mobility applications, the system presents an advanced solution to thermal management challenges. The battery solution employs a simple, modular design to meet the diverse requirements of its customers, allowing for exceptional scalability without requiring custom battery development.



Revolutionary Immersion Cooling Technology



By 100% immersing lithium-ion battery cells in self-cooling, non-conductive fluid, XING Mobility's superior cooling technology achieves extremely high power output and charge rates while remaining lightweight.

Modular Building Block Design



Built from a unique micro module, the XING Mobility's battery pack is stacked in a Lego-like fashion to meet diverse size and shape requirements without custom development, making it fast to deploy and easy to install.

Fully Integrated Battery System



Designed as a plug-and-play system for ultimate ease of deployment, the technology includes all-in-one, fully-integrated safety and monitoring components, alongside a range of fully connected accessories.

SIMPLE. POWERFUL. ACCESSIBLE.



Faster Deployment



Plug & Play Installation



5,000+ Configuration Possibilities



Very Low Development Cost

SPECIFICATIONS



Standard Module



Pack Example 1 – 100 Modules



Pack Example 2 – 164 Modules

Dimensions	Standard Module		Pack Example 1 – 100 Modules		Pack Example 2 – 164 Modules	
	Energy Module	Power Module	Energy Pack	Power Pack	Energy Pack	Power Pack
Dimensions	323 x 71 x 83 mm ³		3230 x 820 x 330 mm ³		1190 x 650 x 500 mm ³	
Weight (Dry Pack)	3.1kg	3.1kg	380kg	380kg	623kg	623kg
Energy Capacity	0.53kWh	0.47kWh	52.4kWh	47.1kWh	86.1kWh	77.2kWh
Max/Min Voltage	4.1V/2.8V	4.1V/2.5V	410V/280V	410V/250V	672V/459V	672V/410V
Peak/Cont Discharge	840A/210A	2300A/1260A	840A/210A	2300A/1260A	840A/210A	2300A/1260A
Fast/Normal Charge	100A/43A	252A/210A	100A/43A	252A/210A	100A/43A	252A/210A
Charge Cycle to 75%	3,000	350	3,000	350	3,000	350

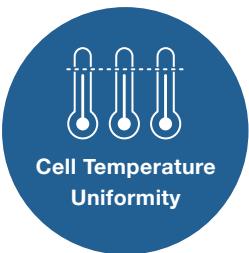
*In addition to allowing for custom shapes and sizes, XING Mobility enables users to choose between increased discharge rates ("Energy Pack") or increased power capacity ("Power Pack"). Note that all specifications may be subject to change.

REVOLUTIONARY IMMERSION COOLING TECHNOLOGY

By utilizing the incredibly effective cooling properties of 3M™ Novec™ Engineered Fluid and maintaining 100% direct coolant-to-cell contact at all times, the system drastically improves cell temperature uniformity and achieves radically superior heat transfer from the lithium-ion battery cells to the non-conductive fluid. The IMMERSIO™ Modular Battery System features variable speed pumps circulating coolant throughout the battery pack. Producing twice the average performance levels with far fewer cells, the pack is one of the highest power density battery solutions on the market.



Superior Thermal Management



Cell Temperature Uniformity



Industry Leading Power Density



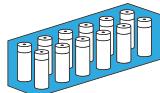
Fire-Suppression Properties



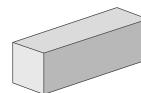
Lithium-ion Battery Cell



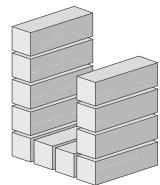
42 Cells per Module



Cells Submerged in 3M™ Novec™ Engineered Fluid



Battery Modules as a Building Block



Modular Battery Pack

KEY BENEFITS



Ultra High Power Output - By achieving superior heat transfer, XING Mobility's battery pack unlocks the maximum power capabilities of lithium-ion cells. The battery pack achieves ultra-high discharge rates of up to 2,000 amps per 10 seconds.



High-Speed Charging - Improved heat transfer also enables much faster charging, significantly improving the operability of vehicles. The system is compatible with fast charging systems, achieving charging rates of up to 250 amps.



Extended Battery Life - Improvements in temperature uniformity prevents the battery from deteriorating, allowing up to 3,000 charge cycles. The pack ensures greater battery lifecycle predictability, which provides increased budgeting control.



