


Li-HV Residential Three Phase Hybrid AIO Series

Inverter Options:


6/8/10/12/15/20kW-100A-3P

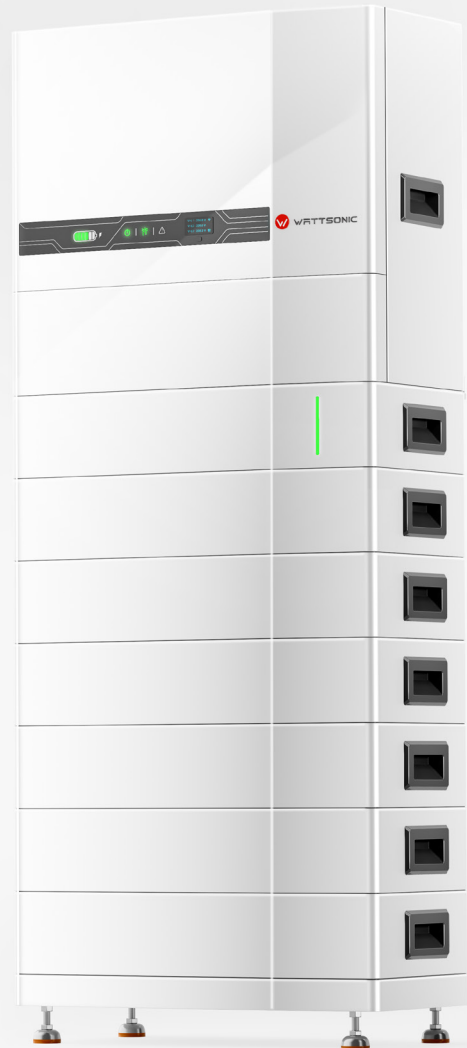
Li-LV Battery Options:

3.84kWh Module, 11.5-30.7kWh

 AC/ DC / Hybrid-Coupling

 WattDesk Cloud

 Low maintenance



The Li-HV Residential Three-phase Hybrid AIO Series is designed for easy installation, expansion, and quick setup by its stackable module. As the inverter, BMS, and batteries in one, it supports the PV and grid-side inputs and ensures a reliable and sustainable power supply. Dual MPP trackers can independently manage different solar arrays to reduce the impact of shading on the system's total energy production. Heat pumps, EV charging systems, and the WattDesk Cloud monitoring platform can seamlessly integrate into the energy system whenever needed, offering flexible and scalable solutions.

Easy installation, quick commissioning

- Plug-and-play with the cable-free design
- Quick setup with the stackable modules
- Step-by-step commissioning via the WattDesk Cloud

Flexibility & Adaptability

- Control for up to 5 inverters included
- Three-Phase independent controls & Asymmetric AC output
- Dual MPP trackers for flexible roof layouts
- Multiple energy sources (solar, grid, battery) supported
- Customized running modes for varied energy needs

