

# CHS2 All In One Hybrid Energy Storage System



CHS2-50K-T6-X-P

### Maximizing revenue, Lowest LCOE

- 6MPPTs, 200% PV oversizing
- Intelligent coordination of green energy and DG, reducing fossil fuel consumption



### Highly integrated

- Utilizing solar and ESS, ALL-IN-ONE design simplifies installation steps



### Exceptional adaptability across various scenarios

- AC & DC coupling
- VPP ready
- On/Off-Grid Switching, Micro-grid, Agrivoltaic+ESS System



### Flexible configuration

- Up to 10 pcs parallel connection
- Battery capacity: 57kWh-4MWh



MODEL	CH2-50K-T6-P
<b>DC Input</b>	
Max. PV Array Power [Wp]@STC	100000
Max. DC Voltage [V]	1000
MPPT Voltage Range [V]	180 ~ 850
Rated DC Voltage [V]	600
Start Voltage [V]	200
Max.DC Input Current [A]	6*45
Max.DC Short Circuit Current [A]	6*55
Number of Strings per MPPT	2
<b>Battery Parameters</b>	
Battery Type	LiFePO4
Battery Voltage Range[V]	180 ~ 800
Max.Charging/Discharging Current [A]	150
<b>AC Output [On-grid]</b>	
Rated AC Power [W]	50000
Max.Apparent Power[VA]	55000
Rated Output Current[A]@230V	72.5
Max. Output Current [A]@220V/230V	79.8
Rated AC Voltage/Range [V]	3+N+PE, 380/ 400
Rated Output Frequency/Range [Hz]	50,60/45 ~ 55,55 ~ 65
Power Factor [cos φ]	0i - 1 - 0c
Total Harmonic Distortion [THDI]	<3%
<b>AC input [On-grid]</b>	
Rated AC Voltage [V]	3+N+PE,380/400/415
Rated Output Frequency [Hz]	50, 60
Max. Input Current [A]	200
<b>AC Output [Back-up]</b>	
Max.Output Power [VA]	55000
Peak Output Apparent Power [VA]	75000,5s
Rated AC Voltage [V]	3+N+PE,380/ 400
Rated Output Frequency/Range [Hz]	50,60/45 ~ 55,55 ~ 65
Output THDv (@ Liner Load)	<3%
<b>AC Input [Generator]</b>	
Max. Input Power [W]	138000
Max. Input Current [A]@220V/230V	200
Rated Input Voltage [V]	3+N+PE,380/ 400
Rated Input Frequency/Range [Hz]	50,60/45 ~ 55,55 ~ 65
<b>Efficiency</b>	
Max. Efficiency	≥98.0%
Max. Battery to AC Efficiency	96.0%
<b>Protection</b>	
PV Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC switch	Integrated
DC Surge Protection	II
AC Surge Protection	II
AFCI	Integrated
RSD	Optional
<b>General Parameters</b>	
Communication	Wi-Fi/Ethernet/CAN/RS485
Topology	Transformerless
Operating Temperature Range	-40°C to +60°C (45°C to 60°C with derating)
Cooling Method	Smart Fan Cooling
Ambient Humidity	0-100% Non-condensing
Altitude [m]	≤3000
Ingress Protection	IP66
Dimensions [H*W*D] [mm]	630*900*290
Weight [kg]	89
Warranty [Year]	5/10

MODEL	CHS2-50K-T6-X-P
<b>DC Input</b>	
Max. PV Array Power [Wp]@STC	100000
Max. DC Voltage [V]	1000
MPPT Voltage Range [V]	180 ~ 850
Rated DC Voltage [V]	600
Start Voltage [V]	200
Max. DC Input Current [A]	6*45
Max. DC input current of a single string [A]	22.5
Max. DC Short Circuit Current [A]	6*55
Number of Strings per MPPT	2
<b>Battery Parameters</b>	
Battery Type	LiFePO4
Rated Energy [kWh]	57.3 - 100.3
Battery Voltage Range [V]	179.2 - 403.2
Max. Charging/Discharging	140
<b>AC Output [On-grid]</b>	
Rated AC Power [W]	50000
Max. Apparent Power [VA]	55000
Rated Output Current [A]@230Vac	72.5
Max. AC Output Current to Utility Grid [A]	79.8
Current Inrush[A]	192
Max. AC Fault Current[A]	182.6
Max. AC Over Current Protection[A]	145
Rated AC Voltage [V]	3+N+PE,380/ 400
Rated Output Frequency/Range [Hz]	50, 45 - 55
Power Factor [cos φ]	0i - 1 - 0c
Total Harmonic Distortion [THDI]	<3%
<b>AC Input [On-grid]</b>	
Rated AC Voltage [V]	3+N+PE, 380/400
Rated Input Frequency [Hz]	50, 60
Max. Input Current [A]	200
<b>AC Input [Generator]</b>	
Max. Input Current [A]@230V	200
Rated Input Voltage [v]	3+N+PE, 380/400
Rated Input Frequency/Range [Hz]	50, 45 - 55
<b>AC Output [Back-up]</b>	
Max. Apparent Power [VA]	55000
Peak Output Apparent Power [VA]	75000,5s
Rated AC Voltage [V]	3+N+PE, 380/400
Rated Output Frequency/Range [Hz]	50, 45 - 55
Output THDv (@ Liner Load)	<3%
<b>Efficiency</b>	
Max. Efficiency	≥98.0%
Euro Efficiency	97.3%
Max. Battery to AC Efficiency	96.0%
<b>Protection</b>	
PV String Current Monitoring	Integrated
PV Insulation Resistance Detection	ntegrated
Residual Current Monitoring	Integrated
PV Reverse Polarity Protection	Integrated
Anti-islanding Protection	AFD
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC switch	Integrated
DC Surge Protection	II
AC Surge Protection	II
AFCI	Integrated
RSD	Optional
<b>General Parameters</b>	
Communication	Wi-Fi/Ethernet/RS485
Topology	Non-isolated
Operating Temperature Range	-30°C to +50°C (45°C to 50°C with derating)
Cooling Method	Air Conditioner
Ambient Humidity	0-100% Non-condensing
Altitude [m]	2000
Ingress Protection	IP55, IP66(Inverter)
Dimensions [H*W*D] [mm]	1980*988*1065
Weight [kg]	1035(57.3kWh)/1145(71.6kWh)/1255(85.9kWh)/1365(100.3kWh)
Warranty [Year]	5/10
Standard	VDE4105, IEC61727/62116, VDE0126, AS4777.2, CEI 0-21, EN50549-1, G98, G99, C10-11, UNE217002, NBR16149/NBR16150, IEC62109-1/-2, NBT32004-2018, EN61000-6-1,EN61000-6-2,EN61000-6-3, EN61000-6-4

