

Balcony Energy Storage Solutions



TOPBAND
CO-INNOVATING A SMARTER FUTURE

TOPBAND

CO-INNOVATING A SMARTER FUTURE

TOPBAND is dedicated to delivering efficient, convenient clean energy solutions to families worldwide.

Our trusted products help households in China, the US, Europe, and beyond achieve energy independence, paving the way for a greener future.





The plug-in home solar energy storage system allows users to simply connect solar power to a convenient household socket, providing electricity to the home.



Intelligent Management

1. Remote Monitoring & Control.
2. Intelligent Energy Scheduling.
3. Smart Fault Diagnosis.
4. Energy Consumption Analysis.
5. Smart Device Integration.
6. Remote Firmware Upgrades (OTA).





Hybrid Micro Inverter

- 1200W: 800W on-grid, 1200W back-up.
- 2300W: 800W/2300W on-grid, 2300W back-up.
- UPS level switching <10ms.
- Support Intelligent shutoff, smart control.
- Maximum capacity of 8 kWh.



All-in-one Energy Storage

- 2300W: 800W/2300W on-grid, 2300W back-up.
- UPS level switching <10ms.
- Support Intelligent shutoff, smart control.
- Upgraded integrated design.
- Maximum capacity of 10 kWh.



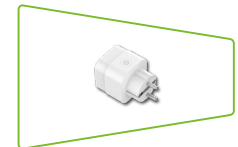
Smart Circuit Breaker

- Digital intelligent communication.
- Advanced low-voltage electrical technology.
- Electromagnetic drive and other technologies.
- Factory high-power equipment circuit.
- Intelligent control, measurement, early warning, protection and other safety and convenient functions.

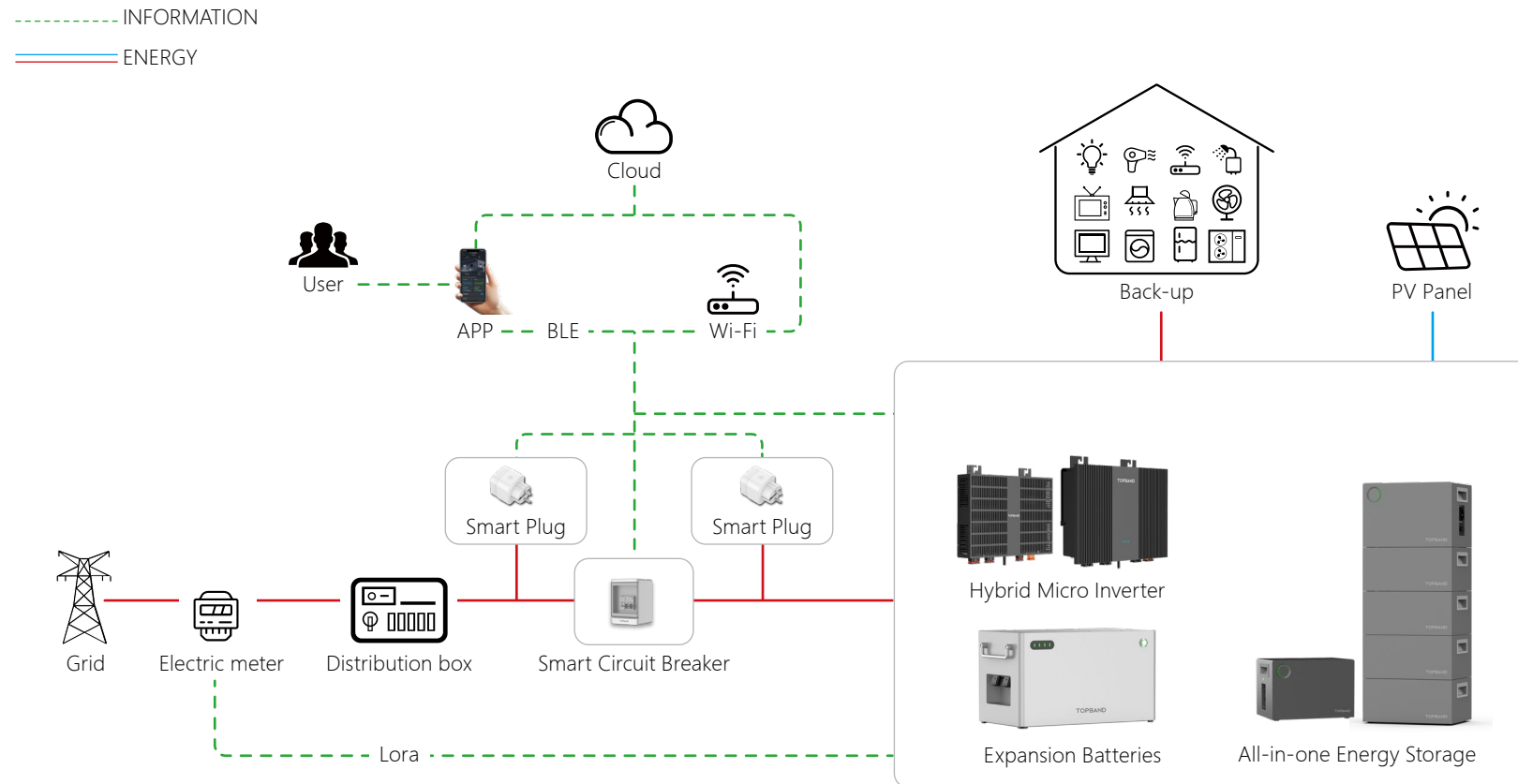


Smart Plug

- The smart plug sits between appliances and sockets, monitoring power consumption and enabling remote control via the app.
- It optimizes energy use by adjusting power distribution, preventing grid feed-in, prioritizing critical loads, and efficiently storing excess energy.



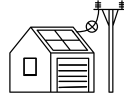
RESIDENTIAL SOLAR ENERGY STORAGE SOLUTIONS





Plug and Play

Simply plug it into the socket for installation, no electrician required, and easy startup.



Reverse Current Prevention

Equipped with a reverse current prevention function, it can be used as a dedicated power source for your home.



Off-grid Power Parallel

Multiple inverters operate in parallel in off-grid mode to increase the system's total power output and enhance the stability of the power supply.



UPS Switching in 10ms

Automatically switches power within 10 milliseconds during a power outage



Easy Operation via App

You can check the storage status and set discharging options through the dedicated app. Support OTA upgrade.