Higher efficiency, Lower cost

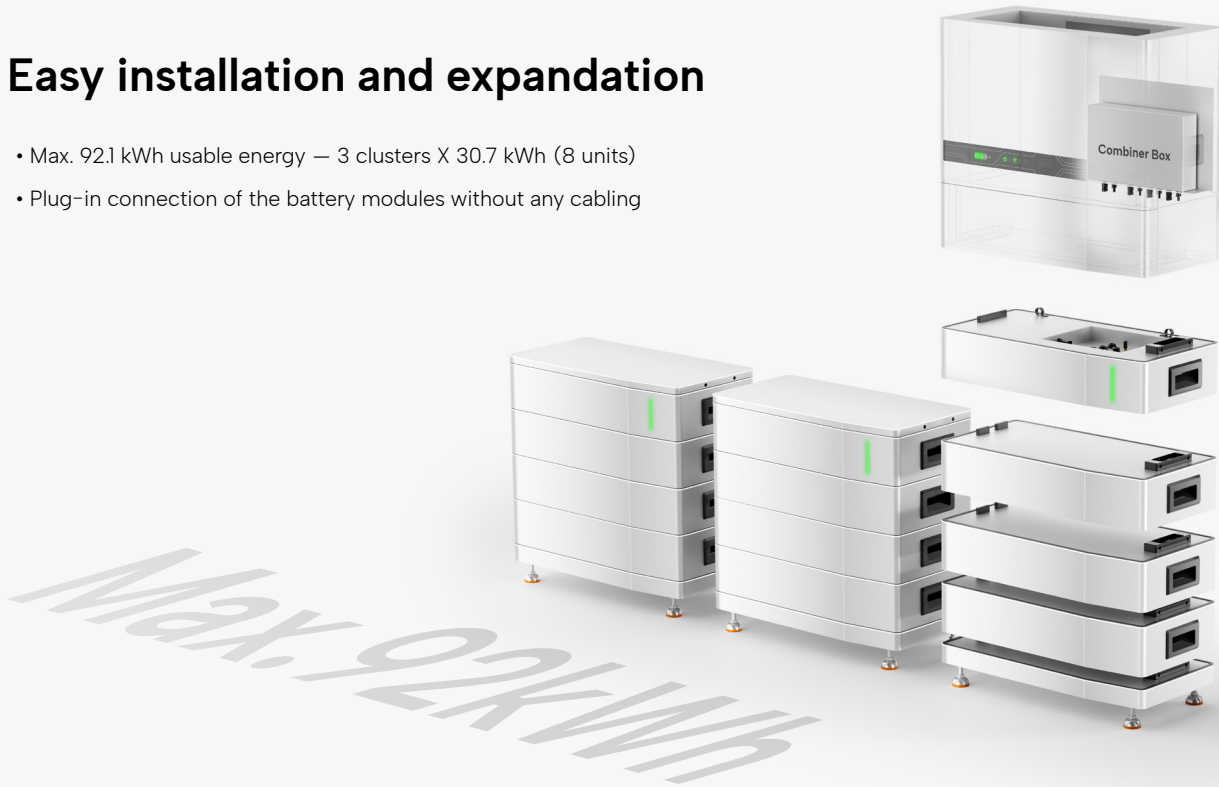
- Real-time data insights with every second
- Remote upgrade minimizes labor maintenance cost
- Problem-solving with rapid support by Service Ticket

Superior security and warranty

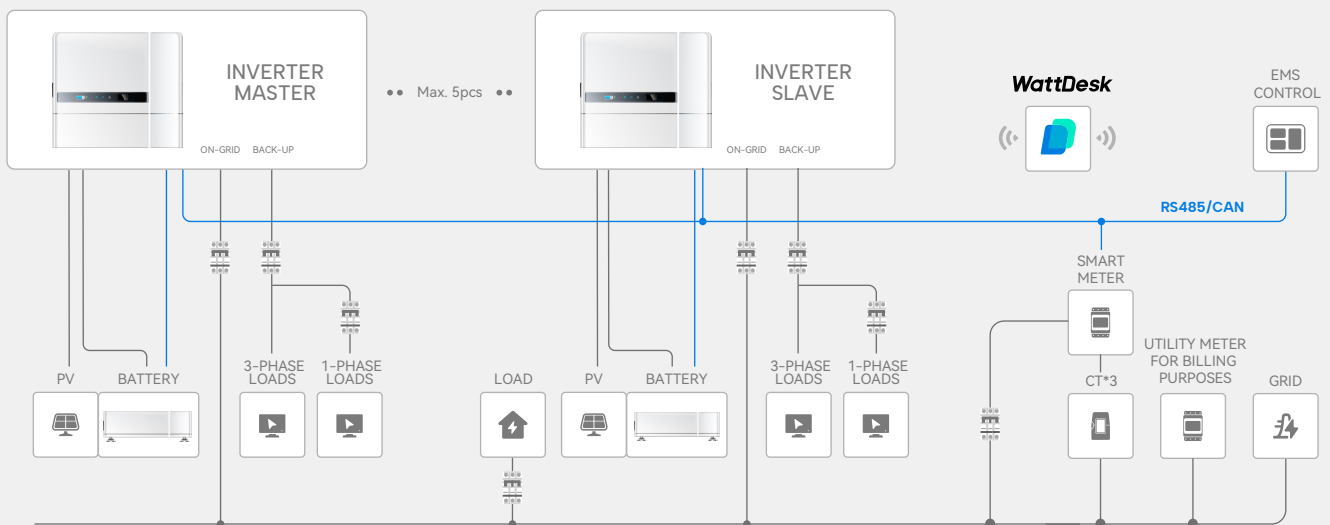
- IP65 protection — adapts to outdoor environmental conditions
- 10-year Warranty or 10,000 cycles @90% DOD for BAT
- The data security protective strategies

