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RESIDENTIAL

ENERGY STORAGE SOLUTIONS

www.saj-electric.com

24H

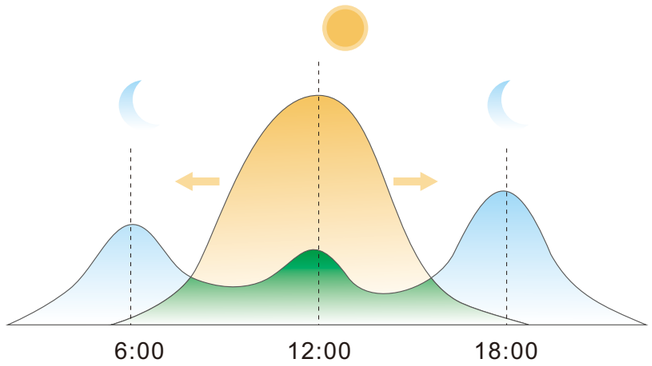
POWERING YOUR HOME

SAJ energy storage systems provide customers with smart energy solutions, which considerably enhance power independence and provide more flexibility in residential energy management.

With UPS function, SAJ solar storage products guarantee an uninterrupted power supply at your home even when grid fails.

SAVING BILLS VIA PEAK LOAD SHIFTING

Due to the different rates of grid power, customers can set up the charging and discharging time of battery to reduce the electricity bills. Battery can be charged from grid at low grid price rates and be discharged to supply loads when the power price is expensive.



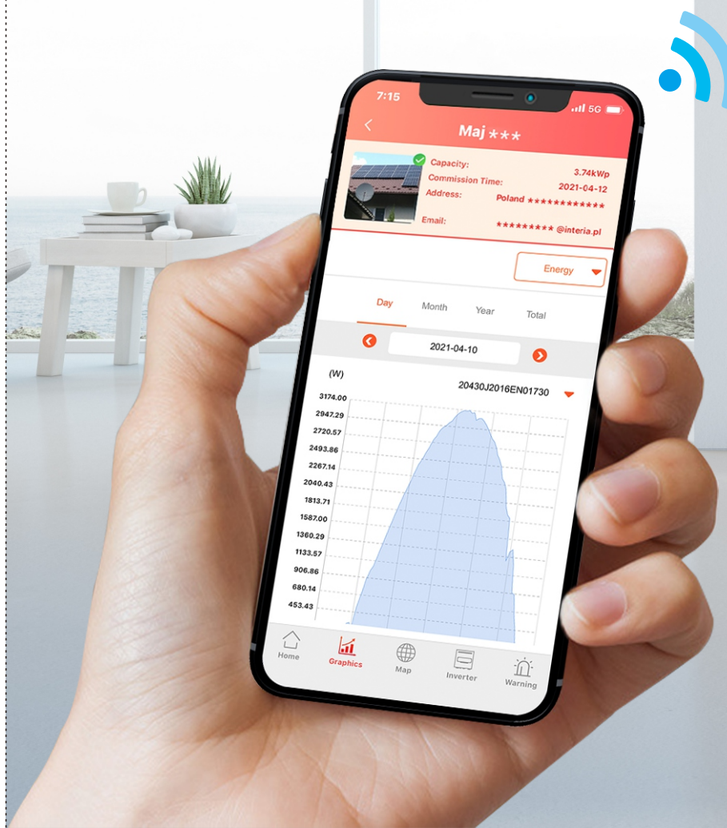
- Consumption of stored energy
- Comsumption of solar energy
- Solar energy production

GUARANTEE YOUR POWER SUPPLY WITH BACKUP POWER

Under Back-up Mode, the electricity stored in battery can be saved for powering essential appliances when grid fails. When power outage occurs, the back-up mode can be switched ON automatically within 10 milliseconds.