Power Scales with Your needs

Supports up to 4 additional dedicated batteries, expanding capacity to 10kWh—sufficient for a standard household's energy needs.



EMS

EMS enables economical management of power selling, storage, and consumption through intelligent energy system optimization.



Portable Power, More Convenient

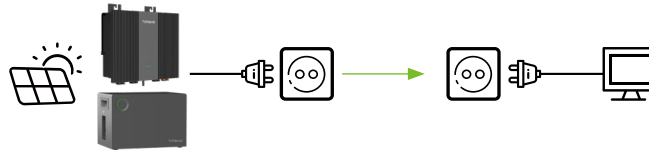
Can be used in combination with portable power sources, offering even more convenience.

User-friendly Energy Storage System

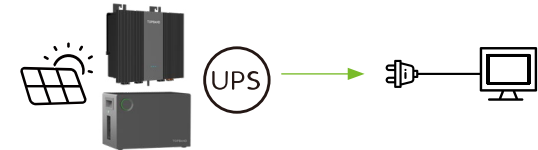
You can deploy the energy storage system very simply and quickly, completely without the help of electrician.



Store the generated electricity in a storage battery.



Supply the generated electricity to the household via plug-in.



It is also possible to connect directly to an inverter and use it as a UPS.

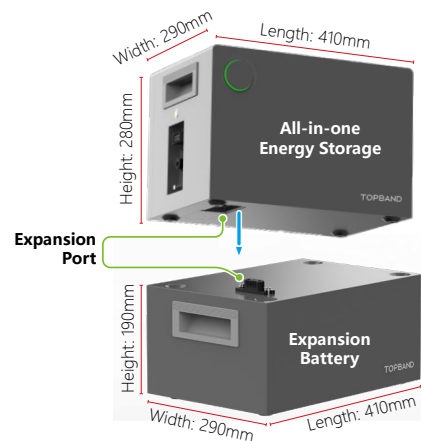
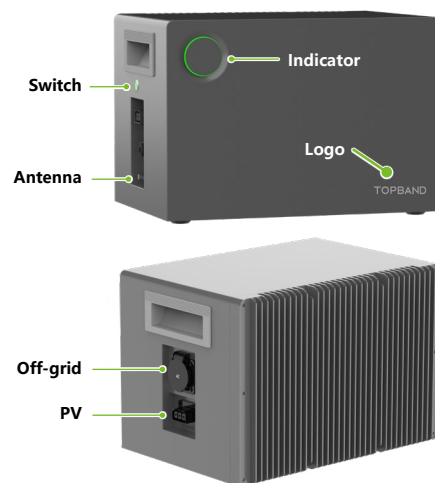


All-in-one Energy Storage

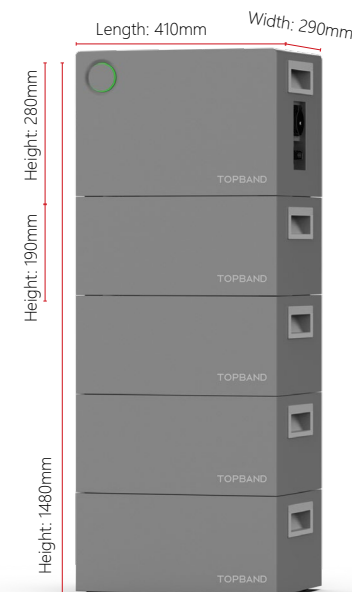
The balcony energy storage all-in-one unit integrates an inverter and a 2kWh battery pack, offering plug-and-play operation with on-grid and off-grid modes. It supports expansion up to 10kWh (with four additional 2kWh battery packs) to meet higher energy demands.



Equipped with an advanced BMS for enhanced battery safety and lifespan; optional CT (smart plug) enables precise energy flow monitoring and optimized power distribution. Off-grid power parallel allows multiple inverters to work together, increasing total power output and ensuring stable supply, ideal for home storage and grid-feed applications. Supports APP remote control and upgrades.

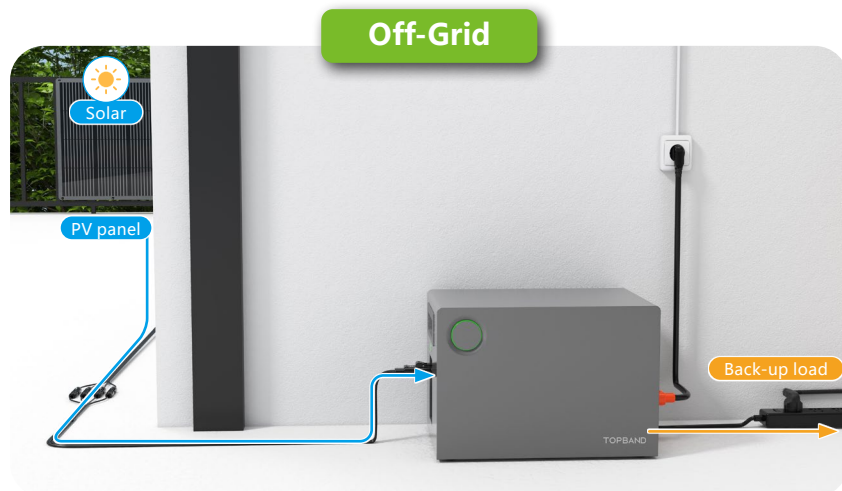
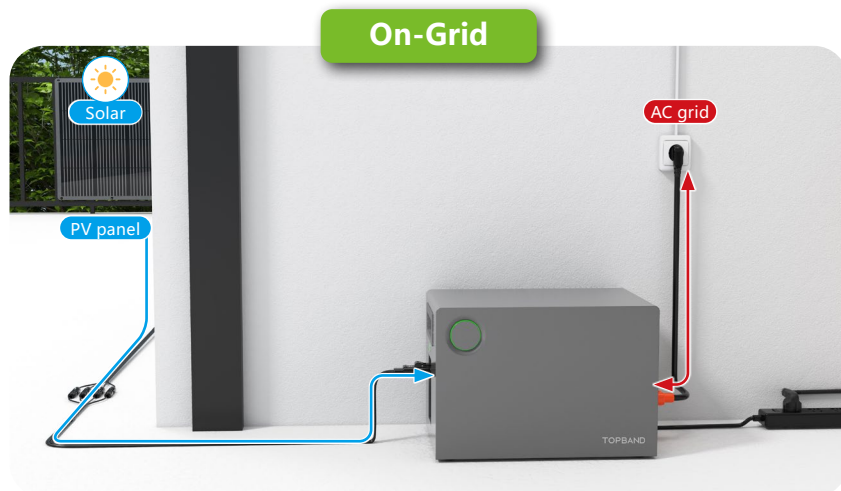
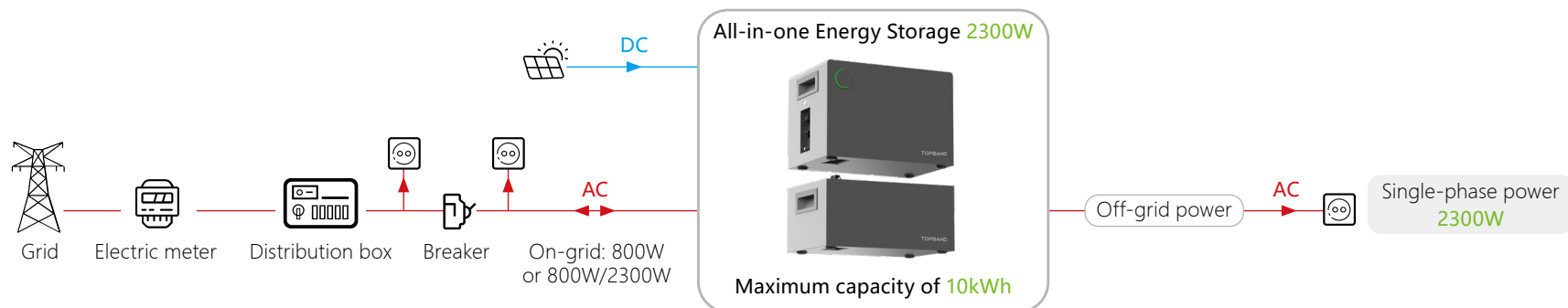