Easy installation and expansion

- Max. 92.1 kWh usable energy — 3 clusters X 30.7 kWh (8 units)
- Plug-in connection of the battery modules without any cabling



Whole-home backup energy solution



- Up to 5 inverters in parallel
- WattDesk Cloud one-stop energy management integrated

- 100% three-phase unbalanced output
- Support EMS integrated

Tactical modes

Multiple running modes of our hybrid inverter offer you flexibility to adapt to various energy needs and operational conditions.



General Mode



Peak load shifting



Off-grid Mode



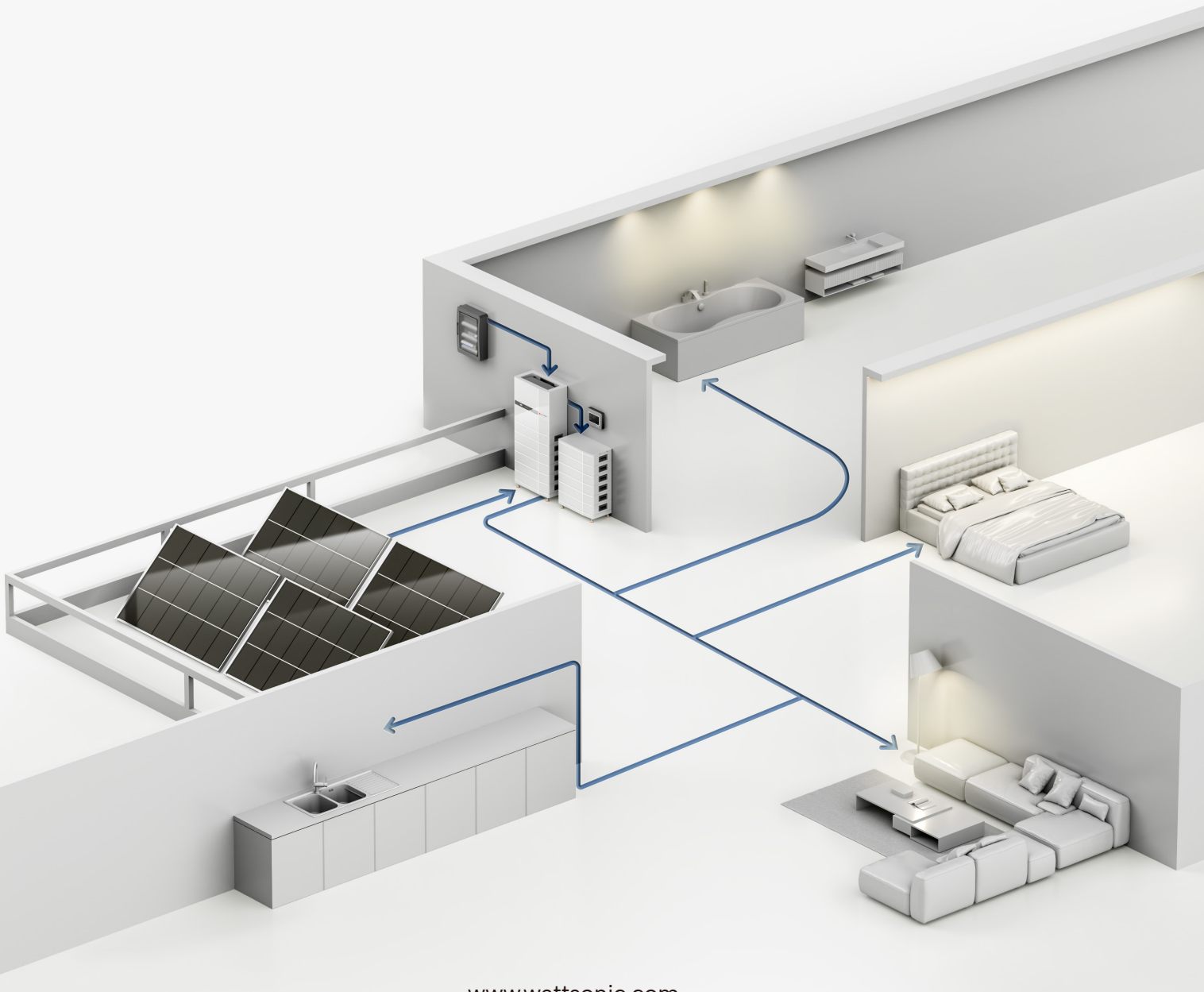
UPS Mode



Economic Mode

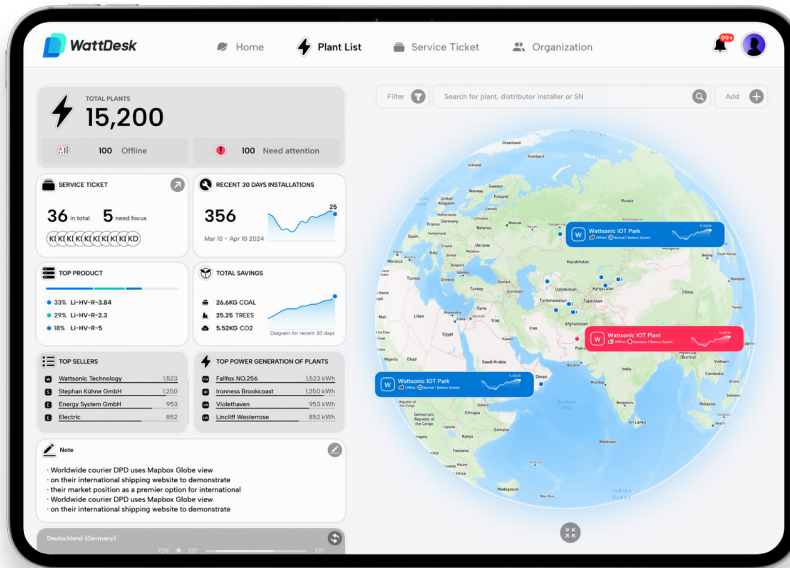
Peak Load Shifting helps reduce electricity bills by using stored energy during high-demand periods, while Off-Grid Mode ensures continuous power supply during outages. UPS Mode ensures uninterrupted power during critical times, and Economic Mode allows users to maximize energy savings. You can configure the operation mode as per your preference in the App with one click.

