WATTALPS Batteries

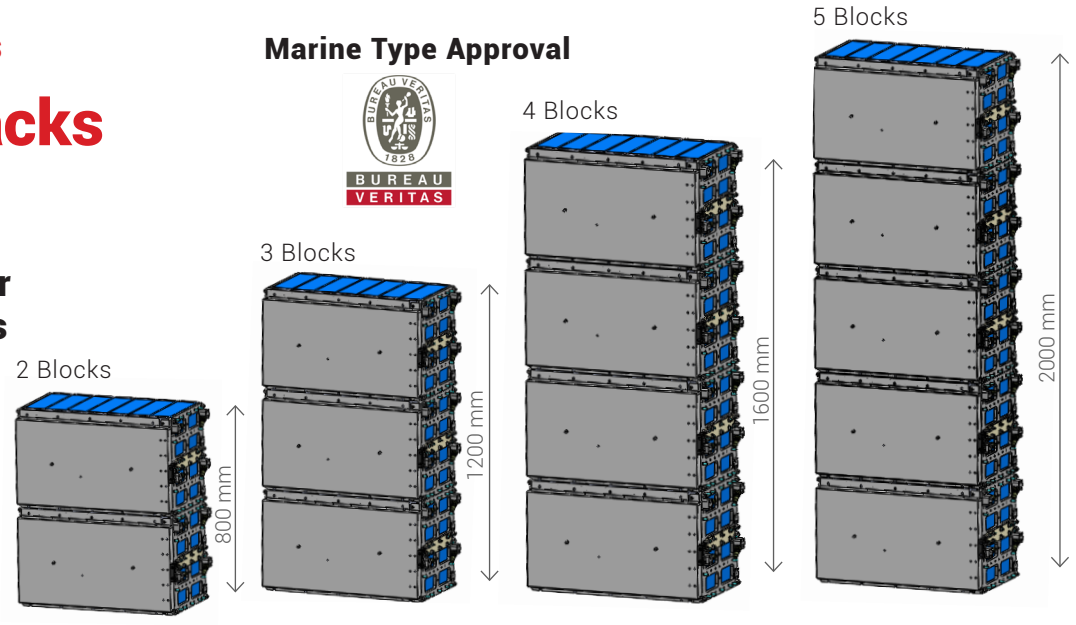
Maritime Packs 800 V

For hybridization or full electric vessels

Immersion Cooling Technology

Cells and busbars fully immerged in a dielectric fluid for the most efficient active thermalization.

Marine Type Approval



The **WATTALPS 800V maritime pack model** is typically designed for vessels and workboats with high headroom requirements. Based on standard module blocks it enables seemless integration into your vessel.

Ambient Temp. [1]	Discharge/Charge	From 0°C to 50°C
	Storage	From -5°C to 50°C

[1] No specific air conditioning or humidity level requested. Battery pack cooling based on seawater heat exchanger and water / glycol onboard circuit.

Cells	Category	High Energy	Fast Charge & Life	Performance Power
	Designation	HE02	FCL03	PP01
Discharge [2]	- **Continuous**	**2.4 C**	**2.0 C**	**5.2 C**
	- Peak	3.7 C	6.3 C	7.3 C
Charge [2]	- **Continuous**	**1.0 C** (punctual)	**1.0 C** (repeated)	**2.9 C**
	- Peak	1.9 C	7.4 C	7.7 C
Voltage	- Nominal	706 V	719 V	706 V
	- End of discharge	588 V	588 V	588 V
	- Standby fully charged	804 V	804 V	804 V

[2] At module level.

Base blocks per pack [3]	2 Blocks	3 Blocks	4 Blocks	5 Blocks	2 Blocks	3 Blocks	4 Blocks	5 Blocks	2 Blocks	3 Blocks	4 Blocks	5 Blocks
Embedded Energy (kWh)	49	74	99	123	41	62	82	103	42	64	85	106
Discharge Power [4] (kW)												
- Continuous [5]	107	158	160	165	73	110	146	168	157	167	167	170
- Peak 10s [5]	123	185	234	293	231	346	237	297	276	414	250	312
Charging Power [4] (kW)												
- Continuous [5]	51	77	103	129	41	61	82	102	134	186	181	182
- Peak 10s [5]	96	144	193	241	314	472	305	382	367	551	282	353
Full Pack Weight (kg) Including fluid and thermalization.	420	600	790	970	420	600	790	970	420	600	790	970

[3] Based on standard pack design. Alternative designs, arrangements and form factors available on request.

[4] 80% SOC Discharge; 20% SOC Charge.

[5] Based on standard junction box definition. Higher power with upgraded junction box available on request.

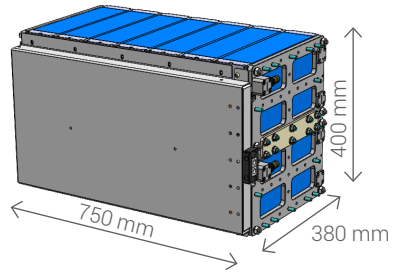
- **Bureau Veritas** maritime type approval for the 3 cell categories.
- No additional racking structure necessary to maintain the blocks together.
- **Energy Density:** volumetric: up to 216 Wh/l (stack), 130 Wh/l (pack); gravimetric: up to 141 Wh/kg (stack), 127 Wh/kg (pack).
- **Cont. Power Density**: vol.: up to 689 W/l (stack), up to 339 W/l (pack); gravimetric: up to 449 W/kg (stack), up to 374 W/l (pack).

