

Please, read this manual
carefully before use!

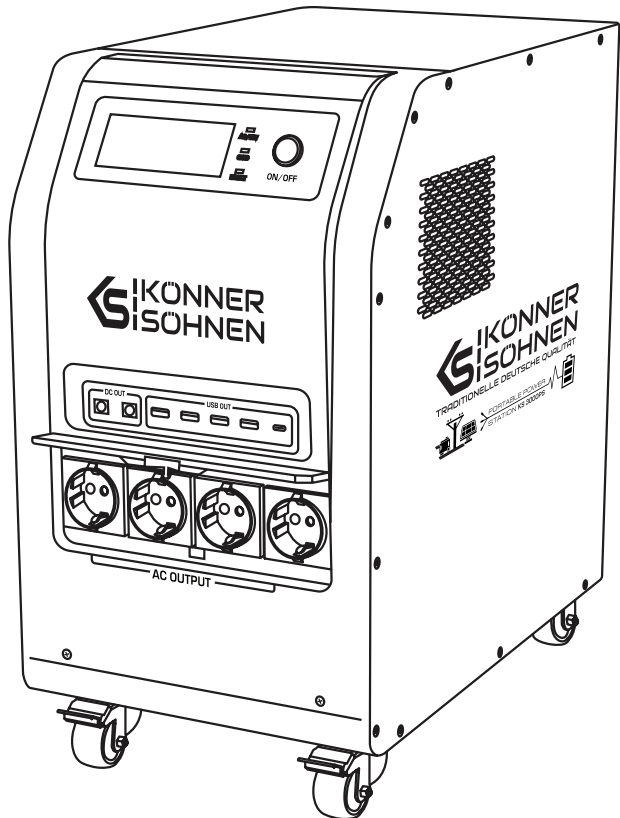
Owner's Manual



Portable power station

KS 3000PS

KS 5200PS





Thank you for opting for **Könnner & Söhnen®** products. This manual contains a brief description of safety, setup and use. More information can be found on the official importer's website in the support section: konner-sohnen.com/manuals. You can also go to the support section and download the manual by scanning the QR code or on the website of the official importer of **Könnner & Söhnen®** at www.konner-sohnen.com



Please, read this manual carefully before use!

The manufacturer of **Könnner & Söhnen®** products reserves the right to make changes that may not be reflected in this manual, namely:

- The manufacturer reserves the right to make changes in the product design, configuration and construction.
- The images and drawings in this manual are for reference only and may differ from the actual components and inscriptions on the products.

Contact information that you are free to use in case of any problems can be found at the end of this manual. All information in this manual is correct to the best of our knowledge and belief at the date of its publication. The current list of service centers can be found on the official importer's website at www.konner-sohnen.com



ATTENTION - DANGER!



Failure to follow the recommendations marked with this sign may lead to serious injury or death of the operator or third parties.



IMPORTANT!



Useful information while operating the machine.

PRODUCT DESCRIPTION

1

This product is a multi-function power station that combines a storage battery, MPPT solar charge controller, high frequency pure sine wave inverter and uninterruptible power supply system, and is suitable for emergency power supply or mobile use;

Thanks to the advanced MPPT solar charge controller and intelligent management of the built-in battery, the power station ensures maximum electricity production;

The built-in inverter generates "pure sine wave", has high efficiency, high power, small size and other advantages, and is easy to operate;

The whole unit has high efficiency and low static load losses, as well as high productivity and high power density, which is important for a mobile system.

SAFETY INFORMATION

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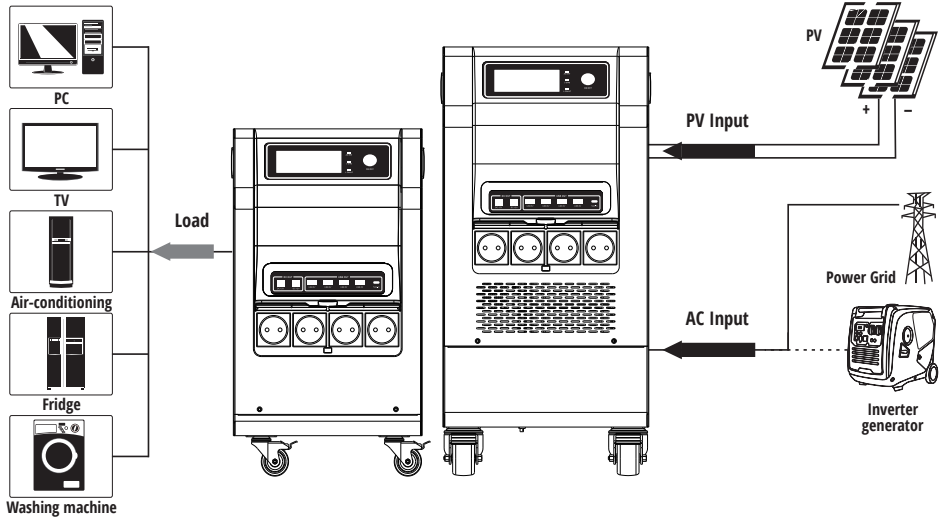
- Before using this unit, please read all instructions and precautions on this unit, understand all relevant chapters in this manual to prevent explosion which may lead to personal injury and battery damage.
- Do not disassemble the unit. When service or repair is required, send it to a professional service center. Incorrect assembly may result in electric shock or fire.
- To reduce the risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning. Turning off the device does not reduce this risk.

