Energy Storage System Specification
(Model : UES 100kW ESS)

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1. Battery System Parameters

Specific parameters for each of the 50kWh battery system blocks are detailed in the chart below

Parameter	Units	Specification	Remarks
Cell Configuration:			
Series		180	
Cells in Parallel		4	
Cell Voltage:			
Max	V	4.2	at 100% SOC
Nom	V	3.75	
Min	V	3.0	at 0% SOC
Cell Capacity:			
Rated	Ah	20	from cell specification
System Configuration:			
Cell Modules	Cell Modules	30	each cell module contains 24 cells (12s2p)
System Capacity (BOL):			
Theoretical	Ah	80	calculated based on cell capacity
Rated	Ah	83.24	estimated when 1C rate is used to determine capacity; current taper applied at end of charge
System Capacity (EOL):			
Theoretical	Ah	56	estimated at 70%
System Voltage:			
Max	V	756	determined at maximum cell voltage
Nom	V	675	determined at nominal cell voltage
Min	V	540	determined at minimum cell voltage
System Energy:			
Theoretical	kWh	54	calculated value based on theoretical system capacity
Rated	kWh	56	calculated value based on rated system capacity
Usable (typical)	kWh	32	estimated energy between 20% and 80% SOC, de-rated specific to system application
Usable (max)	kWh	44	estimated energy between 8% and 90% SOC, de-rated specific to system application
System Discharge Power:			
Continuous	kW	27	at nominal system voltage (40A*675V)
Max	kW	378	at nominal system voltage (560A*675V)
Peak	kW	607	at nominal system voltage (system/cell peak, duration less than 0.5s) : 900A*675V
System Charge Power:			
Continuous	kW	27	at nominal system voltage (40A*675V)
Max	kW	108	at nominal system voltage (160A*675V)
Peak	kW	108	at nominal system voltage (160A*675V)
System Discharge Current:			
Continuous	A	40	continuous between 20% and 100% SOC, specific to system application
Max	A	560	continuous between 20% and 100% SOC (system maximum continuous)

Parameter	Units	Specification	Remarks
Peak	A	900	Between 50% and 100% SOC (system/cell maximum surge, duration less than 0.5s)
System Charge Current:			
Continuous	A	40	continuous between 0% and 80% SOC, specific to system application
Max	A	160	continuous between 0% and 80% SOC (system maximum continuous)
Peak	A	160	continuous between 0% and 80% SOC (system maximum continuous)
System Mass	kg	900	For just one rack
System Shelf Life	years	5	A/S with free: 1year, A/S with cost: 4year
Cell Balancing	Type	Dissipative	BMS Temperature Diagnostics
Thermal Management	Type	Limit Controlled	BMS Current Limited above normal cell operating temperature
Operating Temperature/Humidity:			
Max	% RH	85	from cell specification
Min	% RH	45	from cell specification
Max	degrees C	55	from cell specification
Min	degrees C	(-)20	from cell specification
Storage Temperature	degrees C	(-)20 to 25 <1year	from cell specification
Pre-Charge	Type	Internal	HV Load Capacitance protection
GFD		n/a	HV Impedance Diagnostics
EPO		n/a	Emergency Power OFF (interlock)

