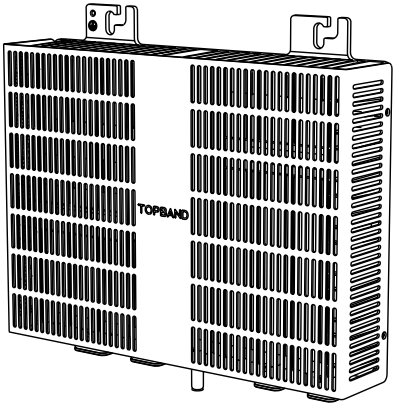
TOPBAND

CO-INNOVATING A SMARTER FUTURE



Single-phase 1200W

Hybrid Micro Inverter

Balcony Energy Storage Solutions

User manual

Disclaimer

Read this user manual carefully before using the product to ensure that you completely understand the product and can correctly use it. After reading this user manual, keep it properly for future reference. Improper use of this product may cause serious injury to yourself or others, or cause product damage and property loss. Once you use this product, it is deemed that you understand, approve and accept all the terms and content in this document. is not liable for any loss caused by the user's failure to use this product in compliance with this user manual. In compliance with laws and regulations, reserves the right to final interpretation of this document and all documents related to this product. This document is subject to changes (updates, revisions, or termination) without prior notice. Please visit 's official website to obtain the latest product information.

The crossed-out wheeled bin indicates that the electrical and electronic (EE) product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.

Contens

Safety Instruction

General safety

1. Please carefully read the documents before installing, operating or maintaining the equipment. The documents are subject to change due to product updates or other reasons.
2. Do not put heavy objects on the equipment.
3. Ensure that all cables and connectors are intact and dry before connecting to prevent electric shocks.
4. Fixtures must be wired in accordance with the National Electrical Code and all applicable local codes.
5. This product must be installed in accordance with the applicable installation code by a person familiarwith the construction and operation of the product and the hazards involved.
6. Use insulation tools or wear personal protective equipment when you install or operate the equipment.
7. Recommendation is to install it by two professionals.
8. Do not install or operate the equipment in extreme weather events such as lightning, snow, heavy rain, strong wind and so on.
9. Do not damage, smear or rip off any warning labels on the equipment.
10. Do not hit, pull, drag, squeeze or step on the equipment, or throw it into the fire, as there is risk of explosion.
11. After installing, please clean the remains of the installation, such as boxes, clipped cable ties, ripped insulation materials, etc.
12. Do not modify or repair the equipment, please contact our customer service or qualified personnel if necessary.
13. Use tools and the equipment correctly to prevent personal injuries and product damage.
14. Understand the components and function of the grid-tied PV power system. Make sure that all electrical connections, and voltage and frequency at the connection point meet the local microinverter grid-tie requirements.
15. Make sure the screws are tightened to the specified torque during installation (M5*12: 30Kgf*cm; ST5*12: 45 Kgf*cm; M6*20: 90 Kgf*cm).
16. If you only connect solar panels and the battery with the microinverter without plugging into the AC outlet, the microinverter shall be grounded.
17. It is strongly recommended to install an overcurrent circuit breaker between the equipment and the grid.
18. The equipment may get more than 70 °C (158 °F) while in use. Do not touch its enclosure before it cools down. Also, always keep the equipment out of reach of children and pets.
19. The installation location should be convenient for you to pull out the connectors.
20. Before you pull out the AC (or battery) connector from the microinverter, disconnect the cable from the AC socket (or 20. battery's) end.
21. Make sure the portable power station is off during the whole connection process.
22. You can only connect solar panels to the PV port and only connect an battery to the battery port.

Environment requirements

1. Make sure the equipment is installed, operated or stored in a well ventilated place.
2. Do not install or operate the equipment near flammable, explosive, corrosive, caustic or moist sources.
3. Do not expose the equipment to strong electromagnetic fields to avoid radio interference.