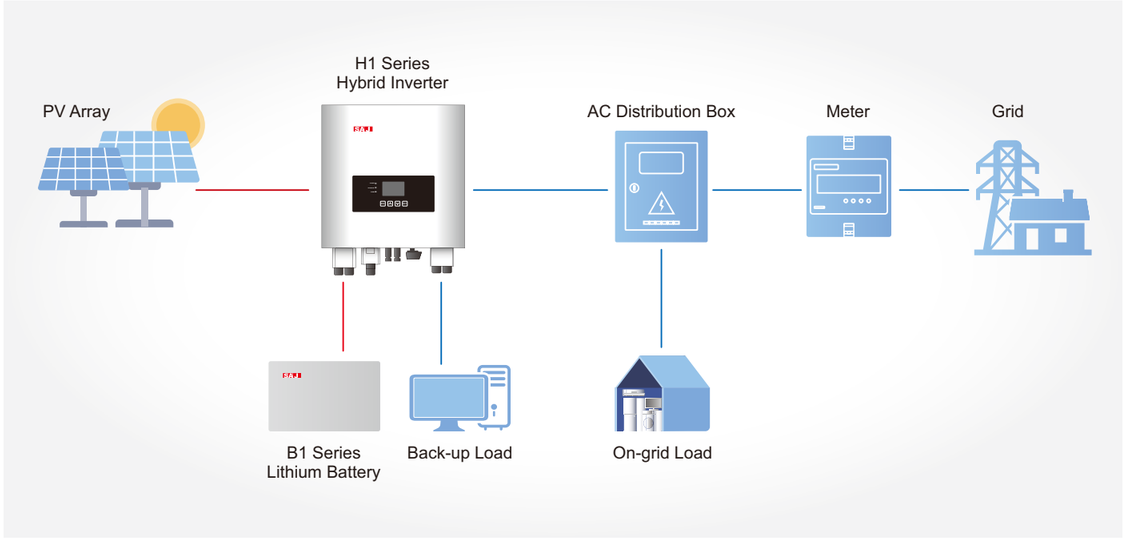
SMART HOME & ENERGY MANAGEMENT

eSolar Portal (eSolar Web & eSolar APP) is a cloud based platform developed and maintained by SAJ team, the platform furnishes with data monitoring, remote maintenance and energy management. eSolar Portal brings all the energy into visualization for an easy maintenance anytime, anywhere.



H1 Hybrid Solar System Diagram

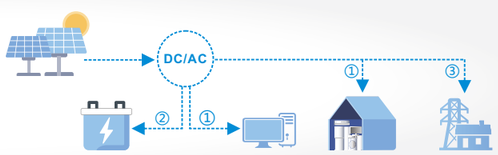
H1 inverter can significantly improve the self-consumption rate of solar energy and lower the dependency on grid.
The energy generated by PV system will be fed to loads first, and then the surplus energy can charge the battery for later use, if there is still more excess energy, it will be exported to the grid.



H1 Working Modes

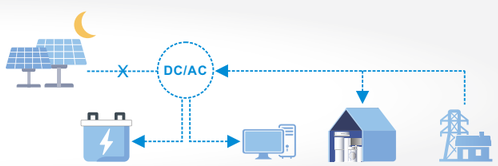
Self-consumption Mode

Throughout the day, the power generated by PV system will supply household loads first , and then saving surplus energy to battery that can be used at any time, the excess electricity could be exported to grid.



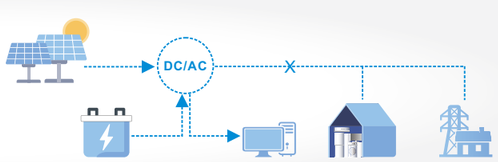
Time-of-use mode

Battery charging and discharging time can be flexibly set based on your local peak and off-peak electricity period to minimum the utility bills.



Back-up mode

Back-up mode is able to maintain the battery in a discharged state to power the back-up loads when power outage.