Align the ports to stack up to 4 additional batteries.



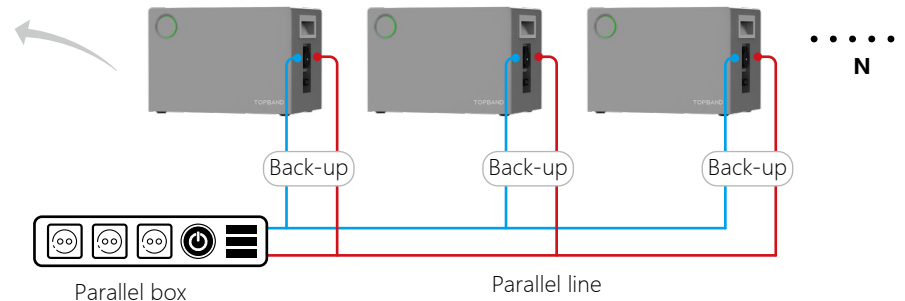
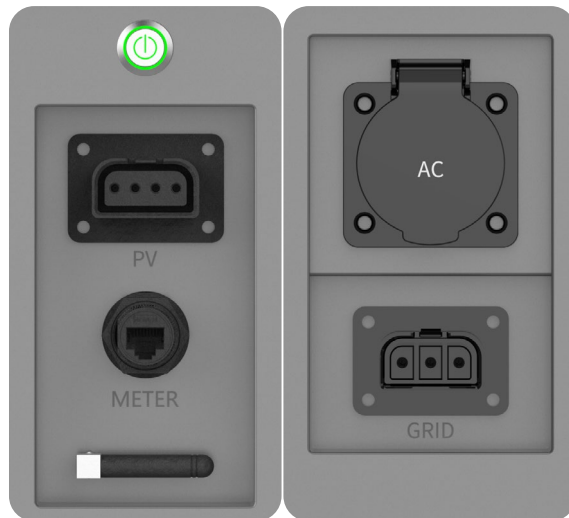
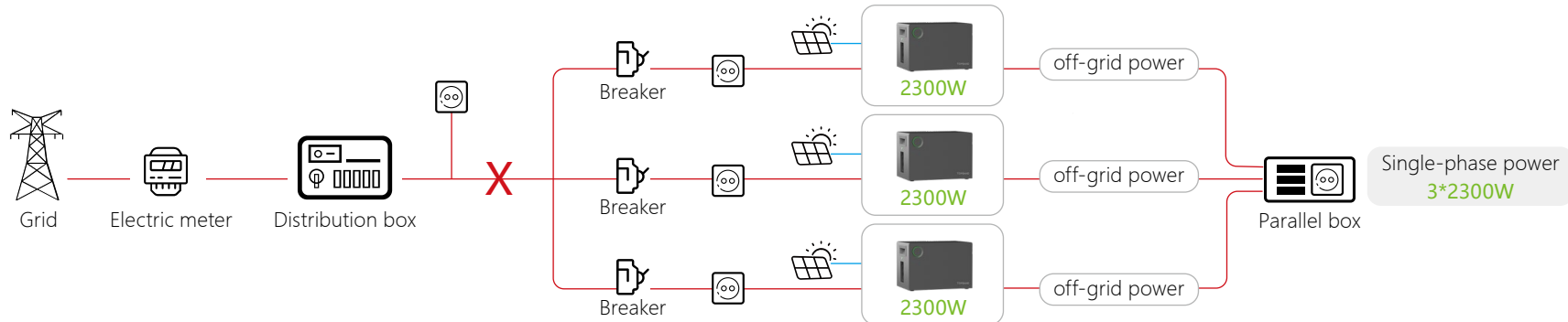
On-Grid & Off-Grid

The balcony energy storage system is an intelligent energy solution that integrates both off-grid and on-grid functionalities. It converts the DC power generated by solar panels into household AC power and supports energy storage, providing independent power supply for homes in off-grid mode, while enabling the sale of excess electricity to the grid in on-grid mode for revenue.



Off-grid: AC output Power Parallel

The off-grid parallel function enables multiple inverters to work together, increasing power output and stability. Intelligent sync control balances loads, ensuring uninterrupted operation even if one inverter fails. This enhances system reliability and scalability for high-power off-grid applications.



Anti-backflow Protection Function

What is backflow?

