Li-HV Residential Three Phase Hybrid Series

Inverter Options

6-20KW-20/40A-40P

GEN 3.0 HV Battery Options

3.84 kWh, 92.16kWh(30.72kWh*3) per inverter

The Wattsonic Li-HV Residential Three-Phase Hybrid series delivers exceptional performance and flexibility, with power configurations from 6 kW to 20 kW and up to nearly 921 kWh of usable energy in parallel (on-grid). This all-in-one system integrates an intelligent inverter, advanced BMS, and customizable battery storage, designed for effortless plug-and-play installation with no on-site cabling required. It features various customizable running modes, including the innovative Time-of-Use (ToU) Mode, which allows customers to optimize energy costs and maximize grid utility benefits. Whether you're looking for smart, scalable, or resilient energy solutions, this series is the ideal choice for homeowners seeking to optimize energy efficiency and effortlessly integrate renewable energy into their daily lives.

Effortless and Fast Installation

- All-in-one: all necessary components included, no on-site cabling required
- Designed for a one-man installation degree with minimal effort
- Free from complicated settings—plug-and-play
- Versatile mounting options with modular design—wall-mountable or stackable

Unmatched scalability for various energy needs

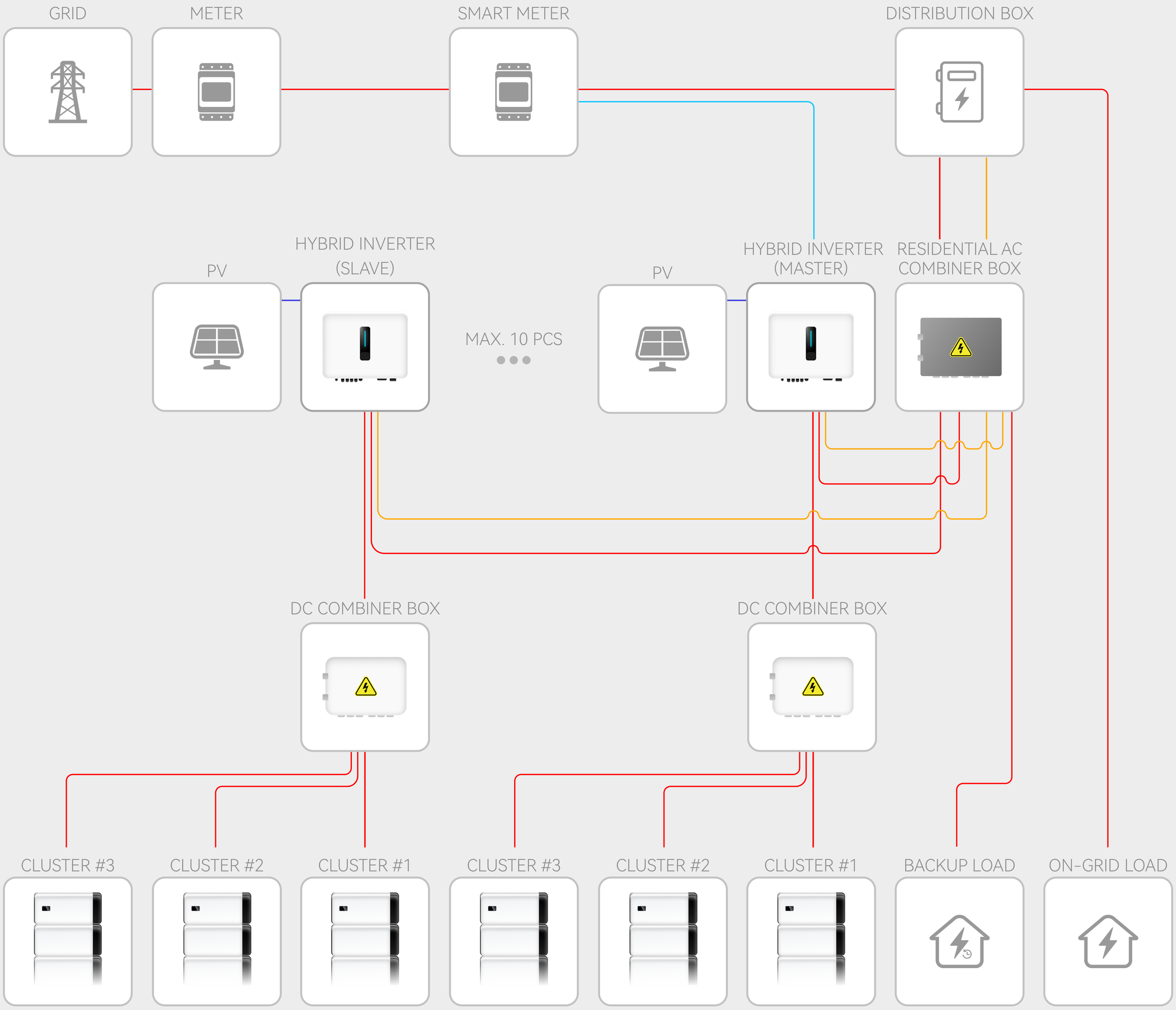
- Support up to 10 inverters in parallel (On-grid)
- Support up to 4 inverters (Off-grid) in Smart Micro-grid extension
- Max. 92.16 kWh usable energy for battery—3 clusters of 30.7 kWh each

