Lead-Carbon Home Energy Storage System (ESS)

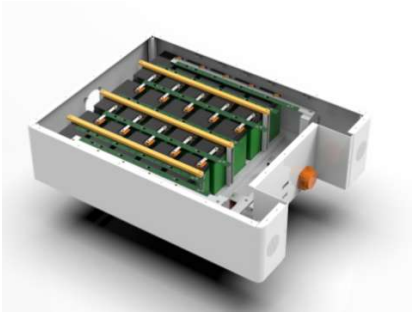
Technical Parameters

Physical Parameters	
Battery type	Lead-carbon battery
Battery manufacturer	CHILWEE
Overall Weight	422KG
Dimensions (L × W × H)	812.5×616×1081.5mm
Protection rating	IP20
Warranty	2 years
Electrical Performance Parameters	
Battery Pack Capacity	250Ah
Battery Pack Power	12 kWh
Rated power of the system	10kW, up to 12kW in case emergency
DOD of the battery pack	70% standard, up to 100% in case emergency
Rated voltage of the battery pack	48V
Operating voltage range of the battery	42V-58.8V
Internal resistance of the battery	≤1mΩ
Cycle life of the battery	≥3500
Operation Parameters	
Maximum charging current	125A（0.5C）
Maximum discharging current	500A（2C）
Operating temperature range	Charging：0°C~40°C Discharging：-15°C~45°C
Humidity	15%~85%
Battery Management System （BMU）	
Input voltage	42V~62V
Static power consumption	20μA
Working power consumption	2W
Communication interface	CAN*1，RS485*2
Current acquisition accuracy	≤1%
Data upload rate	1s
Operating temperature	-40°C~60°C
Dry Contact	Input * 1, Output * 1

Battery Cell Technical Parameters		
Battery type		Lead Carbon
Voltage / battery		4 Vdc
Voltage range		3.5 ~ 4.9 Vdc
Nominal capacity		50 Ah @ 10C
Rated power		200 Wh
Discharge depth range		0 ~ 100% , 70% recommended
Cycle life		3500 @25° DOD70 %
Guidance charging voltage		4.80Vdc ~ 4.90Vdc
Charging current	*Recommend*	0.5 C
	Max	1.0 C

Discharge current	*Recommend*	0.1 ~ 0.5 C
	Max	2 C
Ambient Temperature	*Charge*	0 ~ 40 ° C
	Discharge	-15 ° C ~ 45 ° C
Charge retention capability		96.3%
Water loss		0.6 g/Ah
Energy efficiency		87.9% (SoC 20% ~ 90%, DoD 70%)
Net weight		5.95 kg
Size		175.5 x 183.5 x 78.5 mm

Battery pack technical parameters		
Battery pack		3S5P
Battery pack voltage		12 Vdc
Voltage range		10.5 ~ 14.7 Vdc
Nominal capacity		250 Ah
Nominal power		3kWh
Heat dissipation method		Air Cooling
Balanced method		Passive balancing, supported by battery cells
Size		812.5 x 616 x 200 mm
Net weight		98kg +/-



ESS integration		
Battery pack		12S5P
Nominal voltage		48Vdc
Nominal capacity		250 Ah
Nominal system power		12 kWh

Inverter		
PV Input		
Maximum input power		12.5 kW max
Max DC Voltage		550V
Starting Voltage		120V
MPPT Working Voltage Range		60V ~ 480V
Nos of MPPT		2
Nos of MPPT String per Channel		1
MPPT Max Input Current per Channel		27A
AC Output (Grid Connected)		
Rated Power		10kW
Max Apparent Power		10kVA
Rated Voltage		230V
Frequency		50/60Hz
Output Current		43.5A
Power Factor		0.8 Lead - 0.8 lag
THDi		< 5%
Battery Pack Requirement		
Rated Battery Voltage		$48V_{dc}$

Max Charging & Discharging Current		220A / 240A
Battery Type		Li-on, Lead Acid
AC Output (Off-Grid)		
Rated Power		10kW
Rated Voltage		230V
Frequency		50 / 60Hz
Switching Time		<20ms@ Stand along <30ms@ Parallel
Efficiency		
Max Conversion Efficiency		96.5%
European Efficiency		95.5%
Others		
Ambient Temperature	*Work*	-10 ° C ~ 50 ° C
	Storage	-20 ° C ~ 50 ° C
Noise Level		＜75dB
Self Power Consumption		< 75W
Expansion Structure		Without transformer
Cooling Method		Air Cooling
Humidity	*Work*	10% RH ~ 90% RH , non-condensing
	Storage	5% RH ~ 95% RH , non-condensing
Altitude		≤ 2000 M