Explanation of Symbols

Symbols on the documentation

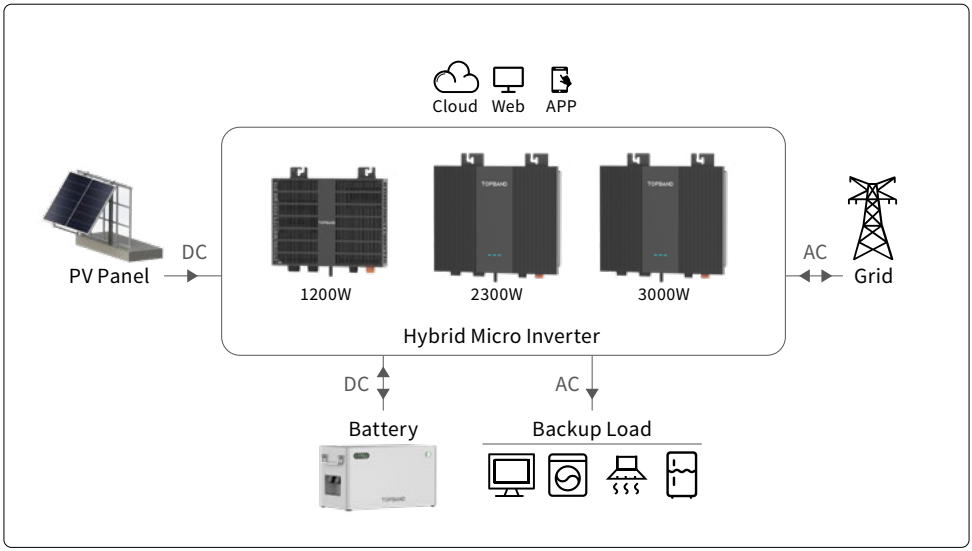
Symbol	Explanation	Symbol	Explanation
⚠ DANGER	A hazard with a high level of risk which, if not avoided, will result in death or serious injury.		Indicates additional information on correct use or useful tips.
⚠ CAUTION	A hazard with a low level of risk which, if not avoided, will result in minor injury, or demage to the device.	Yes 	In a basic set.
ⓘ NOTICE	Important information that you need to pay attention to.	Not 	Optional (not in the box)

⚠ DANGER **Do not damage, smear or cover any warning labels on the device. All labels must be visible after installation.**

Symbol	Explanation	Symbol	Explanation
	Refer to the operation instructions.		Caution, risk of electric shock; energy storage timed discharge.
	Caution, hot surface.		The position for connecting the protection ground cable.
	Caution, risk of danger.	**IP67**	Ingress Protection rating.

Preview the system

Balcony Energy Storage Solutions



What' in the box

Balcony Energy Storage Solutions

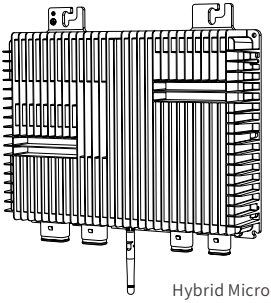
No.	Name	Description	In the box/Not in the box
a	Battery	Used for power storage.	Not 
b	Solar Panel	Up to two groups of solar panels can be connected to one microinverter.	Not 
c	Intelligent Shutoff	Intelligent Circuit Breaker for household.	Not 
A	Hybrid Micro Inverter	The core of the Balcony Energy Storage Solutions.	Yes 
B	Expansion screw	Installation Accessories.	Yes 
C	AC cable (On-grid)	Used for the connection between the micro inverter and access to grid.	Yes 
D	AC cable (Off-grid)	Used for the connection between the micro inverter and the Backup Load.	Yes 
E	DC cable (Battery)	Used for the connection between the micro inverter and the Battery.	Yes 
F	Solar cable (solar panel)	Used for the connection between the microinverter and the solar panel.	Yes 
G	Intelligent shutoff	Intelligent control, measurement, early warning, protection and other safety and convenient functions.	Not 

NOTICE

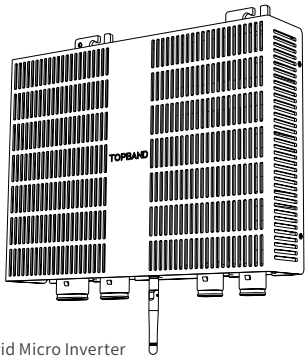
1. The images of the product and components may differ from the actual product.
2. If there are missing or defective components, please contact Your sales manager.

List of packing

Ⓐ Hybrid Micro Inverter



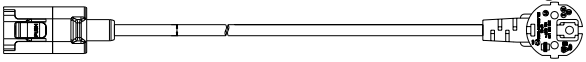
Hybrid Micro Inverter



Hybrid Micro Inverter
(It has an anti-scalding protective shell on it)

* Only one of the above items is included in the box.
* Please check with your distributor to see if the product you purchased has a protective shell.