Diverse integrations for lower energy bills

- Smart Heating Pump (SG Ready function) integration
- Smart EV Charger system integration
- WattMate smart heating regulator integration

Optimize energy with WattDesk Cloud management

- Real-time data tracking every second for comprehensive monitoring, accurate down to the level of each individual battery cell.
- Customizable running modes with the new Time-of-Use (ToU) Mode, setting different sub-modes in various periods
- Advanced AI support ensures continuous and dynamic battery cell balancing
- Stay informed with automatic notifications and remote firmware updates for swift issue resolution



Battery Capacity/ per inverter supported

*Max. 92.16 kWh usable energy
— 3 clusters * 30.7 kWh (8 units)

Inverter Scalability

*Max. 10 units for on-grid applications
*Max. 4 units for off-grid scenarios

Scalable, Resilient, Localized

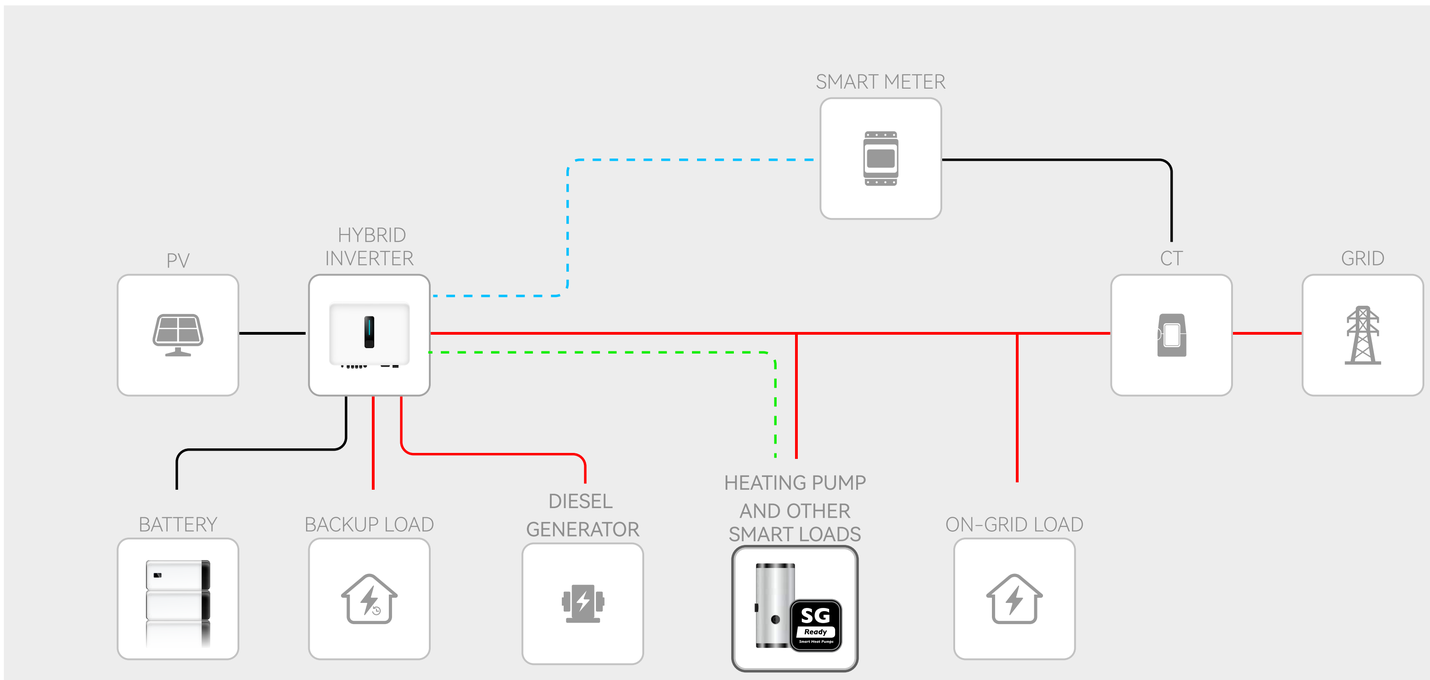
In off-grid scenarios, common challenges include limited scalability, power interruptions, uneven load distribution, and inadequate energy storage,etc. A key enhancement in the Wattsonic Li-HV Residential Three-Phase Hybrid series is the introduction of cascading connections, which improve scalability and user-friendliness. Additionally, the system integrates seamlessly into **smart micro-grid applications**, offering localized, resilient power solutions to meet modern energy demands.