H1 SINGLE PHASE SERIES

H1-3K/3.6K/4K/4.6K/5K/6K-S2; H1-4.6K/5K/6K-LS2

UPS — With UPS function switch time < 10ms

Zero export function supported

24H energy monitoring and management

Easy settings of smart working modes

Max. 100A charge current

Fanless design quiet and comfortable

H1-3K/3.6K/4K/4.6K/5K/6K-S2 Datasheet

Model	H1-3K-S2	H1-3.6K-S2	H1-4K-S2	H1-4.6K-S2	H1-5K-S2	H1-6K-S2
Input DC						
Max. PV Array Power [Wp] @STC	4500	5400	6000	6900	7500	9000
Max. DC Voltag [V]	600					
MPPT Voltage Range [V]	90-550					
Nominal DC Voltage [V]	360					
Start Voltage [V]	120					
Min. DC Voltage [V]	80					
Max. DC Input Current [A]	12.5/12.5					
Max. DC Short Circuit Current [A]	15/15					
Number of MPPT	2					
DC Switch	Integrated					
Battery Parameters						
Battery Type	Lithium battery					
Rated Input Voltage/Voltage Range [V]	48/42~58.5					
Max/Rated Charging Current [A]	60/60			100/100		
Charging Mode Control	3-stages					
Grid Parameters						
Rated Output Power [W]	3000	3680	4000	4600	5000*1	6000
Max.Output Power [VA]	3000	3680	4000	4600	5000	6000
Rated Output Current [A]	13.1	16.0	17.4	20.0	21.8*2	26.1
Max. Output Current [A]	13.6	16.7	18.2	20.9	22.7	27.3
Rated Grid Voltage/Range [V]	220,230,240/180~280					
Rated Grid Frequency/Range [Hz]	50,60/±5					
Power Factor [cos φ]	0.8 leading~0.8 lagging					
Total Harmonic Distortion [THDi]	< 3%					
Feed-in	L+N+PE					
AC Output [Back-up Mode]						
Max. Output Power [VA]	3000			4600	5000	
Peak Output Apparent Power [VA]	3600, 10sec			5500, 10sec	6000, 10sec	
Output Voltage [V]	220/230/240					
Output Frequency [Hz]	50/60					
Total Harmonic Distortion of Voltage	<3%					
Efficiency						
Max. Efficiency	97.6%					
Euro Efficiency	97.0%					
Max. Battery to Load Efficiency	94.6%					
Protection						
AC Short-circuit Protection	Integrated					
Overload Protection	Integrated					
DC Overvoltage/Undervoltage Protection	Integrated					
AC Overvoltage/Undervoltage Protection	Integrated					
AC Overfrequency/Underfrequency	Integrated					
Peak-to-trough Period Setting	Integrated					
Interface						
PV Input	MC4					
Battery	Terminal block					
Display	LCD					
Communication Mode	Wi-Fi/ GPRS/ Ethernet (Optional)					
General Data						
Operating Temperature Range	-25°C to +60°C [45°C to 60°C with derating]					
Cooling Method	Natural convection					
Ambient Humidity	0-100% non-condensing					
Altitude	4000m (>3000m power derating)					
Noise [dBA]	< 29					
Ingress Protection	IP65					
Dimensions [H*W*D] [mm]	470*470*190					
Weight [kg]	23					
Standard Warranty [Year]	5					
Applicable Standard	IEC62109-1/2, IEC61000-6-1/2/3/4, EN50438, EN50549, C10/C11, IEC62116, IEC61727, RD1699, UNE 206006, UNE 206007, CEI 0-21, AS4777.2, CQC NB/T 32004, VDE-AR-N 4105					

Remarks: *1 For AS/NZS 4777.2 Rated Output Power is 4999VA. *2 For AS/NZS 4777.2 Rated Output Current is 21.7A.