Moreover, Cloud-based AI algorithms will continuously optimize energy management after your inverter access to the Energy Management System (EMS), such as automating manage peak electricity for optimal efficiency.





Take Charge of Sustainability with WattDesk's Intelligent Control

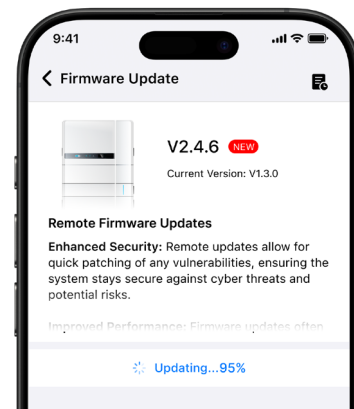


Wattsonic allows businesses and end users to manage the whole energy system for free via the WattDesk Cloud. WattDesk is more than a robust monitoring and digital tool that gives users constant access to real-time system data and remote control. It also works as an open, high-freedom communication channel that helps business users solve problems with the fastest response. The management procedure can be initiated anytime and anywhere via the app or the desktop, offering maximum flexibility to you.



Lightning-fast data insights: Every second

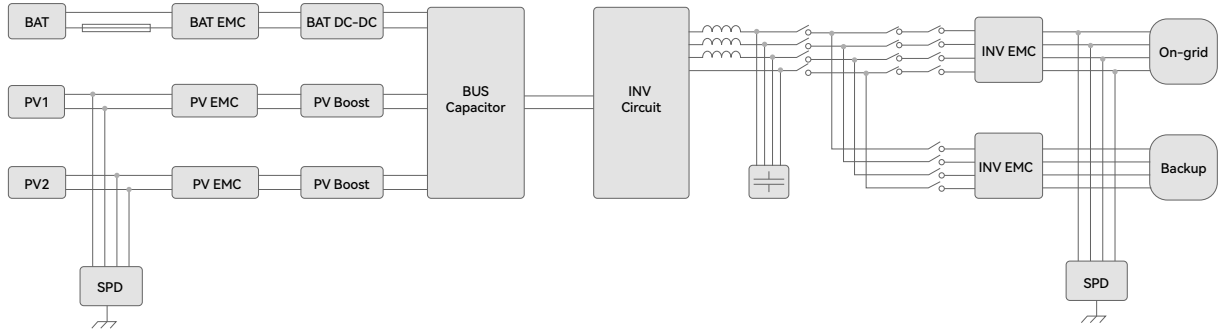
WattDesk provides real-time data collection at an impressive rate of up to once per second, allowing users to track device status with pinpoint accuracy and empowering quick, informed decision-making.



