

High Power Type

150.1kWh Battery Rack



- › Optimized battery solution for marine application
- › Fully compliant with maritime safety standards and rule
- › Optimal thermal management via liquid cooling
- › High power performance (Up to 900kW)
- › IP56 rated protection at module level
- › Long cycle and calendar life (Over 8,000 cycles and up to 15 years¹)
- › Unparalleled safety design to support hazard-free operation
- › Scalable up to multiple MWh with virtually no limit

1. Depending on the load profile, the warranty condition may differ
*The image above is a reference, and the actual product may differ from the above image

Battery Rack Specification

Model: KST150883L34AED00

Item	Specification	Remarks		
Electrical				
Configuration	Rack	12 modules in series	-	
	Module	2P20S	Cell: KCL255085PN0 (85Ah)	
Installed Energy	150.1kWh	-		
Usable Energy ¹	135.1kWh	@ 1P discharge, BOL		
Nominal Voltage	883.2Vdc	-		
Operating Voltage Range	768.0 ~ 991.2Vdc	-		
Charging	Power	Rated ²	150.1kW	1P
		Max ³	300.2kW	2P
	Current	Rated ²	170.0A	1C
		Max ³	340.0A	2C
Discharging	Power	Rated ²	150.1kW	1P
		Max ³	435.4kW	2.9P
		Peak	900.8kW	6P, ≤10 sec. from SOC ≥50%
	Current	Rated ²	170.0A	1C
		Max ³	493.0A	2.9C
		Peak	1,020.0A	6C, ≤10 sec. from SOC ≥50%
Round Trip DC Efficiency	>95%	@ 1P, BOL		
Control Power	AC 100 ~ 260V, 50/60Hz	-		
Mechanical				
Dimension	-	Varies depending on installation		
Weight	-			
IP Grade	56	@ Module level		
Communication				
Communication Interface	Ethernet/RS-485	Modbus TCP/ Modbus RTU		
Monitoring	RS-232C	-		
Operating Conditions⁴				
Operating Temperature	Charging	0 ~ 10°C	<0.2P	
		10 ~ 35°C	<2P	
		35 ~ 45°C	<1P	
	Discharging	0 ~ 45°C	-	
Environment				
Ambient Temperature	0 ~ 45°C	-		
Storage Humidity	35 ~ 85% RH	Non-condensing		
Storage Temperature	1 Year	-20 ~ 25°C	30% ⁵ ≤ SOC ≤ 50%	
	6 Months	-20 ~ 35°C		
	3 Months	-20 ~ 45°C		
	<1 Week	-20 ~ 60°C		
Expected Cycle & Calendar Life⁶				
Cycle Life @ DoD 90%	≥6,000 cycles	@ 25±3°C, 1C/1C, SOH 70%		
Cycle Life @ DoD 80%	≥8,000 cycles	@ 25±3°C, 1C/1C, SOH 70%		
Calendar Life	Up to 15 years	@ 25±3°C, SOC ≤80%, SOH 70%		
Certifications				
Certifications	UL 1642, IEC 62619, UL 1973, UL 9540A, UN 38.3	Cell level		
	DNV	Module level, available by 3Q 2021		

*P : Power-rate / C : Current-rate

1. The usable energy may change depending on the calendar life of the battery cells

2. Daily cycling is possible at rated power/current condition. For optimal performance, the user shall rest the battery rack until the cell temperature returns to 25±3°C

3. After max. charging or discharging, it is recommended to rest the battery rack until the cell temperature returns to 25±3°C

4. Operating temperature is based on the cell temperature

5. When resting the battery system after an operation for longer than 1 month, the user shall ensure that the SOC is above 30%. The ambient

temperature shall be controlled at 25±3°C when resting the battery system. During storage, the temperature and SOC conditions shall always be adhered to

