			Title		
			System Interface Specification (PP400-054)		
	RESPONSIBLE	DATE	SIZE	DOCUMENT NO.	REV
AUTHORS			A4	P300-5068	00
USER					
RELEASE			MANUAL CHANGE PROHIBITED		SHEET 1 OF 4

# *System Interface Specification*


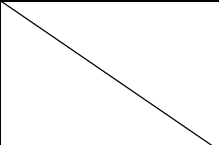
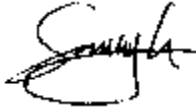
**PP400-054, 1.95kWh**

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# 1. Battery System Parameters

Specific parameters for the battery system blocks are detailed in the chart below

Parameter	Units	Specification	Note
Cell	Ah	20	SPB58253172P2
Series	n/a	13	One battery pack
Parallel	n/a	2	One battery pack
<b>Cell Voltage</b>			
Max	V	4.2	At 100% SOC
Nom	V	3.75	At 50% SOC
Min	V	3.0	At 0% SOC
<b>Cell Capacity</b>			
Rated	Ah	20	From cell specification
<b>Battery Configuration</b>			
Cell Modules	Modules	1	Each cell module contains 26 cells (13s2p)
<b>Battery Capacity (BOL)</b>			
Theoretical	Ah	40	Calculated based on cell capacity
Rated	Ah	-	Estimated when C/3 rate is used to determine capacity; current taper applied at end of charge
<b>Battery Capacity (EOL)</b>			
Theoretical	Ah	28	Estimated at 70%
<b>Battery Voltage</b>			
Max	V	54.6	Determined at maximum cell voltage
Nom	V	48.75	Determined at nominal cell voltage
Min	V	36	Determined at minimum cell voltage
<b>Battery Energy</b>			
Theoretical	kWh	1.95	Calculated value based on theoretical system capacity
Rated	kWh	-	Calculated value based on rated system capacity
Usable (typical)	kWh	1.17	Estimated energy between 20% and 80% SOC, de-rated specific to system application
Usable (max)	kWh	1.6	Estimated energy between 8% and 90% SOC, de-rated specific to system application
<b>Battery Discharge Power</b>			
Continuous	kW	0.975	At nominal system voltage (20.0A*48.75V)
Max	kW	7.8	At nominal system voltage (160A*48.75V)
Peak	kW	-	At nominal system voltage (system/cell peak, duration less than 10s)
<b>Battery Charge Power</b>			