WATTALPS Batteries

Maritime Packs 800 V

The **WATTALPS 800V maritime pack model** is made of two up to five module blocks, set vertically or horizontally, an electric equipment set, and an active thermalization set.

Fig.1. Minimal handling block. Around 175 kg.



Immersion Cooling

The most efficient thermalization solution for higher power and longer lifetime.

WATTALPS technology: Cells **and** busbars fully immerged in a non-flammable, non toxic, biodegradable dielectric fluid.

Compared to air cooling: no need for air conditionning or any air treatment in the battery compartment.

Compared to liquid cooling: no need for a compressor cooling down liquid at low temperature, as sea temperature <32°C is sufficient. This means less volume and energy losses.

Fig.2. Pack functional view. Version with four blocks set vertically (left), horizontally (right).

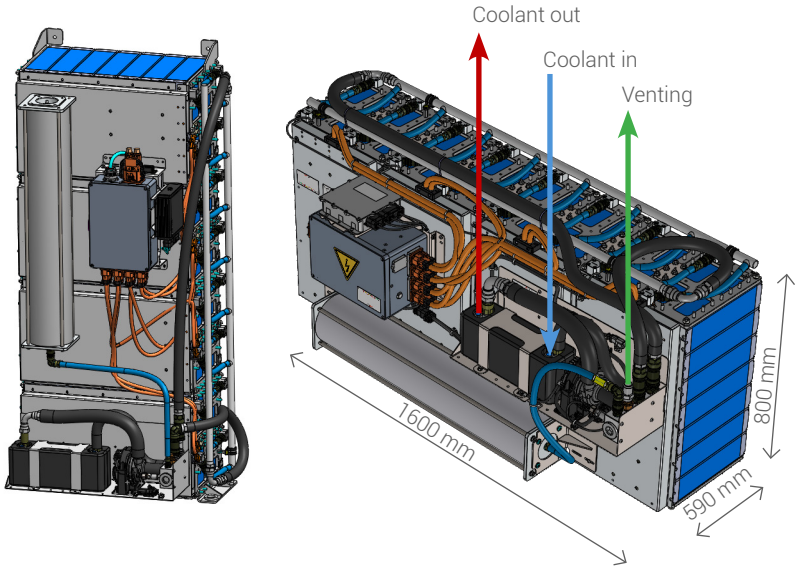
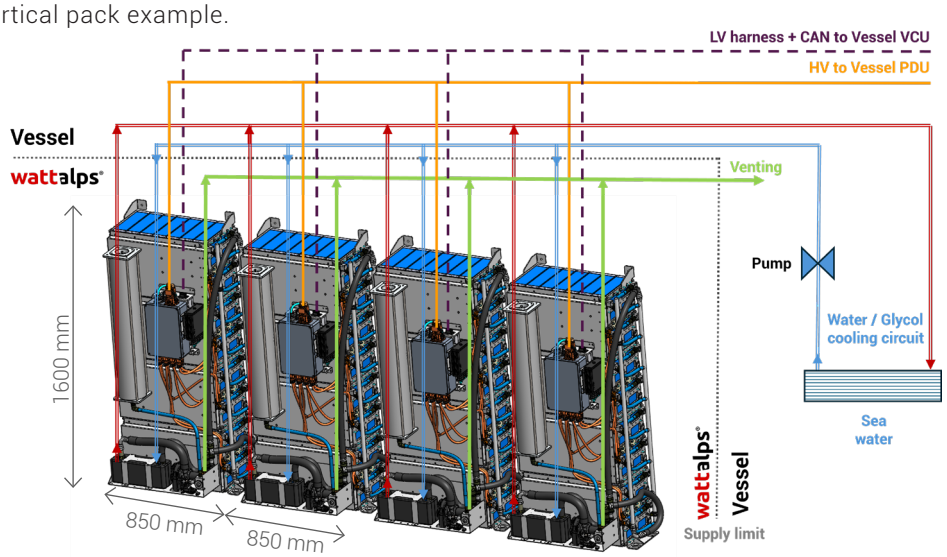


Table 1. Dimensions of the 7 versions of the WATTALPS 800V maritime pack model.

in mm	Vertical Length x Height x Depth	Horizontal Length x Height x Depth
2 Blocks	800 x 980 x 590	-
3 Blocks	800 x 1200 x 590	1200 x 800 x 590
4 Blocks	800 x 1600 x 590	1600 x 800 x 590
5 Blocks	800 x 2000 x 590	2000 x 800 x 590

Note: 50 mm clearance to be maintained between two packs.

Fig.3. Installation synoptic, with WATTALPS/Vessel supply limits. Four-block vertical pack example.



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