Ⓒ

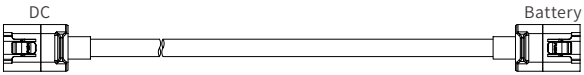


② Connecting wire

Ⓓ

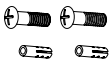
③ Connecting wire

Ⓔ



④ Connecting wire

Ⓑ



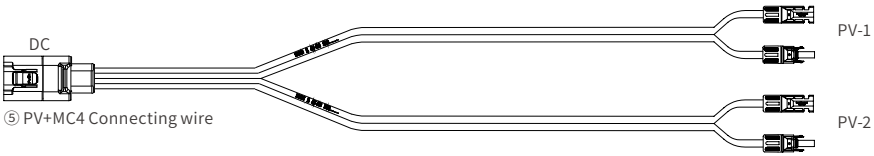
expansion screw
M4*50, 2pcs

expansion screw
M3*6, 4pcs

NOTICE

1. The lengths of cables vary in different countries or regions. Please refer to the actual products.

Ⓕ



⑤ PV+MC4 Connecting wire

PS: Total pv line length less than 3m (distance from PV panel to microinverter).

How to install

Product installation and operation instructions.

NOTICE

1. This user manual only provides the cable connection method and the mounting method for the microinverter.
2. For installing the solar panel,please refer to the instructions for the solar panel and its accessories.
3. If you wish to verify the solar system, complete the assembly on a sunny day.

• Select a location for the Microinverter.

NOTICE

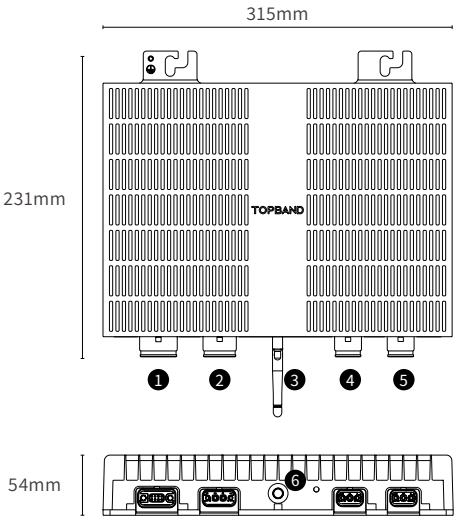
1. Make sure that the microinverter is within the **Wi-Fi** coverage.
2. Do not place or install the microinverter in an area where flammable or explosive materials are stored.
3. The IP rating of the microinverter is IP 66, hence, it can be installed either indoors or outdoors. However, the TOPBAND battery is not waterproof. If your system includes a battery, keep both of them indoors. .

• Product installation.

1. Battery port/DC port
   Connects with Battery.
2. PV port
   Connects with the solar panels.
3. Antenna
   Works with the Smart app and Smart Plugs.
4. AC off-grid
   Connects with the load.
5. AC on-grid
   Connects to grid.
6. Indication light

	Colar	Status	Means
◉	Green	Blinking	Standby mode
●	Green	Solid	Normal running
●	Red	Solid	Fault alert

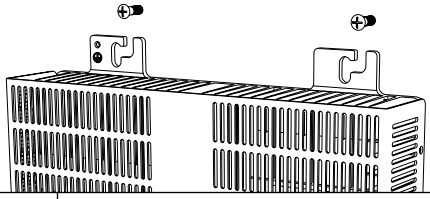
See “Troubleshooting” for details.



Product installation and operation instructions.

Ear-mount installation.

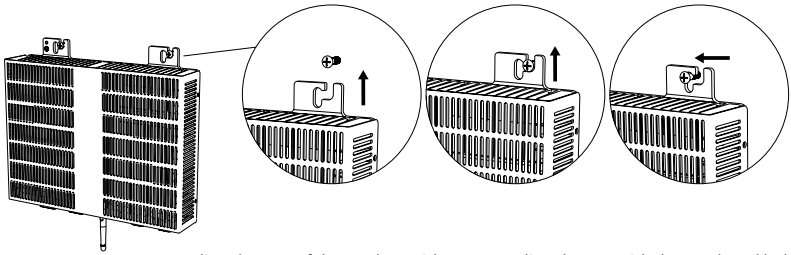
1. Determine the location of the two positioning holes in the wall.