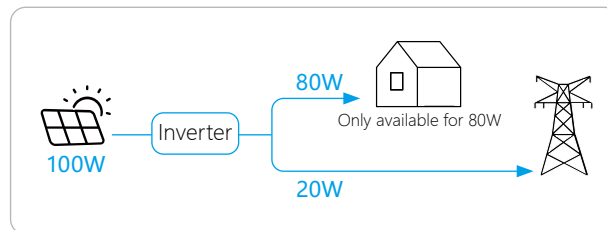
Backflow occurs when the electricity generated by a power system is sent back into the grid. Typically, only solar power systems with a power sale contract are allowed to feed electricity to the grid.

Common misconception:

Many people mistakenly believe that when a micro-inverter is connected to a household outlet, it will cause "backflow," leading to illegal operations. However, some argue that reverse flow is not an issue if the power sale revenue is zero.

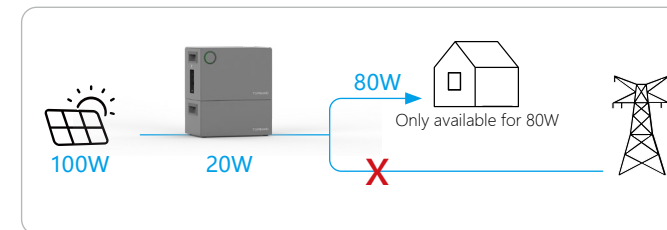
Take measures to eliminate electricity waste:

When solar power generation exceeds consumption, the surplus electricity will flow back into the grid.



Reality:

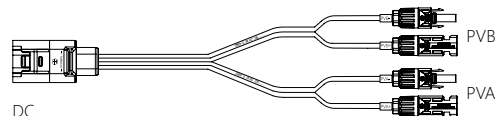
In fact, these devices are designed with features, such as apps, to prevent backflow while allowing normal use and storing energy for emergencies.



Packaging List & Smart Accessories

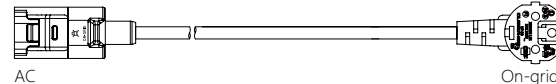
You can deploy the energy storage system very simply and quickly, completely without the need for professional electrical worker.

1 PV+MC4 connection cable



Note: Total pv cable length is less than 3m.
(distance from PV panel to microinverter).

2 Grid connection cable



Note: This document is for reference only. For more detailed packaging catalogs and customized accessories, please refer to the user manual or consult your sales manager.



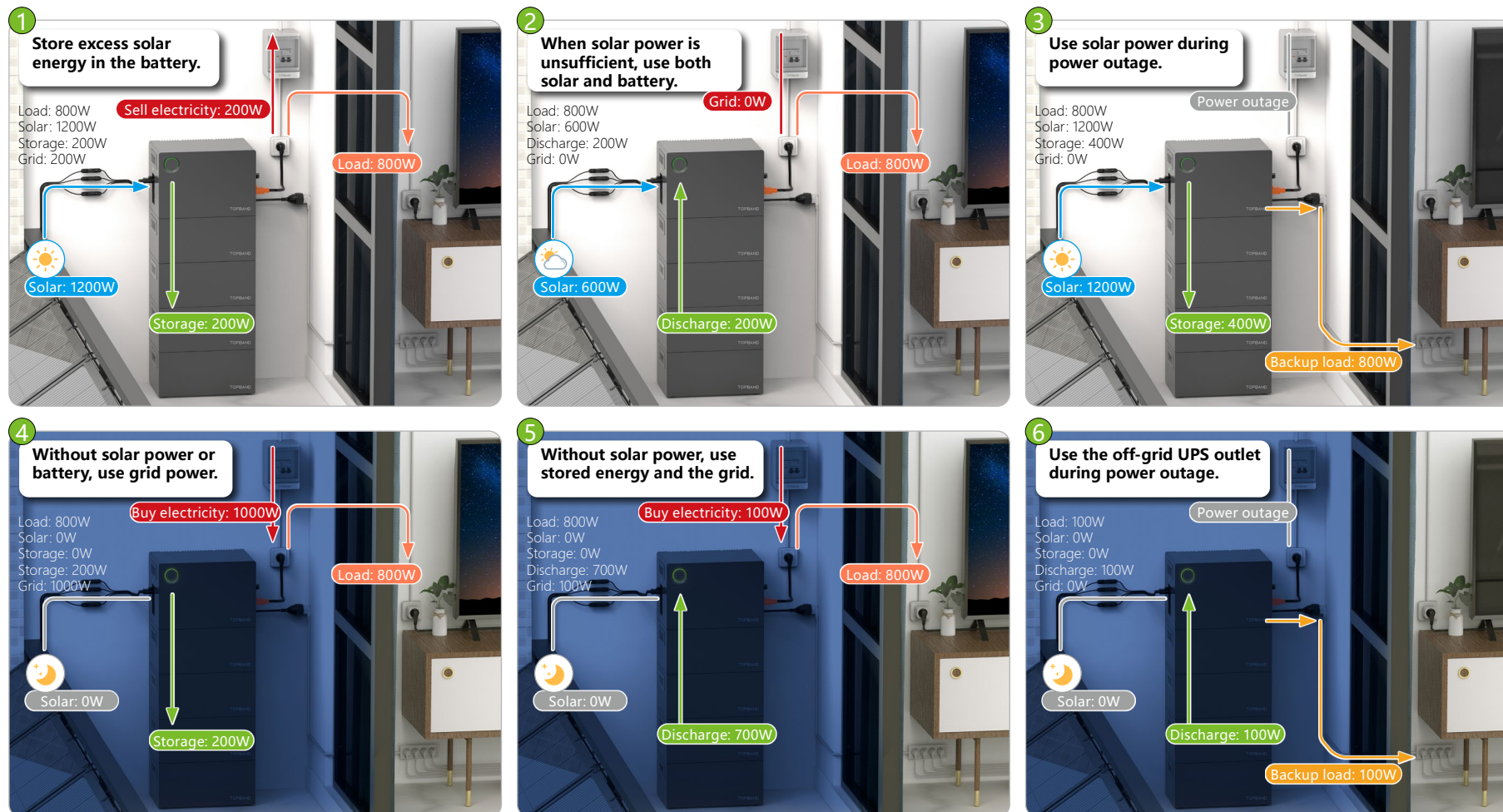
Smart plug (optional)



Smart circuit breaker (optional)

6 Modes of Energy Management

We offer six common energy storage system operating scenarios to help you better understand the functionality of Balcony Solar Energy Storage Solutions. (Example data is for reference only; please refer to actual operation for accurate details.)