Weight Saving - The simple design eliminates heavy and complex packaging while continuing to discharge at up to 6 C-rate. The overall weight reduction enables longer drive ranges, or for the weight saving to be utilized elsewhere.



Highly Durable - One of the most durable battery packs on the market, the pack is shock-rated for 40G impact, submersible in up to 1 meter of water, and has an ultra-wide operating temperature range of -40°C to 50°C. The coolant also has long-lasting properties.

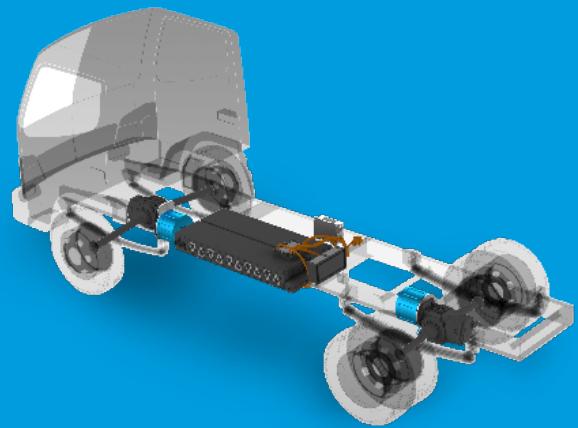


Safest User Conditions - With fire-suppression and self-extinguishing properties, 3M™ Novec™ Engineered Fluid immediately dissipates any heat arising from thermal runaway or damage whether through defective cells or crush/penetration.

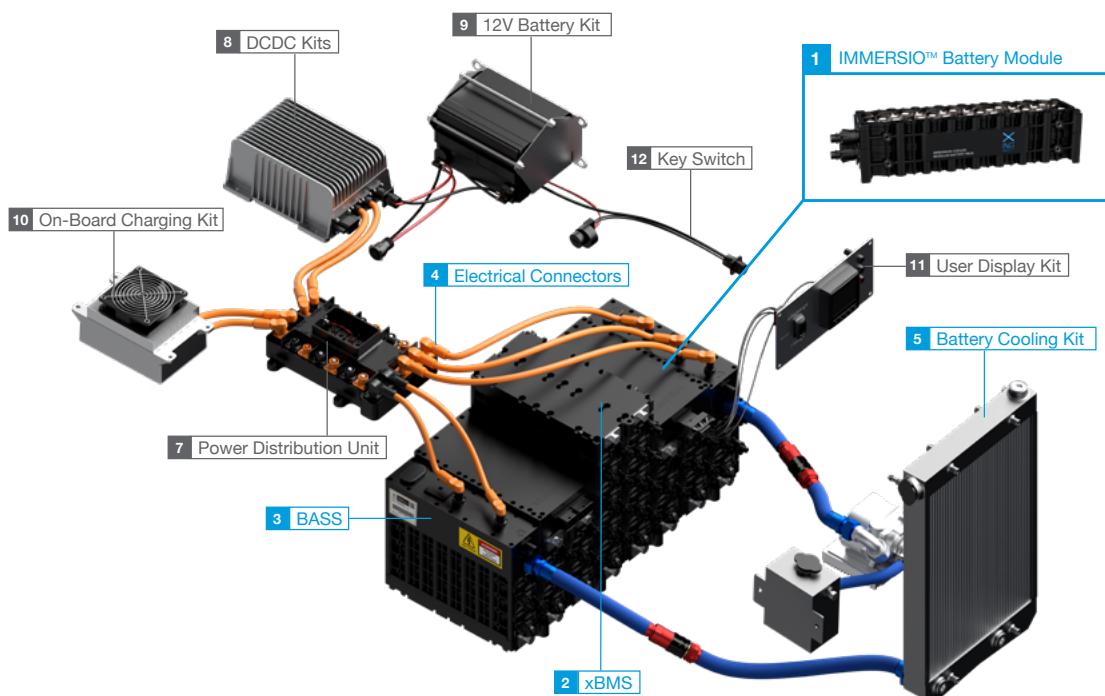


FULLY INTEGRATED BATTERY SYSTEMS

Uniquely designed to act as a plug-and-play, drop-in replacement for existing engines or powertrains, XING Mobility's Battery System has a setup time of as little as five minutes. With both modules and components fully modularized, the full system features all-in-one monitoring technology and sensor packages. All system components and accessories are integrated standard parts with a 10-year service parts availability guarantee, reducing the need for further component sourcing or custom tooling.