H1-4.6K/5K/6K-LS2 Datasheet

Model	H1-4.6K-LS2	H1-5K-LS2	H1-6K-LS2
Input DC			
Max. PV Array Power [Wp] @STC	6900	7500	9000
Max. DC Voltag [V]	600		
MPPT Voltage Range [V]	90-550		
Nominal DC Voltage [V]	360		
Start Voltage [V]	120		
Min. DC Voltage [V]	80		
Max. DC Input Current [A]	12.5/12.5		
Max. DC Short Circuit Current [A]	15/15		
Number of MPPT	2		
DC Switch	Integrated		
Battery Parameters			
Battery Type	Lithium battery		
Rated Input Voltage/Voltage Range [V]	48/42~58.5		
Max/Rated Charging Current [A]	60/60		
Charging Mode Control	3-stages		
Grid Parameters			
Rated Output Power [W]	4600	5000*1	6000
Max.Output Power [VA]	4600	5000	6000
Rated Output Current [A]	20.0	21.8*2	26.1
Max. Output Current [A]	20.9	22.7	27.3
Rated Grid Voltage/Range [V]	220, 230, 240/180~280		
Rated Grid Frequency/Range [Hz]	50, 60/±5		
Power Factor [cos φ]	0.8 leading~0.8 lagging		
Total Harmonic Distortion [THDi]	<3%		
Feed-in	L+N+PE		
AC Output [Back-up Mode]			
Max. Output Power [VA]	3000		
Peak Output Apparent Power [VA]	3600, 10sec		
Output Voltage [V]	220/230/240		
Output Frequency [Hz]	50/60		
Total Harmonic Distortion of Voltage	< 3%		
Efficiency			
Max. Efficiency	97.6%		
Euro Efficiency	97.0%		
Max. Battery to Load Efficiency	94.6%		
Protection			
AC Short-circuit Protection	Integrated		
Overload Protection	Integrated		
DC Overvoltage/Undervoltage Protection	Integrated		
AC Overvoltage/Undervoltage Protection	Integrated		
AC Overfrequency/Underfrequency	Integrated		
Peak-to-trough Period Setting	Integrated		
Interface			
PV Input	MC4		
Battery	Terminal block		
Display	LCD		
Communication Mode	Wi-Fi/ GPRS/ Ethernet (Optional)		
General Data			
Operating Temperature Range	-25°C to +60°C [45°C to 60°C with derating]		
Cooling Method	Natural convection		
Ambient Humidity	0-100% non-condensing		
Altitude	4000m (>3000m power derating)		
Noise [dBA]	< 29		
Ingress Protection	IP65		
Dimensions [H*W*D] [mm]	470*470*190		
Weight [kg]	23		
Standard Warranty [Year]	5		
Applicable Standard	IEC62109-1/2, IEC61000-6-1/2/3/4, EN50438, EN50549, C10/C11, IEC62116, IEC61727, RD1699, UNE 206006, UNE 206007, CEI 0-21, AS4777.2, CQC NB/T 32004, VDE-AR-N 4105		

Remarks: *1 For AS/NZS 4777.2 Rated Output Power is 4999VA. *2 For AS/NZS 4777.2 Rated Output Current is 21.7A.

H1 THREE PHASE SERIES

H1-5K/6K/8K/10K/15K/20K-T2

15A DC 15A/ string matched with ultra high power modules

Local & remote monitoring via mobile and PC device

Battery input voltage range 180-800Vdc

Easy setting of smart working modes

Zero export function supported

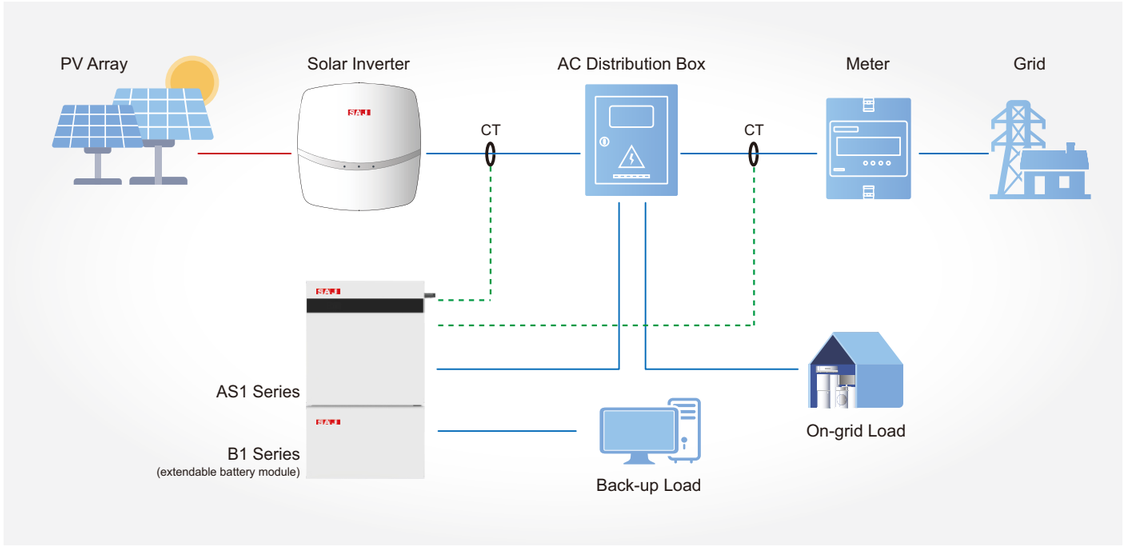
UPS With UPS function switch time < 10ms