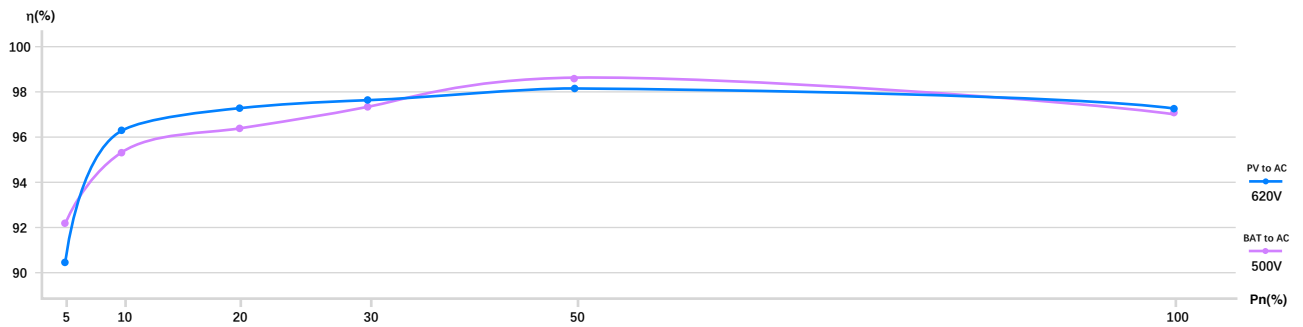
Higher efficiency, Lower cost

With automatic alerts and remote firmware updates, WattDesk empowers proactive management by addressing issues before they escalate. These updates keep devices up-to-date, reducing the need for on-site maintenance, minimizing downtime, and streamlining energy management for all users.

Circuit Diagram

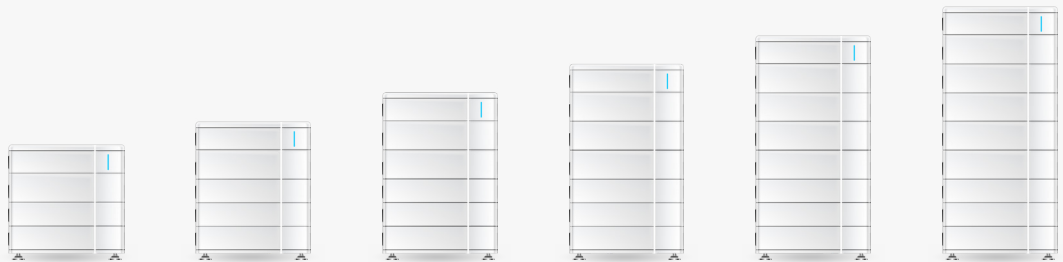


Efficiency Curve 20kW-100A-3P



Battery Module

3 Phase AIO ESS System



Number of Battery Modules	3	4	5	6	7	8
Battery Capacity	11.5 kWh 230 V	15.3 kWh 307 V	19.2 kWh 384 V	23 kWh 460 V	26.8 kWh 537 V	30.7 kWh 614 V
Size(W*H*Dmm)	698*1268*356	698*1405*356	698*1542*356	698*1695*356	698*1756*356	698*1953*356
Weight(kg)	168 kg	210 kg	252 kg	294 kg	336 kg	378 kg
DOD Recommended	90%					
Power connection type	Hard Connection with Positioner					
Warranty	10,000 Cycles within 10 Years Guarantee					

