

WATTALPS Battery System

Immersion Cooling Technology



WATTALPS battery systems are composed of modules containing li-ion cells, a temperature control system, a junction box and a Battery Management System. The cells and busbars inside the modules are fully immersed in a dielectric fluid.

All modules in a system have identical dimensions & voltage, and can be connected in series from 48 V up to 800 V, and in parallel to achieve the targeted energy. Four categories of cells have been qualified to fit your application needs.

Module types	High Energy	Fast Charge & Life	High Power	Performance Power
Key Benefits	- Full day of work without charging - Punctual fast charge	- Everyday fast charge - Good energy density	- High discharge power - High regen. power	- Extreme fast charge and regen. - Good energy density
Key Features	Highest energy density	Good cycle life with repeated fast charges	Well adapted for hybrid applications	Most advanced solution for fast charge and hybrid applications

Data for 1 single module:

Total Energy	1 780 Wh	1470 Wh	1320 Wh	1510 Wh
Discharging Power				
- Continuous	4.3 kW	2.8 kW	8.1 kW	7.9 kW
- Peak 10s	6.6 kW	11.7 kW	11.7 kW	11.4 kW
Charging Power				
- Continuous for life optimisation	0.4 kW	0.7 kW	0.5 kW	1.5 kW
- Continuous fast charge / regen.	1.7 kW	1.4 kW	2.1 kW	4.5 kW
- Regen. 10s	3.4 kW	9.1 kW	10.4 kW	11.4 kW
Module Size (W x L x H)	200 x 335 x 90 mm (without connectors) 200 x 380 x 90 mm (including connectors and cover)			
Module Weight	12.4 kg incl. cooling fluid			

System Specifications	
System Voltage	From 48 V up to 800 V
Cycle Life*	To be calculated upon Average Temperature, Depth of Discharge (DOD), Charging Rate (C), State of Charge (SOC), End of Life State of Health (SOH)
Immersion cooling	- Cells and busbars fully immersed. - Biodegradable and non toxic dielectric fluid. - No fluid maintenance during entire battery life. - Integrated coolant circuit with high thermal inertia. - High efficiency active thermalization with heating and/or active cooling as option.
Functional safety	- BMS developed and certified according to ISO 26262. - Non propagation of cell thermal runaway. - Passive safety & gas venting channel included.
Applicable standards*	R100 Rev.5 / R10 / IEC62619 / UN 38.3 /Marine type approval.
Protection rating	IP67 / IP69K / IPXXB even with open connectors.
Battery ambient operating temperature	From -20°C up to + 60°C
Module position	All X, Y, Z, orientations are possible.
Second life & recycling*	Yes

* Please consult us
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