Redefine the way we live

Smart Heating Pump (SG Ready) Integration

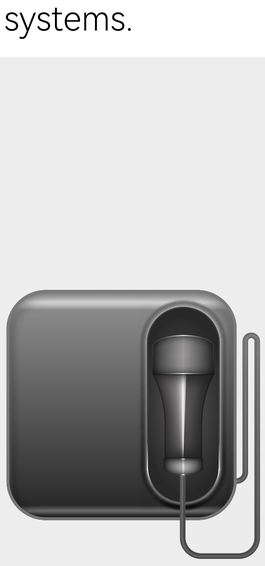
The Li-HV Residential Three-Phase Hybrid System has been upgraded with firmware to integrate seamlessly with SG Ready heat pumps or other heating elements, enabling intelligent control and efficient utilization of excess solar energy to maximize power self-sufficiency. This integration also supports customized scheduling, enabling users to pre-set operation times based on solar generation patterns, resulting in cost savings and a more stable grid load.

Smart Heating Pump
(SG Ready)

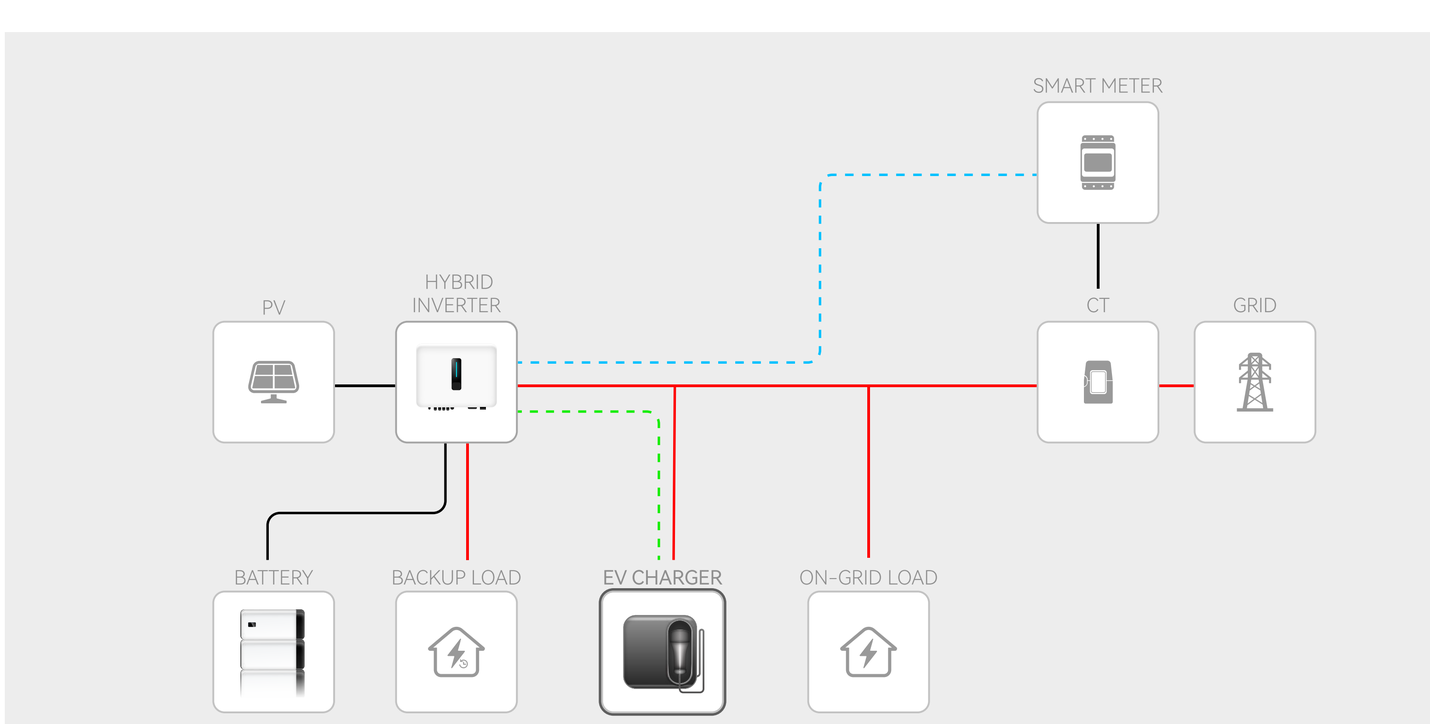


Smart EV Charger Integration

For electric vehicle (EV) owners, the Wattsonic Li-HV three-phase hybrid residential energy storage system integrates seamlessly with Smart EV Chargers, offering efficient management and scheduling to keep your EV ready while boosting energy efficiency. Wattsonic also provides an one-stop solution that includes a standard EV charger, compatible with both single-phase and three-phase energy storage systems.



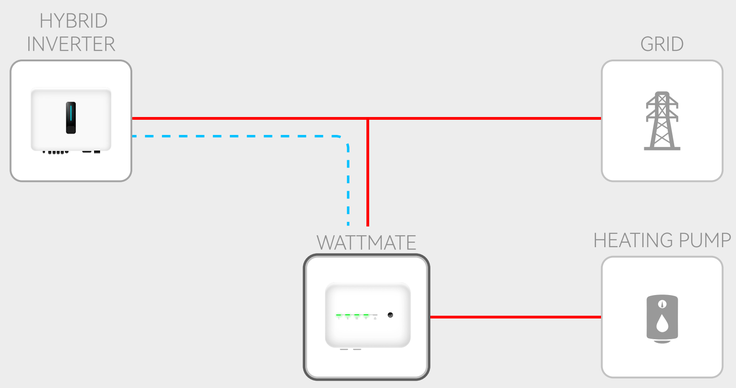
Smart EV Charger



WattMate Smart Heater Regulator Integration

By integrating with the WattMate Smart Heater Regulator, your system can capture surplus unused PV solar energy to heat water, reducing the need to purchase electricity from the grid. Furthermore, you can monitor device status, manage customized scheduling, and adjust settings via the WattDesk Cloud anytime, anywhere, ensuring optimal comfort and energy savings.

WattMate



All-in-One

Wattsonic delivers everything you need, inside and out. With pre-packed connectors, cables, and all essential accessories, the system is fully equipped for installation. No additional preparation required—just plug and play.

Easy to install

With an all-in-one, plug-and-play design, the 3-in-1 system (Power, Communication, and Earthing) streamlines the connection of battery modules, ensuring a quick and hassle-free setup.

Adapts to your space

Whether wall-mounted or stackable, this versatile system adapts to your space and environmental needs. This adaptability makes it an ideal solution for users seeking both efficiency and versatility in their energy storage systems.

Diversity unleashed

Innovative running modes

General Mode

The General Mode is the default operating mode of the inverter, typically used for maximizing self-sufficiency. In this mode, when the power generated by the PV array is sufficient, it will supply the loads, charge the battery, and feed excess energy to the grid.

Peak Load Shifting (Load Shifting)

This mode optimizes energy use by managing power based on the grid's contracted maximum (Pmax). When load consumption exceeds the Pmax, the inverter draws power from the battery and PV system to supply the additional power needed, ensuring stable electricity for households.