Battery Management System（BSU）			
Input voltage	6V~18V	Number of cell voltage sampling channels	6-way
Static power consumption	10μA	Temperature sampling accuracy	±1°C
Working power consumption	0.1W	Number of temperature sampling channels	6-way
Single cell voltage sampling accuracy	±5mV	Communication interface	RS485*1

Communication and monitoring	
Local	/W
Remote Connection	WiFi / 4G / LAN
Mobile apps	Available (Android)
Communication interface	RS485 / CAN 2.0 / Ethernet / Dry Contact

Certificates

CE EMC
IEC62477 CB
IEC62619 CB and Functional Safety Random Assessment
NRS097

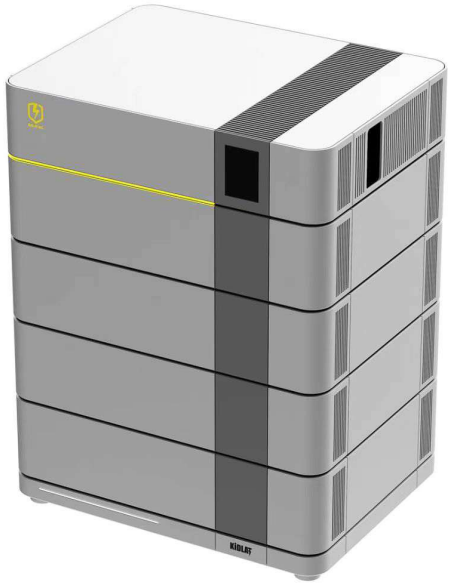
Solar Panel

***STC**: Light intensity1,000W/M², Battery temperature 25℃, Air quality = 1.5		***NMOT**: Light intensity 800W/M², Battery temperature 20℃, Air quality = 1.5, Wind speed 1m/s	
Rated Peak Power, $P_{mpp,}$ W_p	575	Rated Peak Power, $P_{mpp,}$ W_p	432.9
Rated Peak Voltage, $V_{mpp,}$ V	43.56	Rated Peak Voltage, $V_{mpp,}$ V	40.92
Rated Peak Current, I_{mpp}, A	13.20	Rated Peak Current, I_{mpp}, A	10.58
Open Circuit Voltage, V_{oc}, V	51.75	Open Circuit Voltage, V_{oc}, V	49.15
Short circuit current, I_{sc}, A	13.95	Short circuit current, I_{sc}, A	11.26
Module Full area efficiency	22.3%		
Output power tolerance	0 ~ +5W		

Temperature Coefficient		
Rated power temperature coefficient, P_{mpp}		- 0.29%/℃
Short circuit current temperature coefficient, I_{sc}		+0.043%/℃
Open circuit voltage temperature coefficient, V_{oc}		-0.24%/℃
Nominal Module Operation Temperature, NMOT		42±2℃
Operation Parameters		
Max System Voltage, IEC		1500V_{dc}
Nos of diodes		3
Junction Box IP class		IP 68
Maximum rated current of fuses in series		30A
Ambient Temperature		-40 ~ +85℃
Double sided ratio		80 ± 5%
Mechanical Parameters		
Dimensions, L x W x T		2278 x 1134 x 30 mm
Type of Battery Cells		N-type mono crystalline silicon
Nos of Cells		144 (6 x 24)
Frame material		Silver white anodized aluminum
Glass thickness		2.0 + 2.0 mm
Cable Length (Incl. Connector)		Vertical installation: (+) 300mm. (-) 300mm
Cable section (IEC)		4 mm^2 / 12 AWG
Maximum test mechanical load		5400 Pa (front) / 2400 Pa (Back)
Type of Connector		PV-HYC11xyz (Standard) / MC4 EVO2 (Optional)
Packing Information	Module Weight	32.1kg
	Nos per pallet	36 pcs / pallet
	Weight per pallet	1215 kg
	Load Qtty	900 pcs / 17.5M flat bed truck

Appearance design

** Pictures for reference only, might change anytime at out option*



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