6. Depending on the load profile, the warranty condition may differ

Offered Solution

System Config. ¹	Installed Energy	Nominal Voltage	Operating Voltage	Rated Charge Power	Rated Discharge Power	Max Charge Power	Max Discharge Power	Max Discharge Current	BCP ² Required	No. of Banks ³
2 Racks	300.2kWh	883Vdc	768 ~ 991Vdc	300kW	300kW	600kW	870kW	986A	Y	1
3 Racks	450.4kWh	883Vdc	768 ~ 991Vdc	450kW	450kW	900kW	1,306kW	1,479A	Y	1
4 Racks	600.5kWh	883Vdc	768 ~ 991Vdc	600kW	600kW	1,201kW	1,741kW	1,972A	Y	1
5 Racks	750.7kWh	883Vdc	768 ~ 991Vdc	750kW	750kW	1,501kW	2,177kW	2,465A	Y	1
6 Racks	900.8kWh	883Vdc	768 ~ 991Vdc	900kW	900kW	1,801kW	2,612kW	2,958A	Y	1
7 Racks	1,051.0kWh	883Vdc	768 ~ 991Vdc	1,051kW	1,051kW	2,102kW	3,047kW	3,451A	Y	1
8 Racks	1,201.1kWh	883Vdc	768 ~ 991Vdc	1,201kW	1,201kW	2,402kW	3,483kW	3,944A	Y	1
9 Racks	1,351.2kWh	883Vdc	768 ~ 991Vdc	1,351kW	1,351kW	2,702kW	3,918kW	4,437A	Y	2
10 Racks	1,501.4kWh	883Vdc	768 ~ 991Vdc	1,501kW	1,501kW	3,002kW	4,354kW	4,930A	Y	2
11 Racks	1,651.5kWh	883Vdc	768 ~ 991Vdc	1,651kW	1,651kW	3,303kW	4,789kW	5,423A	Y	2
12 Racks	1,801.7kWh	883Vdc	768 ~ 991Vdc	1,801kW	1,801kW	3,603kW	5,225kW	5,916A	Y	2
13 Racks	1,951.8kWh	883Vdc	768 ~ 991Vdc	1,951kW	1,951kW	3,903kW	5,660kW	6,409A	Y	2
14 Racks	2,102.0kWh	883Vdc	768 ~ 991Vdc	2,102kW	2,102kW	4,204kW	6,095kW	6,902A	Y	2
15 Racks	2,252.1kWh	883Vdc	768 ~ 991Vdc	2,252kW	2,252kW	4,504kW	6,531kW	7,395A	Y	2
16 Racks	2,402.3kWh	883Vdc	768 ~ 991Vdc	2,402kW	2,402kW	4,804kW	6,966kW	7,888A	Y	2
17 Racks	2,552.4kWh	883Vdc	768 ~ 991Vdc	2,552kW	2,552kW	5,104kW	7,402kW	8,381A	Y	3
18 Racks	2,702.5kWh	883Vdc	768 ~ 991Vdc	2,702kW	2,702kW	5,405kW	7,837kW	8,874A	Y	3
19 Racks	2,852.7kWh	883Vdc	768 ~ 991Vdc	2,852kW	2,852kW	5,705kW	8,272kW	9,367A	Y	3
20 Racks	3,002.8kWh	883Vdc	768 ~ 991Vdc	3,002kW	3,002kW	6,005kW	8,708kW	9,860A	Y	3
21 Racks	3,153.0kWh	883Vdc	768 ~ 991Vdc	3,153kW	3,153kW	6,306kW	9,143kW	10,353A	Y	3
22 Racks	3,303.1kWh	883Vdc	768 ~ 991Vdc	3,303kW	3,303kW	6,606kW	9,579kW	10,846A	Y	3
23 Racks	3,453.3kWh	883Vdc	768 ~ 991Vdc	3,453kW	3,453kW	6,906kW	10,014kW	11,339A	Y	3
24 Racks	3,603.4kWh	883Vdc	768 ~ 991Vdc	3,603kW	3,603kW	7,206kW	10,449kW	11,832A	Y	3
25 Racks	3,753.6kWh	883Vdc	768 ~ 991Vdc	3,753kW	3,753kW	7,507kW	10,885kW	12,325A	Y	4
26 Racks	3,903.7kWh	883Vdc	768 ~ 991Vdc	3,903kW	3,903kW	7,807kW	11,320kW	12,818A	Y	4
27 Racks	4,053.8kWh	883Vdc	768 ~ 991Vdc	4,053kW	4,053kW	8,107kW	11,756kW	13,311A	Y	4
28 Racks	4,204.0kWh	883Vdc	768 ~ 991Vdc	4,204kW	4,204kW	8,408kW	12,191kW	13,804A	Y	4
29 Racks	4,354.1kWh	883Vdc	768 ~ 991Vdc	4,354kW	4,354kW	8,708kW	12,627kW	14,297A	Y	4
30 Racks	4,504.3kWh	883Vdc	768 ~ 991Vdc	4,504kW	4,504kW	9,008kW	13,062kW	14,790A	Y	4