New

ToU Mode

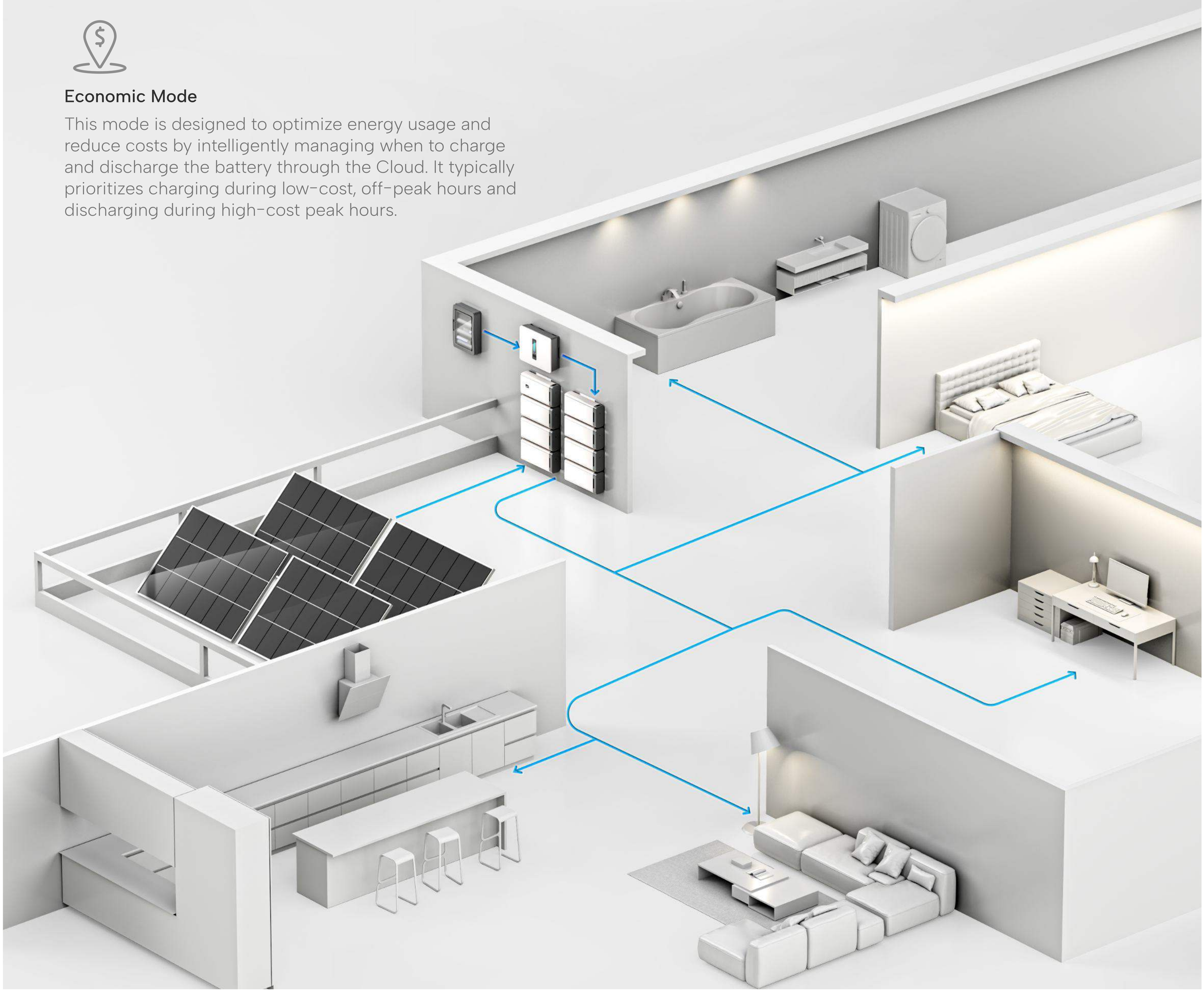
The Time-of-Use (ToU) mode is a smart feature that optimizes energy management by adjusting energy usage. It optimizes energy management based on local electricity prices fluctuations via the inverter, allowing users to set different sub-modes for various periods to meet specific needs and scenarios.

UPS Mode

In areas with an unstable power grid, customers can activate this mode to prioritize grid power for charging the battery. The grid will support the load, and the battery will only discharge to meet the demand when grid power is unavailable.