All-in-one Energy Storage

Ultra-compact balcony energy storage Solution



TOPBAND	Model P1-2300AHMI					
DC Input (PV)	Nominal voltage range	12~53Vdc		AC output (off-grid)	Max. AC apparent power	2300VA
	Input voltage range	12~57Vdc			Nominal AC voltage	230V
	Max. Input DC voltage	Max.59Vdc			AC grid frequency	50/60 Hz
	Input current	2x25A			Max. output current	11A
	Standby power dissipation	Max.6W		AC Input (on-grid)	AC output type	Single phase
	Reverse input	Nonsupport			Max. apparent power	2300VA
MPPT Tracker	2	Nominal AC voltage	230V			
Battery	Capacity	2048WH (LiFePO4)	Max. input current		11A	
	Expandable batteries	4 (Max. storage: 2048WH*5)	AC grid frequency	50/60 Hz		
	Number of cycles	6000	Protection devices	Input over voltage protection	Integrated	
	Battery voltage range	44-55Vdc		Input under voltage protection	Integrated	
	Max. Battery DC Voltage	Max.54.75Vdc		Over temperature protection	Integrated	
	Charge current	40A		Output over power protection	Integrated	
	Discharge current	55A		Short output protection	Integrated	
	No-load power dissipation	Max.26W		Output under voltage protection	Integrated	
	Reverse Input	Nonsupport		Output over voltage protection	Integrated	
AC output (on-grid)	Output voltage	176~260Vac	Others	Constant power output protection	Integrated	
	Rated output power	2300W		Power factor range	0.8 leading~0.8 lagging	
	Max. AC apparent power	2300VA		Display	LED+APP (Bluetooth, 2.4 GHz Wi-Fi)	
	AC grid frequency	50/60 Hz		Interfaces	RS485, CAN	
	Max. output current	3.7A/11A		Operating Ambient Temp.	-40°C ~+50°C	
	Power factor	0.8 leading~0.8 lagging		Protective Class	Class I	
	THDI	Max.3% (Full of load)		Ingress Protection	IP65	
AC output (off-grid)	Battery to AC efficiency	94% max.		Dimensions (LxWxH)	410*290*280mm	
	PV to Battery efficiency	97% max.		Weight	30kg	
	AC grid connection type	Single phase		Warranty	10 Years	
	AC nominal power	2300W				

Expansion Batteries

Ultra-compact balcony energy storage Solution



TOPBAND	Model P1-2000L-LPF
Battery (PV)	Capacity 2048WH (LiFePO4)
	Expansion Method Battery Expansion Port
	Number of cycles 6000
	Battery voltage range 44-55Vdc
	Max. Battery DC Voltage Max.54.75Vdc
	Charge current 40A
	Discharge current 55A
	No-load power dissipation Max.6W
Others	Reverse Input Nonsupport
	Operating Ambient Temp. -40°C ~ +50°C
	Power factor range 0.8 leading~0.8 lagging
	Ingress Protection IP65
	Protective Class Class I
	Interfaces RS485, CAN
	Dimensions (LxWxH) 410x290x190mm
	Weight 20kg
	Warranty 10 Years



Balcony Energy Storage Solutions

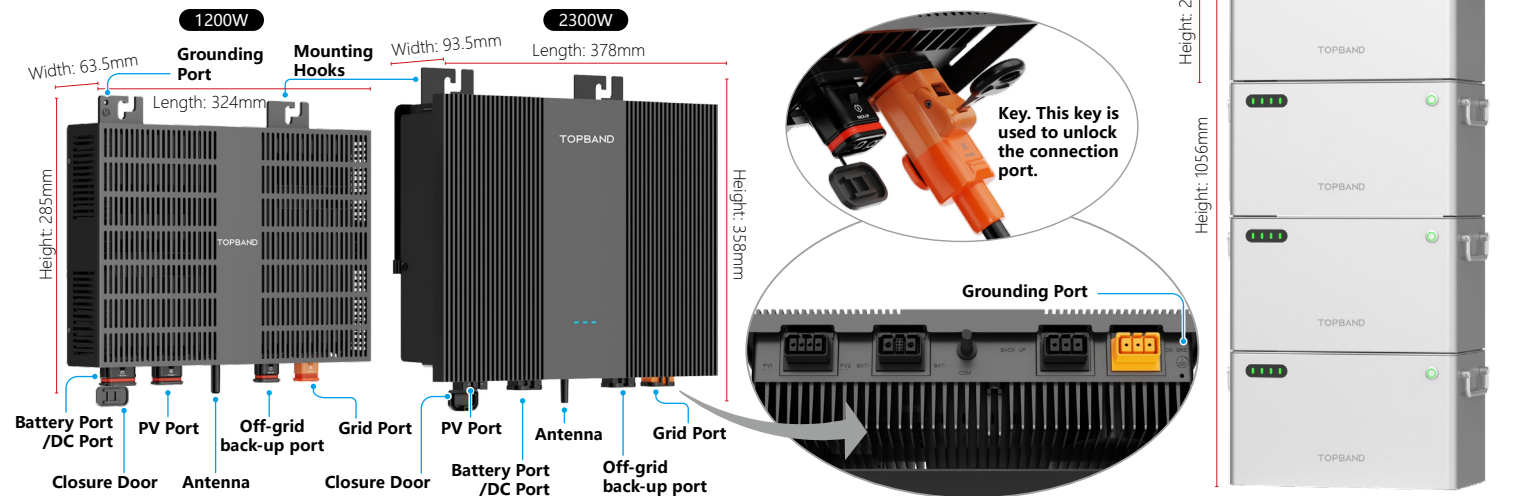
Hybrid Micro Inverter by TOPBAND is a highly efficient and flexible home energy storage inverter designed for distributed PV systems. Featuring a modular, plug-and-play design, it supports 1200W and 2300W power options and allows up to four 2kWh battery packs.