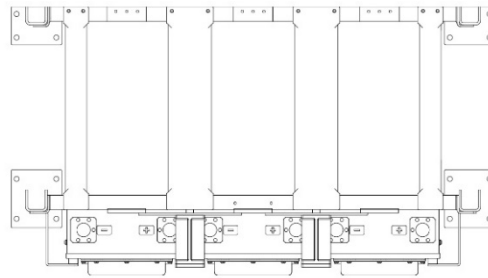
1. Depending on customer requirements, more than 30 racks can be connected in parallel.

2. BCP: Battery Connection Panel (Incl. switch disconnecter, system BMS)

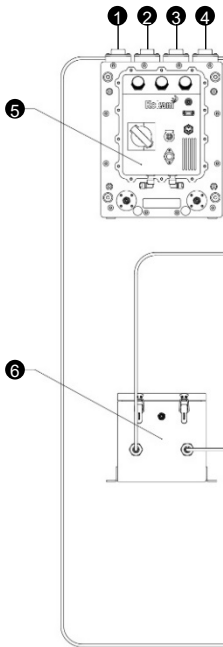
3. Depending on operational requirements, the number of Banks may vary. One BCP is required per Bank.

Rack Drawings

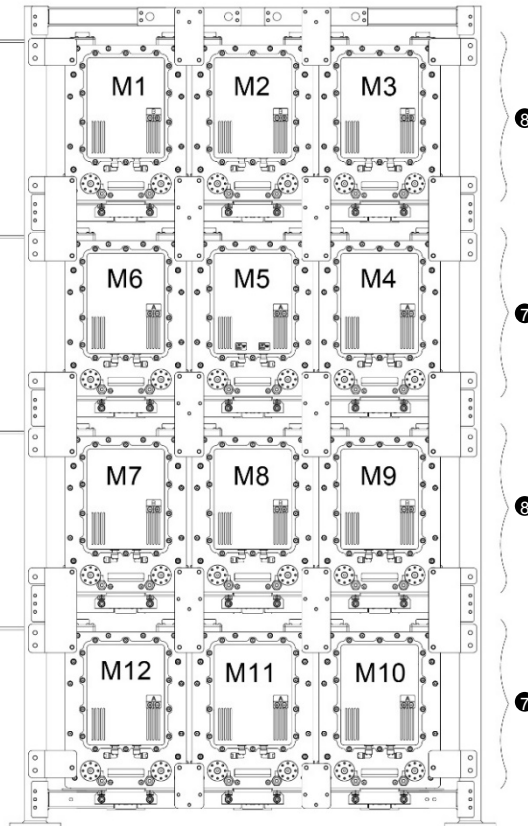
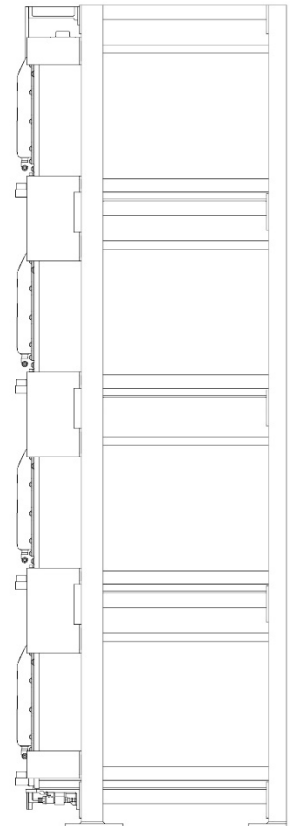
Top View



Front View



Side View



Description

- | | |
|---------------------------------|---------------------------------|
| ① DC Power (+) | ⑤ BPU (Battery Protection Unit) |
| ② DC Power (+) for Upper Device | ⑥ Fuse Box |
| ③ DC Power (-) for Upper Device | ⑦ Module (Type A) |
| ④ DC Power (-) | ⑧ Module (Type B) |

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