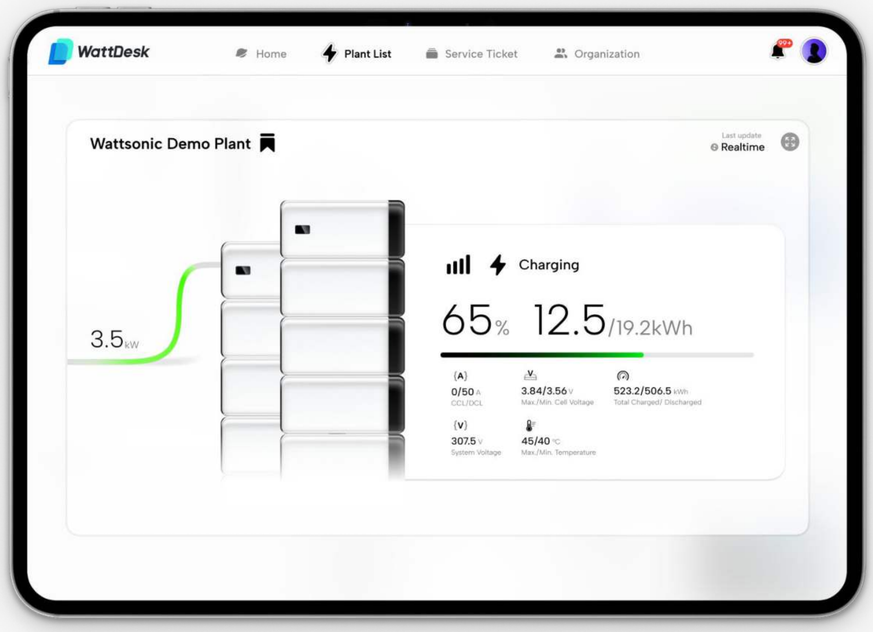
Economic Mode

This mode is designed to optimize energy usage and reduce costs by intelligently managing when to charge and discharge the battery through the Cloud. It typically prioritizes charging during low-cost, off-peak hours and discharging during high-cost peak hours.



Advanced BMS Management

Hardware and Software Synergy



WattDesk

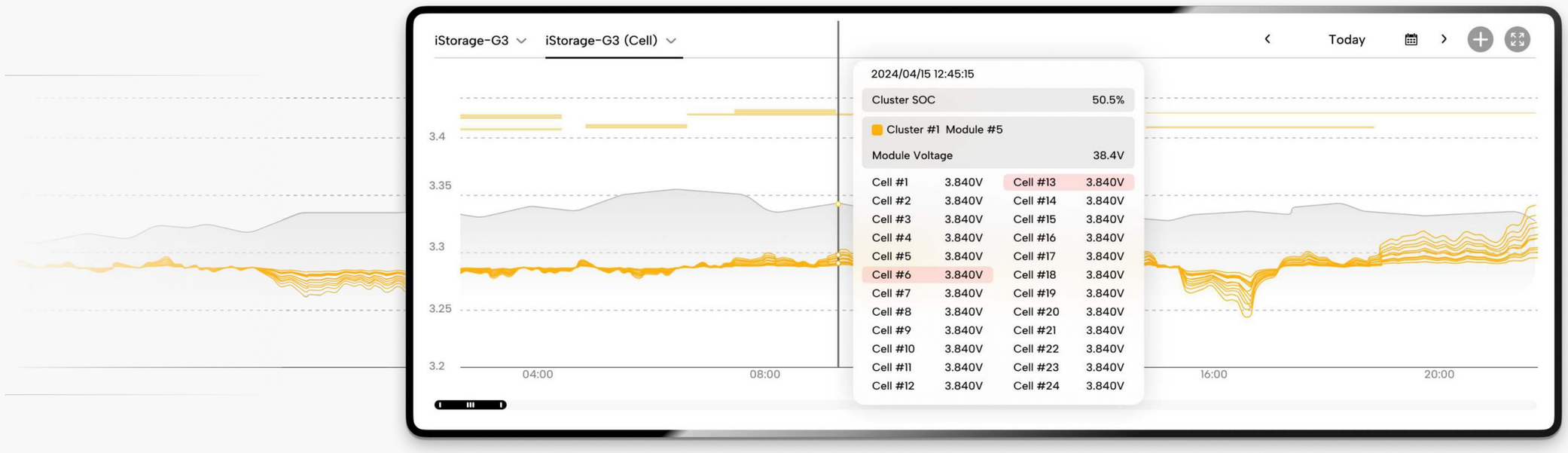
AI-driven Battery Management Systems (BMS), combined with the robust WattDesk Cloud platform, provide a groundbreaking solution for precision and efficiency.

The BMS incorporates self-adapting operational strategies, optimizing energy distribution, ensuring cell-level balancing, and dynamically responding to changing conditions to enhance system longevity and safety.

Meanwhile, WattDesk delivers real-time insights into critical metrics such as cell voltage, temperature, and state of charge, enabling intelligent management and predictive maintenance for maximum performance and reliability.

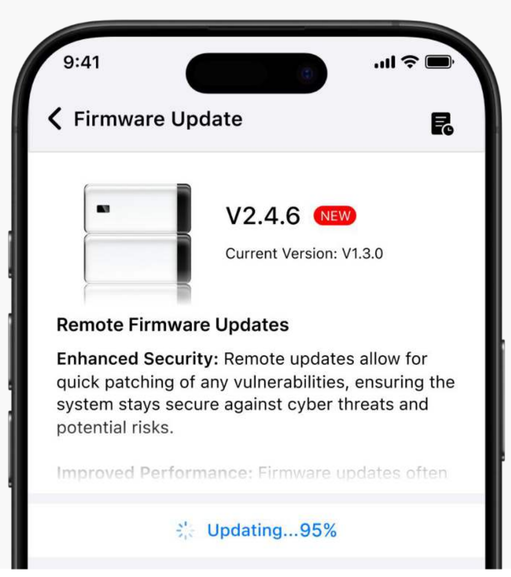
Dynamic Long-Term Balancing with AI Assistance

Tracking critical metrics such as cell voltage, temperature, state of charge, and health.