Three Phase Hybrid Inverter

PV Input	6.0kW	8.0kW	10.0kW	12.0kW	15.0kW	20.0kW
Max. DC Input Power [kW]	9.0	12.0	15.0	18.0	22.5	30.0
Start-up Voltage [V]	135	135	135	135	135	135
Max. DC Input Voltage [V]*	1000	1000	1000	1000	1000	1000
Rated Input DC Voltage [V]	620	620	620	620	620	620
MPPT Voltage Range [V]	120~950	200~950	200~950	200~950	200~950	200~950
Number of MPP Trackers	2	2	2	2	2	2
Number 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	6.0kW	8.0kW	10.0kW	12.0kW	15.0kW	20.0kW
Battery Type	Lithium Battery (with BMS)					
Battery Voltage Range [Vdc]	135~750					
Max. Charging/Discharging Current [A]	25/25		30/30		40/40	

Grid Side	6.0kW	8.0kW	10.0kW	12.0kW	15.0kW	20.0kW
Rated Output Power [kW]	6.0	8.0	10.0	12.0	15.0	20.0
Max. Output Apparent Power [kVA]	6.6	8.8	11.0	13.2	16.5/15.0 ¹⁾	22.0
Max. Input Apparent Power [kVA]**	12.0	16.0	16.5	24.0	30.0	30.0
Max. Charging Power of Battery [kVA]	6.0	8.0	10.0	12.0	15.0	20.0
Rated AC Voltage [V]	3L/N/PE; 220/380V; 230/400V; 240/415V					
Rated AC Frequency [Hz]	50/60	50/60	50/60	50/60	50/60	50/60
Max. Output Current [A]	10.0	13.3	16.5	20.0	25.0/21.7 ²⁾	33.5
Power Factor	0.8 leading...0.8 lagging					
Max. Total Harmonic Distortion	<3% @Rated output power					
DCI	<0.5%In					

Back-up Side	6.0kW	8.0kW	10.0kW	12.0kW	15.0kW	20.0kW
Rated Output Power [kW]	6.0	8.0	10.0	12.0	15.0	20.0
Max. Output Apparent Power [kVA]	6.6	8.8	11.0	13.2	16.5	22.0
Max. Input Current [A]	10.0	13.3	16.5	20.0	25.0	33.5
UPS Switching Time	<10ms	<10ms	<10ms	<10ms	<10ms	<10ms
Rated Output Voltage [V]	3/N/PE; 220/380V; 230/400V; 240/415V					
Rated Output Frequency [Hz]	50/60	50/60	50/60	50/60	50/60	50/60
Peak Output Apparent Power [kVA]***	12.6s	16.6s	20.6s	20.6s	25.6s	25.6s
Voltage Harmonic Distortion	<3%@Linear load					

Efficiency	6.0kW	8.0kW	10.0kW	12.0kW	15.0kW	20.0kW
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%
Compliance	IEC/EN 62109, IEC/EN 61000, EN50549-1, TOR Generator Type A, VDE-AR-N-4105					

Protection	
DC Reverse Polarity Protection	Integrated
Battery Input Reverse Connection Protection	Integrated
Insulation Resistance Protection	Integrated
Surge Protection	Integrated
Over-temperature Protection	Integrated
Residual Current Protection	Integrated
Islanding Protection	Integrated
AC Over-voltage Protection	Integrated
Overload Protection	Integrated
AC Short-circuit Protection	Integrated

General Data	6.0/8.0/10.0KW	12.0/15.0/20.0KW
Over Voltage Category	PV:II ; Main:III	
Dimensions(W×H×D mm)	534×418×210	
Weight (KG)	26.0 (6-10KW) /28.0(12KW)/31.0 (15-20KW)	
Protection Degree	IP65	
Standby Self-consumption(W)	<15	
Topology	Transformerless	
Operating Temperature Range(°C)	-20~55	
Relative Humidity(%)	0~100	
Operating Altitude(m)	3000 (>3000m derating)	
Cooling	Natural Convection Smart Fan	
Noise Level (dB)	<25 <40	
Display	OLED & LED	
Communication	CAN, RS485, WiFi/LAN (Optional)	

*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.

***The output power will exceed the rated value only when the power in the PV array is sufficient, and the duration of the overload is related to the overload power.

1) AS 4777.2: 15.0kVA; 2) AS 4777.2: 21.7A

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