H1-5K/6K/8K/10K/15K/20K-T2 Datasheet

Model	H1-5K-T2	H1-6K-T2	H1-8K-T2	H1-10K-T2	H1-15K-T2	H1-20K-T2
DC Input						
Max. PV Array Power [Wp]@STC	6000	7200	9600	13000	22500	30000
Max. DC Voltage [V]	1000					
MPPT Voltage Range [V]	200～850					
Start Voltage [V]	180					
Max. DC Input Current [A]	15/15				30/30	
No. of MPPT	2					
No. of Strings per MPPT	1/1				2/2	
Battery Parameters						
Battery Type	Lithium battery					
Voltage Range [V]	180-800					
Max. Charging/ Discharging Current [A]	25				50 (25A/25A)	
Rated Charging/ Discharging Power [W]	5000	6000	8000	10000	15000	20000
Grid Parameters						
Rated Output Power [W]	5000	6000	8000	10000	15000	20000
Max. Output Power [VA]	5500	6600	8800	11000	16500	22000
Rated Output Current [A]	7.6	9.1	12.1	15.2	22.8	30.3
Max. Output Current [A]	8.4	10	13.4	16.7	25	33.4
Rated Output Voltage [V]	220/380Vac, 230/400Vac, 3L/N/PE					
Rated Output Frequency [Hz]	50/60 Hz					
Power Factor [cos φ]	0.8 leading~0.8 lagging					
Total harmonic Distortion [THDi]	<3%					
AC Output [Back-up Mode]						
Rated Output Power [W]	5000	6000	8000	10000	15000	20000
Rated Output Voltage [V]	220/380Vac, 230/400Vac, 3L/N/PE					
Rated Output Frequency [Hz]	50					
Output THDv (@ Liner Load)	<3%					
Peak Output Apparent Power [VA]	10000VA 60s	12000VA 60s	16000VA 60s	16500VA 60s	20000VA 60s	22000VA 60s
Max.Output Current [A]	8.5	10	13.5	16.5	24	32
Efficiency						
Max. Efficiency	98.00%				98.20%	
Europe Efficiency	97.60%				97.70%	
MPPT Efficiency	>99.9%				>99.9%	
Max. Battery Charging/ Discharging Efficiency	97.6%				97.8%	
Protection						
DC Switch	Integrated					
AC Short-circuit Protection	Integrated					
Overload Protection	Integrated					
DC Overvoltage/ Undervoltage Protection	Integrated					
AC Overvoltage/ Undervoltage Protection	Integrated					
AC Overfrequency/ Underfrequency Protection	Integrated					
Over Temperature Protection	Integrated					
Anti-islanding Protection	Integrated					
Peak-to-trough Period Setting	Integrated					
Interface						
PV Input	MC4					
Battery	Quick connector					
AC Output	5P connector					
Display	LCD					
Communication	Wi-Fi/ Ethernet/ 4G/ CAN/ RS485					
General Data						
Topology	Transformerless					
Ingress Protection	IP65					
Operating Temperature Range	-25℃～+60℃					
Ambient Humidity	0～100%					
Altitude	≤ 4000m					
Noise [dB]	< 30				< 45	
Cooling Method	Natural convection				Fan cooling	
Dimensions [H*W*D][mm]	525*395*214				570*450*214	
Weight [kg]	27				33	
Applicable Standard	CEI 0-21, VDE4105-AR-N, VDE0126-1-1, EN50438, G83/2; G100, EN50549, AS4777.2 IEC62109-1&-2, IEC62040-1, EN61000-6-1/2/3/4					