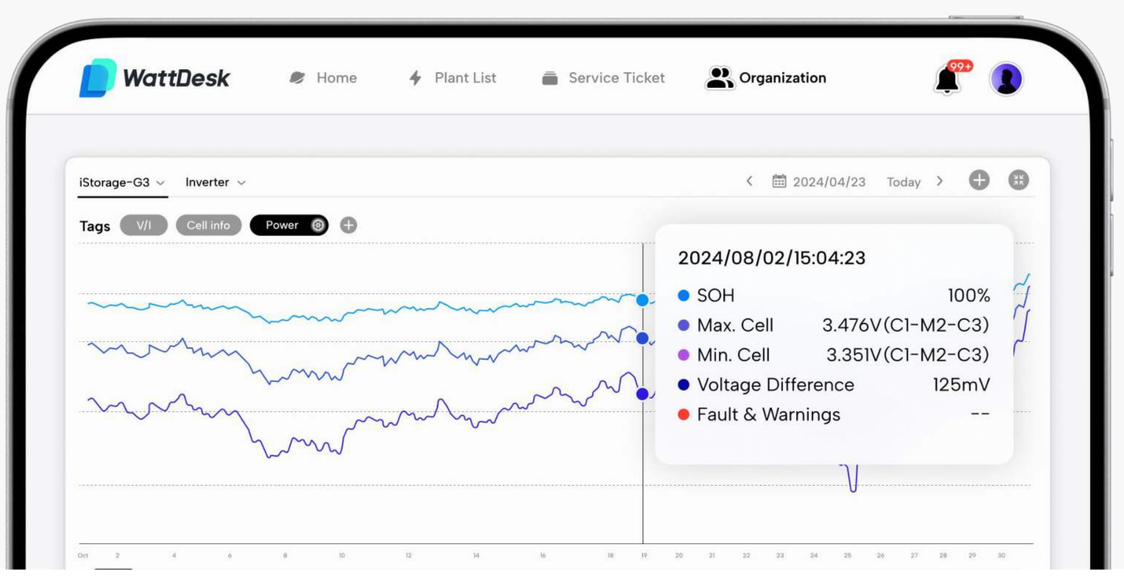
Automatic Alerts & Remote Firmware Updates

Reducing downtime and on-site costs



Comprehensive Data Insights Powered by BMS

Offering 24-hour real-time data visibility into every aspect of battery performance, updated every second*.



*The update time varies depending on the device type and operating status, with real-time updates occurring up to once per second.

Master BMS

	Master BMS-3.84
Operation Voltage [Vdc]	100~800
Max. Charge/Discharge Current [A]	50
Recommend Charge/Discharge Current [A]	50
Functions	Pre-charge, Over-Less Voltage/ Over-Less Temperature Protection, Cells Balancing/ SOC-SOH calculation etc.
Communication Protocol	CAN/RS485 ModBus, TCP/IP
Power Connection Type	Integrated connector
User Interface	LCD Display (Optional, need to confirm upon order)
Dimension [W*H*D mm]	680*319*152.6
Weight[KG]	14
Operating Temperature [°C]	-20~55
Ingress Protection	IP21 (Optional IP65 , need to confirm upon order)
Installation Method	Stackable or Wall Mounted
Warranty	10 years

Battery Module

	3.84 kWh
Nominal Voltage/Capacity per Module	76.8V/3.84kWh [50Ah]
Expand Capability	2~8 batteries series connection
DOD Recommended	90%
Max. Charge/Discharge Current [A]	50A Continual
Recommend Charge/Discharge Current [A]	50A Continual
Communication Protocol	CAN
Power Connection Type	Integrated connector
Dimension [W*H*D mm]	656*322*173.3 per module
Weight[KG]	38
Charge Temperature Range [°C]	0~45
Discharge Temperature Range [°C]	-20~55
Ingress Protection	IP21 (Optional IP65,need to confirm before order)
Installation Method	Stackable or Wall Mounted
Cables Connection Method	Connection from side
Warranty	10 years or 10,000 cycles @90% DOD

1. Battery System Configuration Options[3.84kWh]: 154V/7.68kWh, 230V/11.5kWh, 307V/15.3kWh, 384V/19.2kWh, 460V/23.0kWh, 537V/26.8kWh, 614V/30.7kWh.