MODEL	CB2-57.3-HV5	CB2-71.6-HV5	CB2-85.9-HV5	CB2-100.3-HV5
Rated Energy [kWh]	57.3	71.6	85.9	100.3
Usable Energy [kWh]	51.5	64.4	77.3	90.2
Rated Capacity [Ah]	280	280	280	280
No. of Modules	4	5	6	7
Nominal Voltage [V]	204.8	256	307.2	358.4
Voltage Range [V]	179.2~230.4	224~288	268.8~345.6	313.6~403.2
Charge/Discharge Current [A]	140	140	140	140
Rated Power [kW]	28.6	35.6	42.9	50.1
Weight [kg]	960	1060	1160	1260
Dimension [H*W*D] [mm]	1980*988*1065			
Communication	CAN			
Operating Temperature Range [°C]	-30~50			
Cooling Method	Air Conditioner			
Relative Humidity	5~95% (No Condensing)			
Altitude [m]	2000			
Ingress Protection	IP55			
Mounting	Ground-Mounted			
<b>Control Module</b>	<b>CBC2-HV5</b>			
Weight [kg]	28			
Dimension [H*W*D] [mm]	225*483*610			
<b>Battery Module</b>	<b>CBU2-14.33-HV5</b>			
Rated Energy [kWh]	14.33			
Weight [kg]	115			
Dimension [H*W*D] [mm]	231*523*805			
Applicable Standard	IEC62619-2017, UN38.3, IEC61000-6-2/4, IEC62477			

## CB2-X-HV5

CB2(IP20) is a flexible and safe battery energy storage system, featuring an intelligent BMS and flexible configuration options, suitable for efficient backup power during emergency outages and renewable energy storage. This solution is flexible in configuration and economical, and can meet the project needs of different customers from tens of kWh to MWh.



### Scalability

Supporting 4 clusters in parallel, a capacity of one cluster ranges from 57.3 to 186.2kWh

### Cost-effective

Affordable high-performance 280Ah LFP battery system with smart thermal management

### Smart O&M

Supporting remote firmware upgrade

CB2-X-HV5

SYSTEM	CB2-X-HV5
Battery System energy [kWh]	57.3~186.2
Rated Capacity [Ah]	280
Charge/Discharge Current [A]	140
No. of Modules	4~13
Communication	CAN
Operating Temperature Range [°C]	Charging: 0~55; Discharging: -20~55
Cooling Method	Smart Fan Cooling
Relative Humidity	5~90 (No Condensing)
Altitude [m]	2000
Ingress Protection	IP20
Mounting	Ground-Mounted
<b>Control Module</b>	<b>CBC2-HV5</b>
Voltage Range [V]	160~1000
Weight [kg]	28
Dimension [H*W*D] [mm]	225*483*610
<b>Battery Module</b>	<b>CBU2-14.33-HV5</b>
Rated Energy [kWh]	14.33
Weight [kg]	115
Dimension [H*W*D] [mm]	231*523*805
Applicable Standard	IEC62619-2017; UN38.3; IEC61000-6-2/4; IEC62477
<b>Battery Rack</b>	<b>CBT2-186.2-HV5</b>
Number of installable battery modules	8~13
Supported energy storage system capacity [kWh]	114.6~186.2
Rack Weight [kg]	141
System weight with 13 battery modules [kg]	1671
Dimension [H*W*D] [mm]	1960*1106*857
<b>Battery Rack</b>	<b>CBT2-100.3-HV5</b>
Number of installable battery modules	4~7
Supported energy storage system capacity [kWh]	57.3~100.3
Rack Weight [kg]	101
System weight with 7 battery modules [kg]	941
Dimension [H*W*D] [mm]	1243*1106*857