2. After determining the installation method and installation position, drill two holes in the wall.

3. Place the M4 expansion screw into the positioning hole.

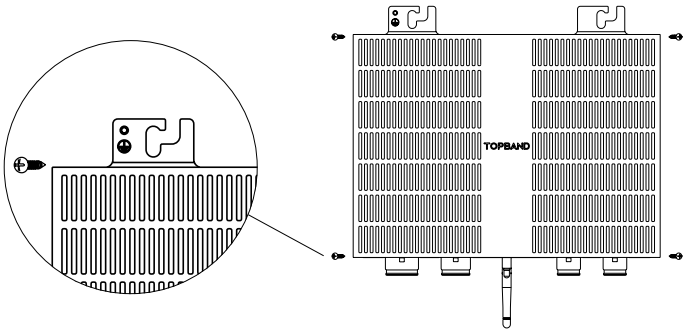
4. Insert the M4 mounting nail into the expansion screw.



5. Align the ears of the product with the peg and move it to the left.

6. Align the peg with the notch and hold the product. The mounting ear is installed.

Fix installation.

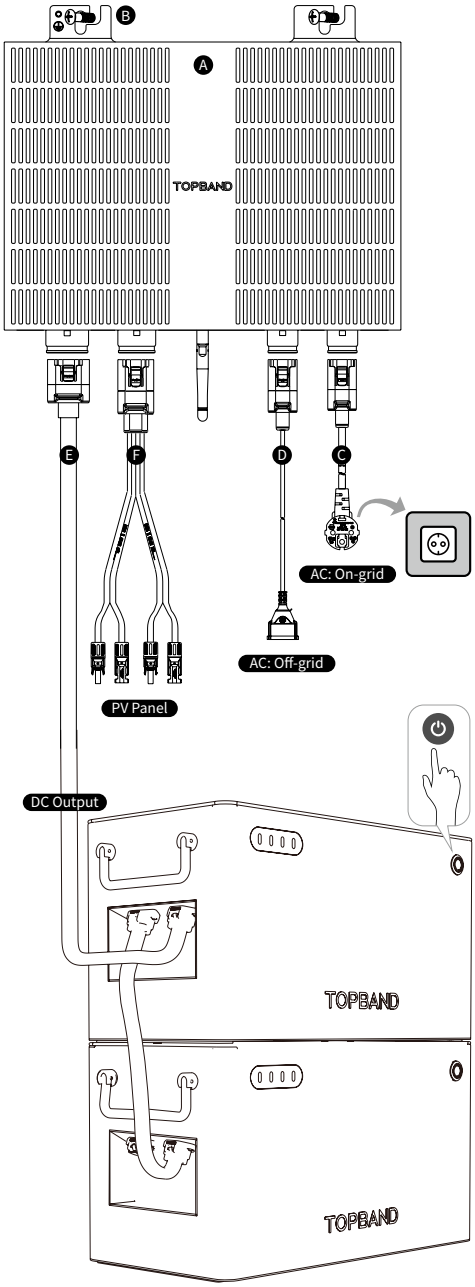


1. Align the four Angle mounting holes of the product with the four positioning holes of the wall.
2. Insert and tighten M3x12 screw into each of the four mounting holes in the cabinet.
3. Installation completed.

Product installation and operation instructions.

Connect other parts.

M4 mounting nail



⚠ DANGER

1. Make sure the inverter and battery are off during the whole connection process.
2. After the assembly is finished, connect to the mains C .

• Connection step

1. Assemble the connecting wiring as shown on the left.
2. Please confirm that the AC socket is switched on, and the power grid is being powered.
3. Turn on the battery.
4. After completing the connection, the LED indicator will light up green when the solar panel are working and the microinverter outputs AC.
5. Use the APP to connect the inverter and select the inverter working mode.
   (Inverter - APP connection, please refer to the APP operating instructions)
6. It is highly recommended to install the protective case.

How to connect app

Balcony Energy Storage Solutions

NOTICE

1. The figures are for reference only, please refer to the actual app interface.

• Control, monitor, and customize your microinverter from afar with the app.