Hybrid Micro Inverter

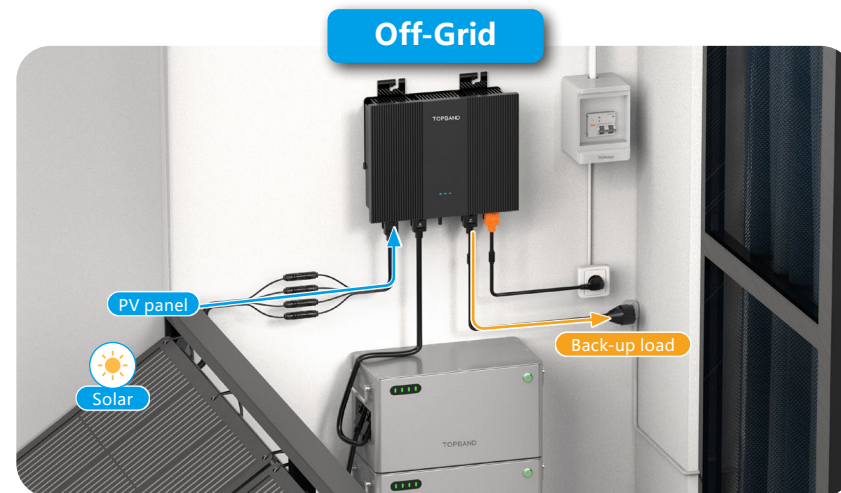
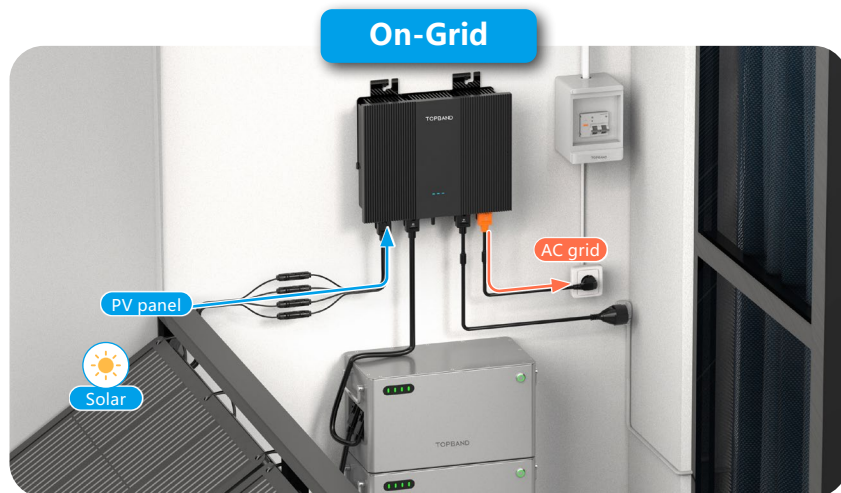
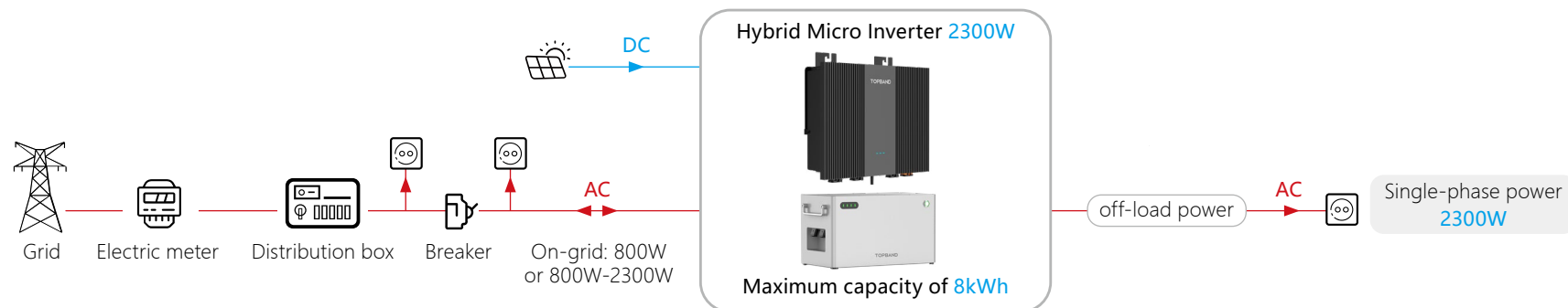