AS1 AC Retrofit Battery System

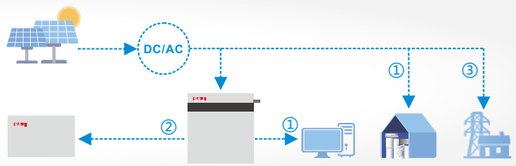
AS1 series is designed to convert and upgrade the existing grid-tied PV systems into a storage one. Throughout the day, the power generated by PV system will supply to household loads first, and then saving surplus energy to battery that can be used at any time, the excess electricity could be exported to grid. Battery charging and discharging time can be flexibly set based on your local peak and off-peak electricity period to minimum the utility bills.



AS1 Working Modes

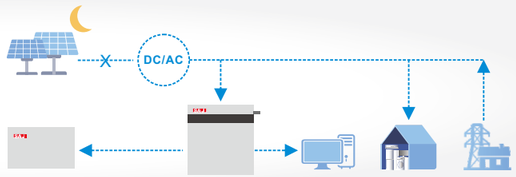
Self-consumption Mode

Power supply priority: ① Load ② Battery ③ Export to Grid



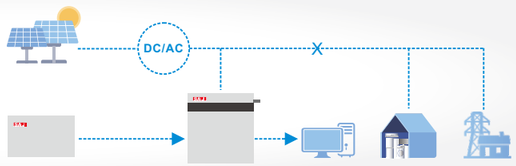
Time-of-use mode

On the basis of Self-consumption Mode, Time-of-use Mode needs extra settings of charge and discharge hours to the battery.



Back-up mode

In Backup Mode, PV power will charge battery first until its SOC reaches 100%.
Battery will not discharge unless the grid is blackout.