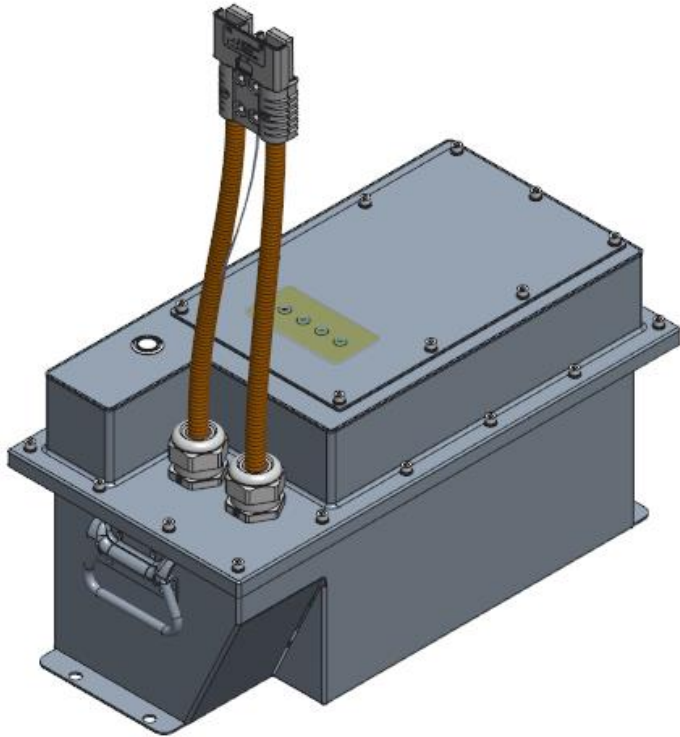
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Parameter	Units	Specification	Note
Continuous	kW	0.975	At nominal system voltage (20.0A*48.75V)
Max	kW	7.8	At nominal system voltage (160A*48.75V)
Peak	kW	-	At nominal system voltage (system/cell peak, duration less than 1s)
<b>Battery Discharge Current</b>			
Continuous	A	20	Continuous between 20% and 100% SOC, specific to system application
Max	A	160	Continuous between 20% and 100% SOC (system maximum continuous)
Peak	A	-	Between 20% and 100% SOC (system/cell maximum surge, duration less than 1s)
<b>Battery Charge Current</b>			
Continuous	A	20	Continuous between 0% and 80% SOC, specific to system application
Max	A	160	Continuous between 0% and 80% SOC (system maximum continuous)
Peak	A	-	Between 0% and 80% SOC (system/cell maximum surge, duration less than 10s)
Mass	kg	21.5	Approximate calculated value
Battery Shelf Life	years	5	Continuous between 20% and 80% SOC
Cell Balancing	Type	Dissipative	BMS Temperature Diagnostics
Thermal Management	Type	Limit Controlled	BMS Current Limited above normal cell operating temperature
<b>Operating Temperature/Humidity</b>			
Max	% RH	85	Range (cell min/max)
Min	% RH	45	Range (cell min/max)
Max	Degrees °C	55	Zero Current Limited Above Max Operating Temp
Min(Discharge)	Degrees °C	(-)20	Zero Current Limited Below Min Operating Temp
Min(Charge)	Degrees °C	0	Zero Current Limited Below Min Operating Temp
Storage Temperature	Degrees °C	(-)20 to 25 <1year	Range (cell min/max)
Pre-Charge	Type	n/a	HV Load Capacitance protection
GFD	n/a	n/a	BMS Isolated Diagnostics
EPO	n/a	n/a	Emergency Power OFF (interlock)

**Table 1 Product Technical Specifications**

## 2. Mechanical Drawings

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Parameter	Unit	Value
X Dimension	mm	251.5
Y Dimension	mm	480.0
Z Dimension	mm	262.0
Mass	kg	21.5
Volume	liter	31.62

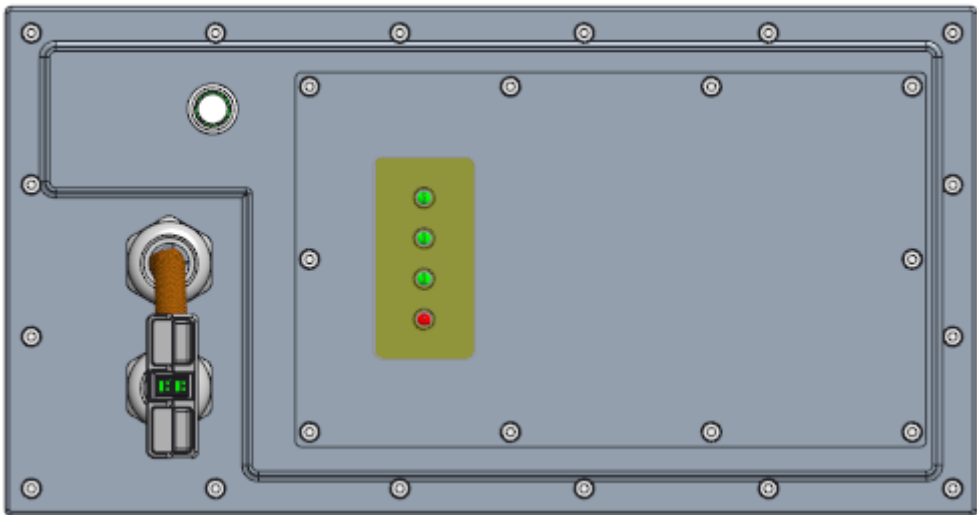


Figure 1 Pack Outline Drawing