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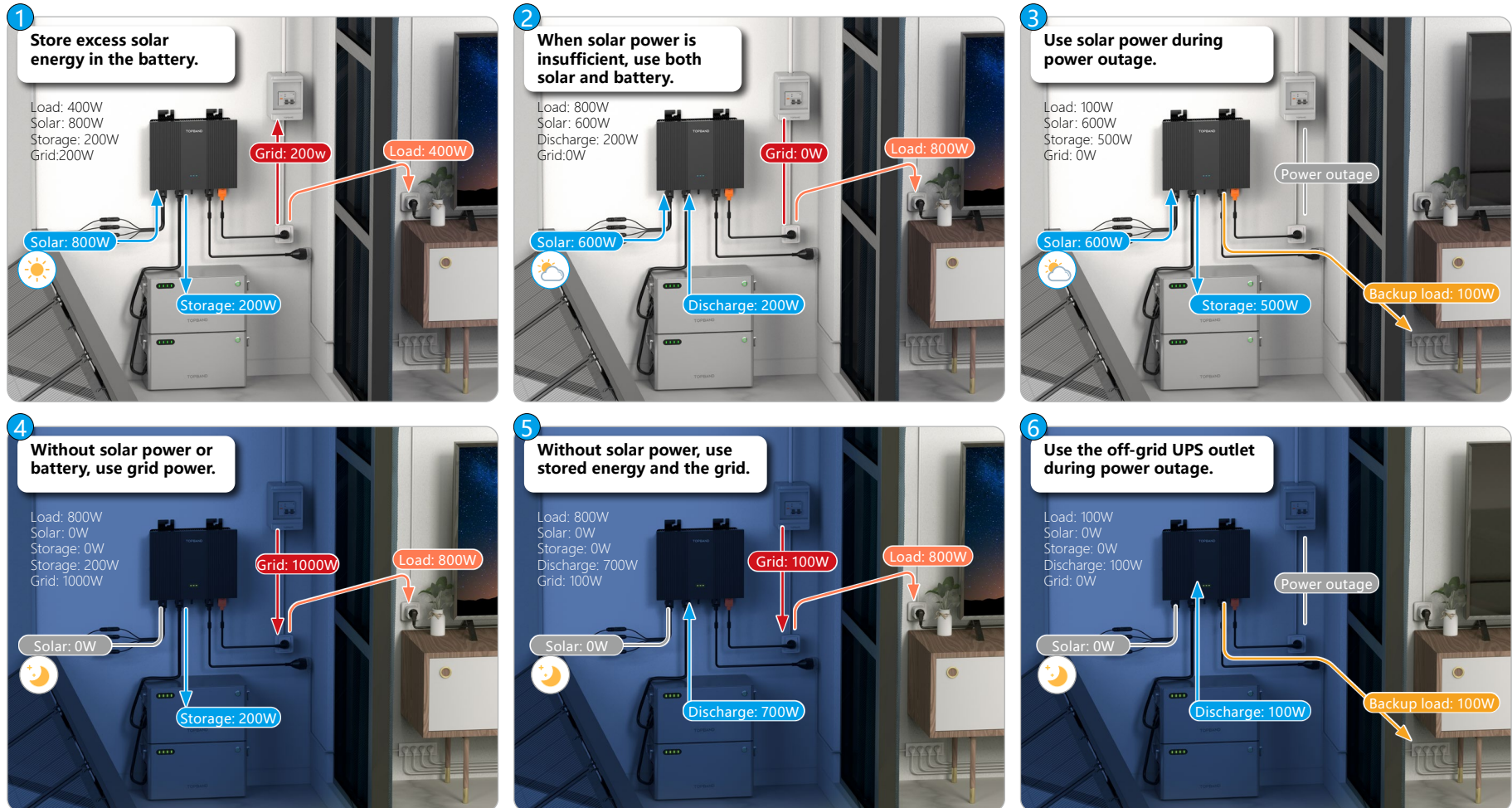
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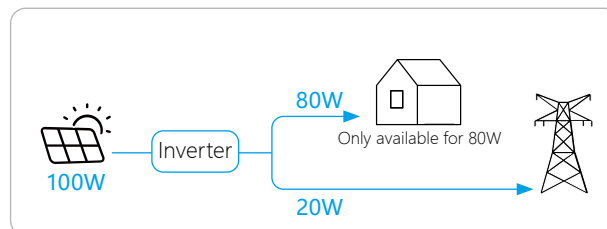
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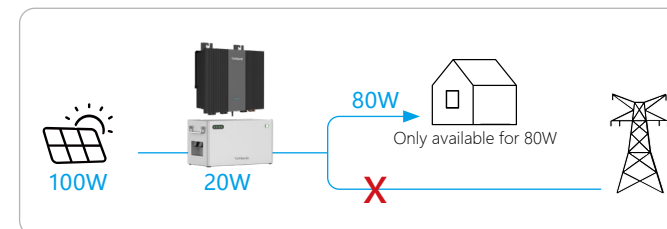
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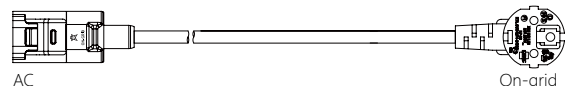
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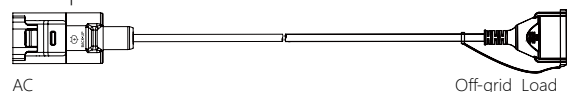
Packaging List & Smart Accessories

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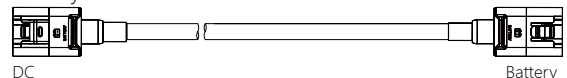
1 Grid connection cable



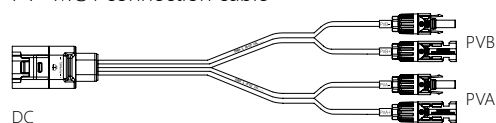
2 Backup load connection cable



3 Battery connection cable



4 PV+MC4 connection cable



Note: Total pv cable length is less than 3m.
(distance from PV panel to microinverter).

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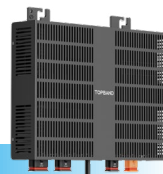
Smart plug (optional)



Smart circuit breaker (optional)

Hybrid Micro Inverter 1200W

Ultra-compact balcony energy storage Solution



TOPBAND	Model: P1-1200HMI				
DC Input (PV)	MPPT voltage range	15~53Vdc	AC Input (on-grid)	Rated output current	5.5A
	Input voltage range	12~59Vdc		AC output type	Single phase
	Max. Input DC voltage	Max.59Vdc		Max. Grid Input Power	1650VA
	Input current	2*13A		Nominal AC voltage	230V
	Standby power dissipation	Max.4W		Max. input current	8A
	MPPT Tracker	2		AC grid frequency	50/60 Hz
		PV Isc		dc. 2*19A	
Battery	Battery voltage range	25-59Vdc	Protection devices	Input over voltage protection	Integrated
	Max. Battery DC Voltage	Max.59Vdc		Input under voltage protection	Integrated
	Charge current	25A		Over temperature protection	Integrated
	Discharge current	35A		Output over power protection	Integrated
	Leakage current	Max.0.5A		Short output protection	Integrated
	No-load power dissipation	Max.10W		Output under voltage protection	Integrated
				Output over voltage protection	Integrated
		Constant power output protection	Integrated		
AC output (on-grid)	Output voltage	230Vac	Others	Ingress Protection	IP65
	Rated output power	800W		Protective Class	Class I
	Max. AC apparent power	1000VA		Over Voltage Category	DC II/ACII
	AC grid frequency	50/60 Hz		Operating Ambient Temp.	-40℃ ~ +50℃ (Derating above 45℃)
	Norminal output current	3.5A		Operating Ambient Humidity	0%~100%
	Power factor	0.8 leading~0.8 lagging		Power factor range	0.8 leading~0.8 lagging
	THDI	Max.3% (Full of load)		Display	LED+APP (Wi-Fi+Bluetooth)
AC output (off-grid)	Battery to AC efficiency	94% max.		Interfaces	RS485, CAN
	PV to Battery efficiency	97% max.		Dimensions (LxWxH)	324x63.5x285mm
	AC grid connection type	Single phase		Weight	≈ 6kg
	AC nominal power	1200W		Warranty	10 Years
	Max. AC apparent power	1200VA			
	Nominal AC voltage	230V			
	AC grid frequency	50/60 Hz			