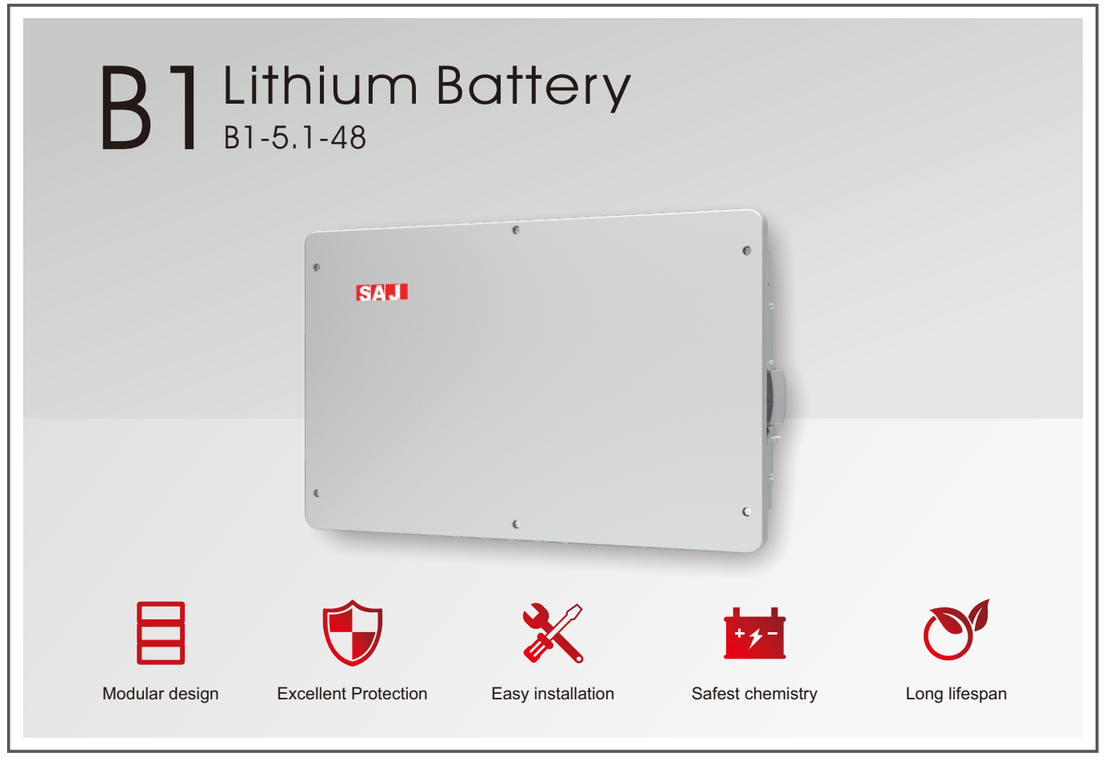
AS1 SERIES

AS1-3KS-5.1

- Flexibility in retrofitting the existing system
- Built-in 5.1kWh lithium battery (extendable)
- Compatible with all inverter brands
- Switch time < 10ms no harm to electrical appliance
- With UPS function no worries about power outage
- Fanless design quiet and comfortable

AS1-3KS-5.1 Datasheet

Model	AS1-3KS-5.1
Battery Parameters	
Battery Type	Lithium-iron phosphate (LiFePO4)
Total Energy Capacity [Wh]	5120
Battery Capacity [Ah]	100
Rated Voltage [V]	51.2
Voltage range [V]	42~58.4
Depth Of Discharge [DOD]	≤ 90%
Cycle Life	≥ 6000
Max.Charge Current [A]	60
Max.Discharge Current [A]	60
Scalability	Yes (up to 20.4kWh)
Grid Parameters	
Max.Continuable Output Power [VA]	3000
Max.Output Current [A]@230Vac	13.1
Rated Grid/Backup Voltage/Range [V]	220, 230, 240/180~280
Rated Grid/Backup Frequency/Range [Hz]	50, 60/±5
Power factor [cos φ]	0.8 leading~0.8 lagging
Feed-in	L+N+PE
AC Output [Back-up Mode]	
Max. Continuable Output Power [VA]	3000
Output Voltage [V]	220/230/240
Max.Output Current [A]@230Vac	13.1
Output Frequency [Hz]	50/60
Max.Output Power [VA]	3600, 10sec
General Data	
Communication Mode	Wi-Fi/ 4G/ Ethernet (Optional)
Operating Temperature Range	0°C~50°C (above 45 °C battery performance degrades)
Cooling Method	Natural Convection
Ambient Humidity	0-95% Non-condensing
Noise [dBA]	< 29
Ingress Protection	IP65
Dimensions [H*W*D][mm]	738*650*186
Weight [kg]	64
Standard Warranty [Year]	5 (Standard)/ 10 (Optional)
Applicable Standard	AS 4777.2, VDE 4105, G98, C10/C11, CEI0-21, IEC62619, IEC62040



Model	B1-5.1-48
Electrical Characteristics	
Total Energy Capacity [Wh]	5120
Usable Capacity [Wh]	4600
Rated Voltage [V]	51.2
Voltage range [V]	42~58.4
Depth Of Discharge [DOD]	≤ 90%
Cycle Life	≥ 6000
Max.Charge Current [A]	60
Max.Discharge Current [A]	60
Physical Parameters	
Battery Type	Lithium-iron phosphate (LiFePO4)
Communication	CAN
Operating Temperature Range	0°C~50°C
Cooling Method	Natural convection
Ambient Humidity	0-95% non-condensing
Ingress Protection	IP65
Dimensions [H*W*D][mm]	410*650*186
Weight [kg]	48
Standard Warranty [Year]	5 (Standard) / 10 (Optional)
Applicable Standard	UN38.3, IEC 62619