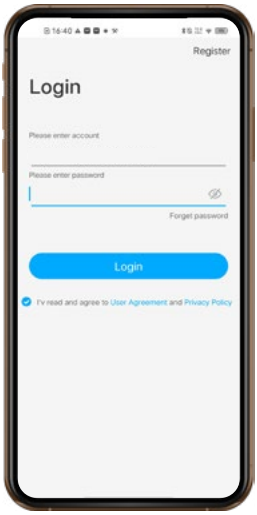
1. **Scan code to download APP.**
2. **Privacy policy:** by using our Products, Applications, and Services, you consent to the TOPBAND Term of Use and Privacy Policy, which you can access via the "About" section of the "User" page on the App.

Download on the App Store

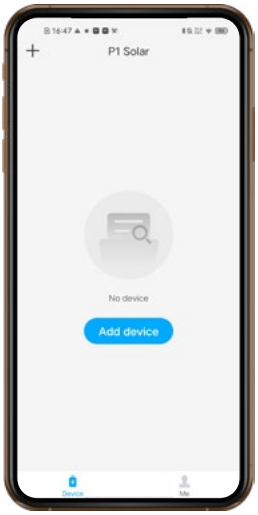
GET IT ON Google Play

1. Download and open the APP.

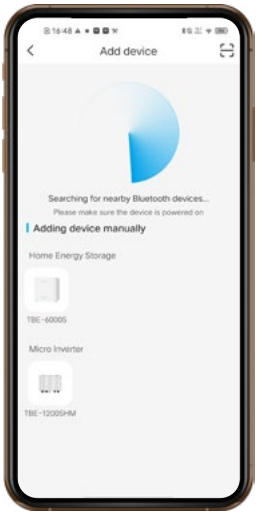
2. Follow the prompts to register the app. Devices can be added after registration.



3. Make sure the microinverter is powered on, turn on Bluetooth, and click "Add Device".

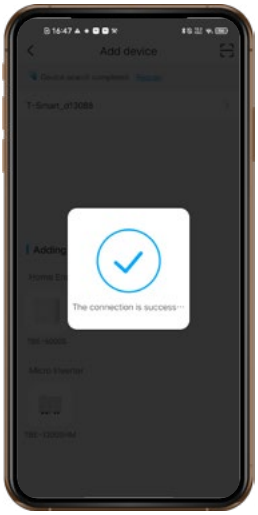


4. The phone starts searching for microinverter devices.



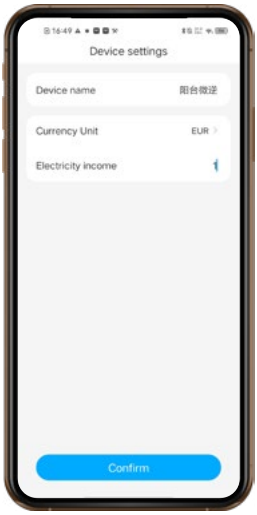
5. When the device appears on the interface, select the device you want to connect.

6. Wait until the connection is completed

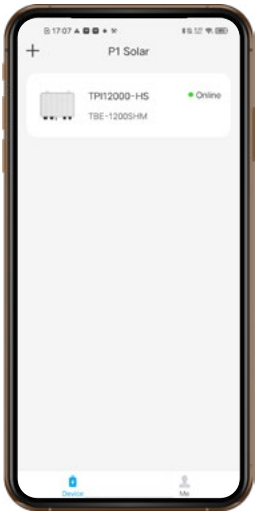


7. After the device is successfully connected, connect to WiFi. If there is no Wi-Fi, skip.

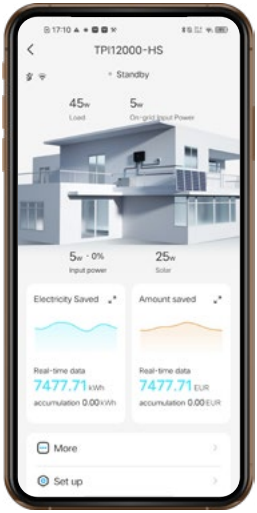
8. Name the device and choose a currency and price based on your country or region.



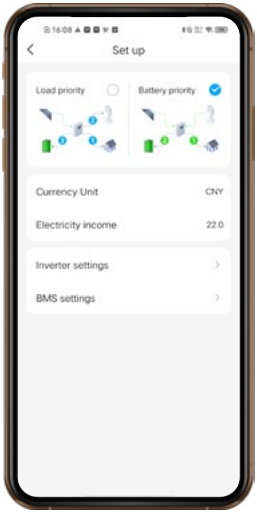
9. When the setting is successful, return to the homepage.