Table 2 Product Technical Specifications

2. Mechanical Drawings

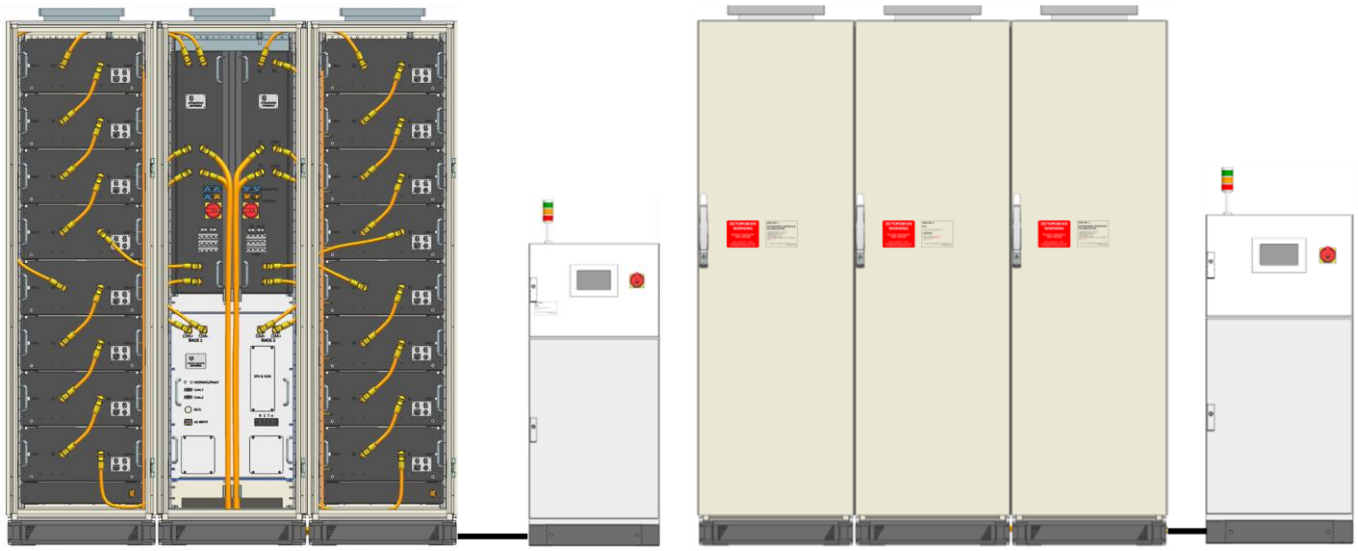

Figure 16 Rack drawing

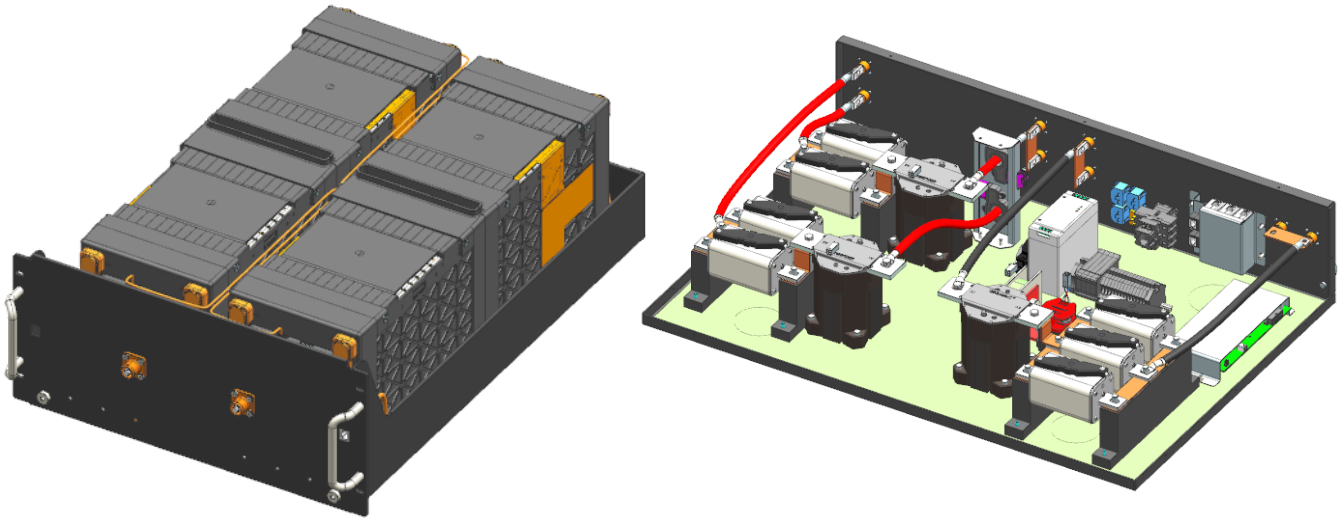

Figure 17 Drawer drawing