PLUG & PLAY INSTALLATION



KEY TECHNICAL FEATURES

- 1 **IMMERSIO™ Battery Module** Pre-filled with cooling fluid, the robust, compact and lightweight modules uniquely stack to any size or shape.
- 2 **xBMS (Battery Management System)** Uses real-time IoT/3G-connected safety and performance monitors to track cell performance and coolant quality.
- 3 **BASS (Battery Active Safety System)** Uniquely includes built-in pre-charged circuits. Isolates and disconnects single battery cells allowing the system to continue operation in the case of a fault.
- 4 **Electrical Connectors** Features double layer braided steel and are pre-aligned to the battery pack and system components.
- 5 **Battery Cooling Kit** Featuring cooling control pumps, pipes and radiators, the kit maintains the battery at optimum temperature and maintains safety by circulating coolant.
- 6 **Brackets and Mounting Kits** Allows battery packs to be mounted to almost any vehicle.

AVAILABLE TECHNOLOGIES

- 7 **Power Distribution Unit** Safe and reliable way to distribute high voltage power output.
- 8 **DCDC Kits** Allows existing 12V vehicle systems (such as pumps, lighting, fans) to be converted to power from the high voltage battery pack.
- 9 **12V Battery Kit** Provides 12V power when battery pack is in an off or standby state with unique low voltage disconnection feature.
- 10 **On-Board Charging Kit** Integrated charging technology with pre-configured, fully tested charge rates, charge voltage and cell balancing thresholds and international-standard charging connections.
- 11 **User Display Kit** Color LCD displays allowing instant user display implementation with no programming or development needed.
- 12 **Key Switch** Provides a high quality and durable solution for battery pack start up and shut down.

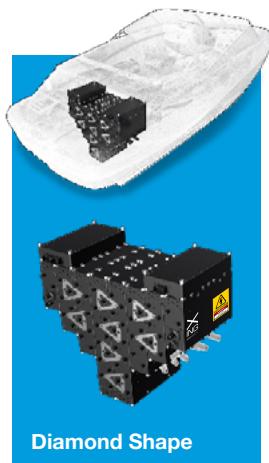
MODULAR BUILDING BLOCK DESIGN

XING Mobility's IMMERSIO™ Battery System is built from unique micro modules. Measuring just 300 x 80 x 70 mm³, the modules can be stacked and packaged in a "Lego-like" fashion to meet the size and shape requirements of the user. The battery modules interlock using state-of-the-art electrical connectors and sealing technology to provide a rigid mechanical structure that can survive up to 40G of shock. The battery system can be designed in any orientation and is IP67 rated. The modular design significantly reduces financial costs associated with customized battery pack development and enables an accelerated deployment time up to 60% faster than the industry average. XING Mobility can develop custom battery packs in 2 to 3 weeks.



MODULAR BATTERY PACK CONFIGURATIONS:

With limitless reconfiguration capability, the battery system is optimized for low-mid volume vehicle manufacturing and perfect for high-mix vehicle applications.



Diamond Shape



T Shape



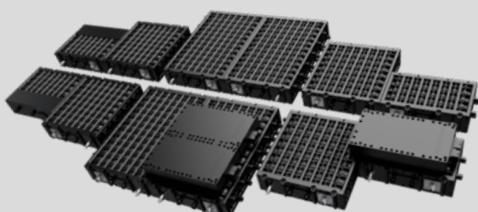
U Shape



Rectangular Shape

"MISS R" SUPERCAR

Flat Shape



XING Mobility's in-house developed
1 Megawatt electric supercar



ABOUT XING MOBILITY™

Founded in 2015, XING Mobility™ is a provider of advanced electric vehicle powertrain and battery technology. Empowering every and any vehicle maker to go electric, XING provides tightly integrated mobility technologies to the world's commercial, industrial and recreational vehicle makers.



"Miss R"—XING Mobility's 1 Megawatt Supercar

XING Mobility's 4-motor, 1,341hp electric supercar acts as a crucial development platform and the ultimate proof of concept for our immersion-cooling battery technology.



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