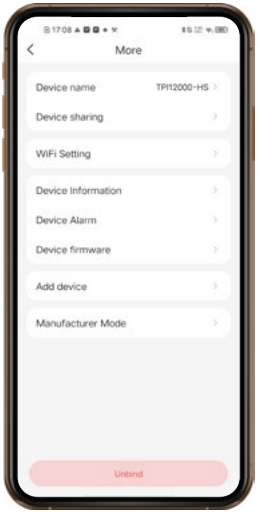
10. Click the product icon to go to the monitoring page, and you can view the running information of the current product.



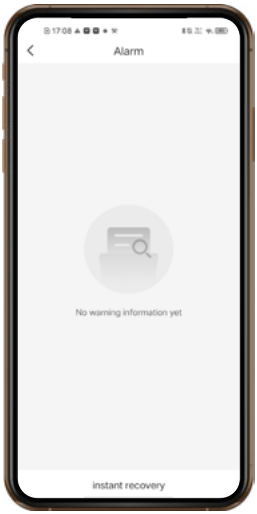
11. You can choose “load priority” or “battery priority” according to your electricity needs.



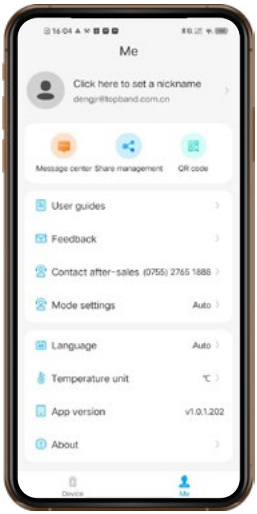
12. You can choose “More”, to learn more about the operation of micro inverters.



13. If a warning message appears, check to troubleshoot or contact your local dealer.



14. On the “Mine”, you can select different languages or temperature units, among other Settings.



Troubleshooting

⚠ DANGER

1. If the LED indicator turns red, warning or errors occur. Please follow the instructions in the app or the table below to deal with the problem. If the issue is not resolved, please contact the customer services or the dealer

Fault types.

There are five types of inverter faults.
Corresponding attribute: pcs_warn (A maximum of four faults exist simultaneously) .

1. Inverter failure: Prompt -- Confirm that the inverter connection is normal and manually clear the fault.
2. AC output fault: Prompt - check the off-grid load and mains connection.
3. charging failure: Prompt - check the battery status and connection.
4. Mains failure: Prompt - Confirm whether the inverter specifications match the access grid.
5. Photovoltaic panel failure: Prompt -- Confirm whether the photovoltaic panel specifications match the inverter.

There are one types of battery pack faults.
Corresponding attribute: bms_warning.

1. Fault Code 1-4: Warning -- Check battery status and connection
2. Fault Code 5-8: Warning -- Check the battery charging and discharging status and ensure that the battery is placed at room temperature

Fault type	No.	Meaning	Media types	Severity
Trouble-free	0	Trouble-free	App message push	Fault
Inverter failure	1	The chip initialization failed. Procedure	App message push	Fault
	2	The NTC is not connected or the temperature is low	App message push	Fault
	3	The NTC is overheated. Procedure	App message push	Fault
	4	Bus undervoltage	App message push	Fault
	5	Bus overvoltage	App message push	Fault
	6	Bus short circuit	App message push	Fault
	7	Push-pull soft start timed out	App message push	Fault
	8	The inductance current differs greatly from the output current	App message push	Fault
	9	The PFC soft startup times out	App message push	Fault
	10	Internal communication failure	App message push	Fault
	11	The battery discharge overcurrent	App message push	Fault
	12	The mains input relay is faulty	App message push	Fault
	13	The temperature of PV1 is high	App message push	Fault
	14	The temperature of PV1 is low	App message push	Fault
	15	BuckBoost1 is short-circuited	App message push	Fault
	16	The input current of PV1 is overflowed	App message push	Fault
	17	PV1 charging short circuit or overcurrent	App message push	Fault
	18	Bus 2 undervoltage	App message push	Fault
	19	Bus 2 overvoltage	App message push	Fault
	20	Bus 2 short circuit	App message push	Fault
	21	The temperature of PV2 is too high	App message push	Fault
	22	The temperature of PV2 is low	App message push	Fault
	23	BuckBoost2 is short-circuited	App message push	Fault
	24	The input current of PV2 is overflowed. Procedure	App message push	Fault
	25	The PV2 is short-circuited or overcurrent	App message push	Fault
	26	BatBoost current-limiting shutdown	App message push	Fault
	27	BatBuck current-limiting shutdown	App message push	Fault
	28	Push-pull current-limiting shutdown	App message push	Fault
	29	Battery charging current reverse shutdown	App message push	Fault