Hybrid Micro Inverter 2300W

Ultra-compact balcony energy storage Solution



TOPBAND	Model: P1-2300HMI				
DC Input (PV)	MPPT voltage range	14~55Vdc	AC Input (on-grid)	Rated output current	10A
	Input voltage range	14~58Vdc		AC output type	Single phase
	Max. Input DC voltage	Max.59Vdc		Max. Grid Input Power	2300VA
	Input current	2*25A		Nominal AC voltage	230V
	Standby power dissipation	Max.6W		Max. input current	10A
	MPPT Tracker	2		AC grid frequency	50/60 Hz
		PV Isc		dc. 2*35A	
Battery	Battery voltage range	40-59Vdc	Protection devices	Input over voltage protection	Integrated
	Max. Battery DC Voltage	Max.59Vdc		Input under voltage protection	Integrated
	Charge current	40A		Over temperature protection	Integrated
	Discharge current	50A		Output over power protection	Integrated
	Leakage current	Max.0.5A		Short output protection	Integrated
	No-load power dissipation	Max.26W		Output under voltage protection	Integrated
				Output over voltage protection	Integrated
		Constant power output protection	Integrated		
AC output (on-grid)	Output voltage	176~276Vac	Others	Ingress Protection	IP65
	Rated output power	800W/2300W		Protective Class	Class I
	Max. AC apparent power	800VA/2300VA		Over Voltage Category	DC II/ACII
	AC grid frequency	50/60 Hz		Operating Ambient Temp.	-25°C ~+45°C
	Norminal output current	3.5A/10A		Operating Ambient Humidity	0%~100%
	Power factor	0.8 leading~0.8 lagging		Power factor range	0.8 leading~0.8 lagging
	THDI	Max.3% (Full of load)		Display	LED+APP (Wi-Fi+Bluetooth)
AC output (off-grid)	Battery to AC efficiency	94% max.		Interfaces	RS485, CAN
	PV to Battery efficiency	96% max.		Dimensions (LxWxH)	378x93.5x298mm
	AC grid connection type	Single phase		Weight	10.5kg
	AC nominal power	2300W		Warranty	10 Years
	Max. AC apparent power	2300VA			
	Nominal AC voltage	230V			
	AC grid frequency	50/60 Hz			

Expansion Batteries

Ultra-compact balcony energy storage Solution



TOPBAND	Model: TPB2000L-LPF	
Battery	Nominal voltage	51.2V
	Nominal energy@0.2C	2.048kWh
	Usable energy@0.2C	1.97KWh
	Nominal capacity@0.2C	40Ah
	Internal resistance@1khz AC	≤ 30 mOhm
	Operation voltage range	(With communication): 48V-56V / (Without communication): 44.8V-57.6V
	Charge voltage	56.0V
	Float voltage	54.6V
	Allowed MAX charge current	40A max.
	Recommend charge current	≤ 20A
	Allowed MAX discharge current	40A max.
	Recommend discharge current	≤ 20A
	Peak/Surge current limit	50A@15S/60A@1s
	Short circuit protection	Yes
	End Discharge (Re-charge voltage)	50.0V
	End Discharge (Inverter/Load cut off)	48.0V
	End Discharge (Re-start voltage)	52.0V
	Communication	CAN/RS485
	Parallel and Series connection	Support Max. 4 in parallel
		24000 cycles. After Normal charge, discharge @0.2C current with 90%DOD, Repeat above
	Cycle life	process until discharge capacity reduce to 60% of initial value.
	Operation temperature	Charge (With communication): -10~50°C / Discharge (With communication) :-20-50°C .
	Operation altitude	<3000m
		Self-discharge rate ² (Residual capacity) ≤ 3%/month ≤ 15%/years
		Self-discharge rate ² (Recover capacity) ≤ 1.5%/Month ≤ 8%/ year
		Storage environment ³ (≤ 3 months) -10~45°C 5~90%RH
		Storage environment ³ (>3 months) 15~35°C 45~85%RH
		Storage environment ³ (Recommend) 15~35°C 45~85%RH
		Installation types Stack
		IP rating IP65
		Dimension(LxWxH) 427*234*246mm
		Weight (Without accessories) ≈ 23kg(50.7lb)
		Warranty 5 Years

Smart Circuit Breaker

Ultra-compact balcony energy storage Solution



	Model TPS63-1PN	
Performance indicators	Rated operational voltage	230V
	Pole No.	1P+N
	Breaking ability	6kA
	Rated current	16/20/25/32/40/50
	Mechanical life	20,000
	Wiring capacity	25mm ²
	Installation	2M (2P)
Electrical Specs	Voltage metering accuracy	0.5%FS
	Current metering accuracy	0.5%FS
	Power metering accuracy	1%FS
	Electricity metering accuracy	1%FS
	Switch on acting time	20ms
	Switch off acting time	5ms
Protection Feature	Overload protection	Integrated
	Overvoltage protection	Integrated
	Undervoltage protection	Integrated
	Leakage alarm realized by software	Integrated
	Over temperature alarm	Integrated
	Power limit protection	Integrated
	Undervoltage recovery delay	Integrated
	Undervoltage auto recovery	Integrated
Others	Leakage protection realized by hardware	Integrated
	Altitude	Altitude<2000m,
	Operating Ambient Humidity	-25~+65°C (IP20)
	Dimensions (LxWxH)	105x100x147mm
	Weight	0.4kg
	Warranty	5 Years

Smart Plug

Ultra-compact balcony energy storage Solution



	Model JPlug15	
Data	Voltage	100V-250Vac
	Alternating current	10A
	Frequency	50Hz
	Minimum displayed power	1W
	Overvoltage category	II
	Measure	Voltage, current, power.
Smart contro	APP Control	Support
	Connection	APP connection and QR code scanning connection.
On/Off	APP control on/off (relay).	
	On/Off	Regular on and off.
	Push-button on-off.	
Wi-Fi (2.4 g)	Wi-Fi	IEEE802.11b/g/n+BLE4.2
	Frequency range	20M:2412-2472 MHz/ 40M:2422-2462 MHz
	Maximum output power	≤ 20 dBm
Bluetooth	Bluetooth	IEEE802.11b/g/n+BLE4.2
	Frequency range	2402-2480MHz
	Maximum output power	≤ 20 dBm
Pilot lamp	Blue flashing: Wi-Fi not connected; Blue: Wi-Fi connected	
	Status indicator lamp	Pink: Socket turned on; Fault: Red Bashing
	Off:	Socket turned off
Others	Pollution degree	2
	Altitude	≤ 2000m
	Operating Ambient Temp.	-20°C -45°C
	Operating Ambient Humidity	10%-90%RH
	Dimensions (LxWxH)	55x55x79mm
	Weight	95g
	Warranty	5 Years



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CO-INNOVATING A SMARTER FUTURE

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