2. Wattsonic reserves the right to modify the technical datasheet and appearance of the product in the catalogue without prior advice to the users.

Three Phase Hybrid Inverter

Model	6K-25-3P	8K-25-3P	10K-25-3P	12K-40-3P	15K-40-3P	20K-40-3P
PV Input						
Recommended Max. Input Power[kW]	9.00	12.00	15.00	18.00	22.50	30.00
Start-up Voltage [V]	135	135	135	135	135	135
Max. DC Input Voltage* [V]	1000*	1000*	1000*	1000*	1000*	1000*
Rated DC Input Voltage [V]	620	620	620	620	620	620
MPPT Voltage Range* [V]	120-950*	120-950*	120-950*	200-950*	200-950*	200-950*
No. of MPP Trackers	2	2	2	2	2	2
No. of DC Inputs per MPPT	1/1	1/1	1/1	2/2	2/2	2/2
Max. Input Current [A]	15/15	15/15	15/15	30/30	30/30	30/30
Max. Short-circuit Current [A]	20/20	20/20	20/20	40/40	40/40	40/40
Battery Side						
Battery Type	Lithium Battery (with BMS)					
Battery Voltage Range [V]	135-750					
Maximum Charging/Discharge Current [A]	25/25			40/40		
Grid Side						
Rated Output Power [kW]	6.00	8.00	10.00	12.00	15.00	20.00
Max. Output Apparent Power [kVA]	6.60	8.80	11.00[1)]	13.20	16.50[3)]	22.00
Max. Input Apparent Power** [kVA]	12.00	16.00	16.50	24.00	30.00	30.00
Max. Charging Power of Batter [kW]	6.00	8.00	10.00	12.00	15.00	20.00
Rated AC Voltage [V]	3L/N/PE; 220/380V; 230/400V; 240/415V					
Rated AC Frequency [Hz]	50/60					
Max. Output Current [A]	10.00	13.30	16.50[2)]	20.00	25.00[4)]	33.50
Power Factor	0.8 leading ...0.8 lagging					
Max. Total Harmonic Distortion	<3% @Rated output power					
DCI	<0.5%In					
Back-up Side						
Rated Output Power [kW]	6.00	8.00	10.00	12.00	15.00	20.00
Max. Output Apparent Power [kVA]	6.60	8.80	11.00	13.20	16.50	22.00
Max. Output Current [A]	10.00	13.30	16.50 [2)]	20.00	25.00	33.50
On/Off-grid Switching Time [ms]	<10ms					
Rated Output Voltage [V]	3L/N/PE; 220/380V;230/400V;240/415V					
Rated Output Frequency [Hz]	50/60					
Voltage Harmonic Distortion	<3% @Linear load					
Efficiency						
Max. Efficiency	98.1%	98.2%	98.2%	98.4%	98.4%	98.4%
European Efficiency	97.3%	97.4%	97.4%	97.5%	97.5%	97.5%

General Data	
Over Voltage Categor	PV: II ain: III
Dimensions [W×H×D mm]	534×418×210
Weight [KG]	26 (6~10kW) / 28 (12kW) / 31 (15~20kW)
Protection Degree	IP65
Standby Self-Consumption [W]	<15
Topology	Transformerless
Operating Temperature Range [°C]	-30~60
Relative Humidity [%]	0~100
Operating Altitude [m]	3000 (>3000m Derating)
Cooling	Natural Convection
Noise Level [dB]	<25 (6~10kW) | <40(12~20kW)
Display	OLED & LED
Communication	CAN, RS485, WiFi/LAN (Optional)

Protection

Integrated Protection

DC reverse polarity protection/ Battery input reverse connection protection/ Insulation resistance protection / Surge protection/ Over-temperature protection/ Residual current protection/ Islanding protection/ AC over-voltage protection/ Overload protection/ AC short-circuit protection

1) G98: 10.5kVA; 2) G98: 16.00A 3) AS 4777.2: 15.0kVA; 4) AS 4777.2: 21.7A

* PV Max. Input voltage is 950V without battery, or 850V with battery, otherwise inverter will be waiting;

** Max apparent power from the grid means the maximum power imported from the utility grid used to satisfy the backup loads and charge the battery;

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