Ac output fault	100	The inverter is powered off	App message push	Fault
	101	Inverter output short circuit	App message push	Fault
	102	Inverter current limit times to shutdown	App message push	Fault
	103	The inverter output overvoltage	App message push	Fault
	104	Inverter output undervoltage	App message push	Fault
	105	Inverter voltage high residual voltage	App message push	Fault
Mains failure	140	The mains voltage is abnormal	App message push	Fault
	141	The mains frequency is abnormal. Procedure	App message push	Fault
	142	The mains input is overcurrent	App message push	Fault
Charging failure	160	Battery undervoltage	App message push	Fault
	161	Battery overvoltage	App message push	Fault
	162	Charge output short circuit	App message push	Fault
	163	Charge output overcurrent	App message push	Fault
	164	LLC Limits the number of streams to shutdown	App message push	Fault
	165	Charge output undervoltage	App message push	Fault
Photovoltaic panel fault	180	The PV1 voltage is high	App message push	Fault
	181	The PV1 voltage is low	App message push	Fault
	182	The PV2 voltage is high	App message push	Fault
	183	The PV2 voltage is low	App message push	Fault
Battery pack failure	1	The total battery voltage is overvoltage	App message push	Fault
	2	Total battery voltage Undervoltage	App message push	Fault
	3	The battery discharge overcurrent	App message push	Fault
	4	The battery is overcharged	App message push	Fault
	5	Discharge high temperature	App message push	Fault
	6	Discharge low temperature	App message push	Fault
	7	Charging high temperature	App message push	Fault
	8	Charging low temperature	App message push	Fault

⚠ DANGER

1. Do not attempt to repair the inverter by disassembly.
2. If necessary, contact your local dealer to send professionals to solve the problem.

Technical datasheet

	Model	TPI1200-HS
Input data (PV)	Nominal voltage range	12~53Vdc
	Input voltage range	12~57Vdc
	Max. Input DC voltage	Max.59Vdc
	Input current	14A
	Standby power dissipation	Max.4W
	Reverse input	Nonsupport
	MPPT Tracker	2
Input data (DC battery)	Input voltage range	28-59Vdc
	Max. Input DC Voltage	Max.59Vdc
	Inrush current	No requirement
	Input current	35A
	Leakage current	Max.0.5A
	No-load power dissipation	Max.6W
	Reverse Input	Nonsupport
AC output data (on-grid)	Output voltage	176~ 260Vac
	Rated output power	800W
	Max. AC apparent power	1000VA
	AC grid frequency	50/60 Hz
	Max. output current	3.7A
	Power factor	0.8leading…0.8lagging
	THDI	Max.3 (Full load)
AC output data (off-grid)	Battery to AC efficiency	94%Max
	PV to Battery efficiency	97% max
	AC grid connection type	Single phase
	AC nominal power	1200W
	Max. AC apparent power	1200VA
	Nominal AC voltage	230V
	AC grid frequency	50/60 Hz
Protection devices	Max. output current	5.2A
	AC output type	Single phase
	Max. apparent power	1200VA
	Nominal AC voltage	230V
	AC grid frequency	50/60 Hz
	Input over voltage protection	Integrated
	Input under voltage protection	Integrated
	Over temperature protection	Integrated
	Output over power protection	Integrated
	Short output protection	Integrated
	Output under voltage protection	Integrated
	Output over voltage protection	Integrated
	Constant power output protection	Integrated
Others	Ingress Protection	IP65
	Protective Class	Class I
	Operating Ambient Temp.	-40℃~+50℃
	Power factor range	0.8leading~0.8lagging
	Display	LED+APP (Wi-Fi+Bluetooth)
	Interfaces	RS485, CAN
	Warranty	5 Years
	Dimensions (LxWxH)	321x285x54mm
	Weight	≈5kg

www.topband.com.cn

TOPBAND

CO-INNOVATING A SMARTER FUTURE

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