FEATURES

- Pure sine Wave AC Output Inverter with rated power of 2 or 3 kW (depending on the model) when the power factor of the load to be supplied is 1.
- High performance with small dimensions, transport wheels for high mobility.
- Setting input voltage and voltage range on the LCD Screen.
- 5V USB and 12V DC output supported.
- AC input voltage range and priority of the energy source configurable on LCD. Protection functions such as overload, over temperature and short circuit.

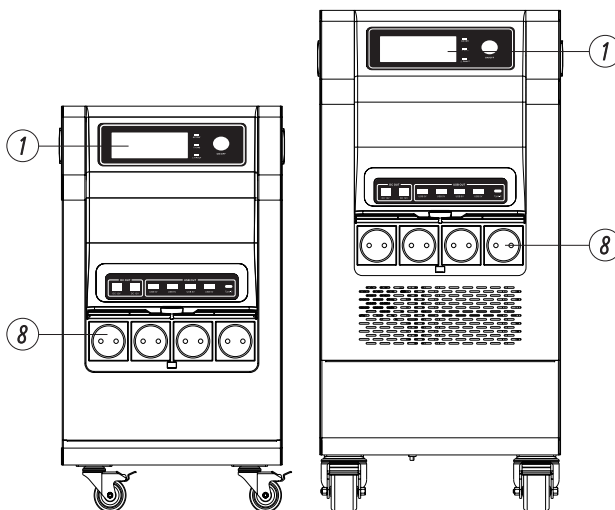
BASIC SYSTEM STRUCTURE

3

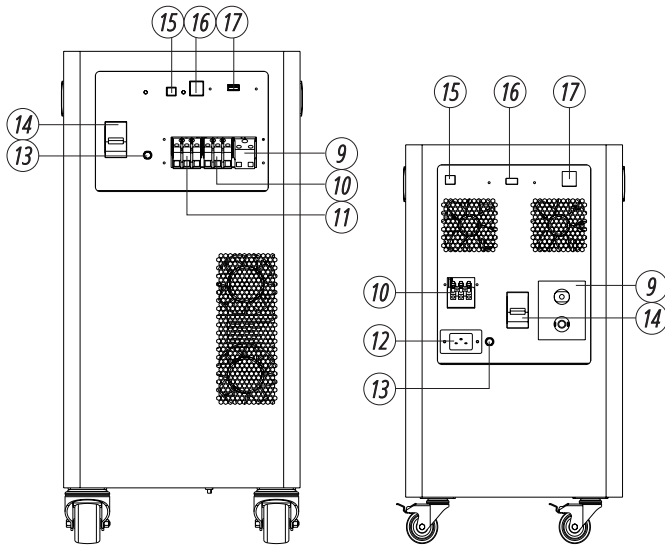


MAIN OVERVIEW

4



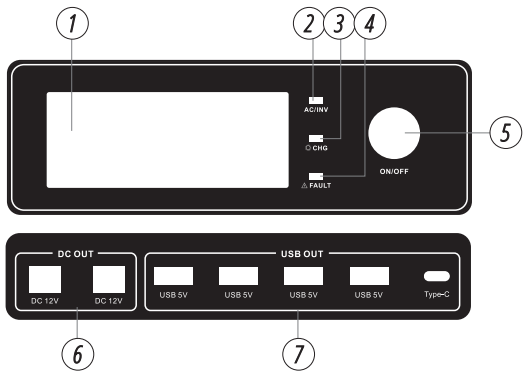
1. LCD display
2. Status Indicator
3. Charge/discharge Indicator
4. Fault Indicator
5. ON/OFF Button
6. DC 12V output
7. DC 5V USB output
8. AC output sockets
9. PV input terminal
10. AC output terminal block
11. AC input terminal block
12. AC input socket
13. AC input over-current protection
14. Battery Breaker
15. USB-A communication port
16. USB Wi-Fi
17. Dry Contact



PART LIST

Make sure nothing in the package is damaged. You should have received the following items inside the package.

- Machine × 1
- User Manual × 1
- Mains input line × 1
- USB Cable × 1



IMPORTANT!



Manufacturer reserves the right to make changes and/or improvements in design, components set and technical attributes without notice and without incurring obligation. The pictures in this manual are schematical and may not match the parameters of original product.

Model		KS 3000PS	KS 5200PS
INVERTER OUTPUT	Rated Power	3000 W	5200 W
	Output Waveform	Pure Sine Wave	
	Output voltage	230 V ±5 %	
	Output frequency	50Hz / 60Hz (±0.2Hz)	
	Peak efficiency	90%	
	Standby Consumption	< 25W	
PV INPUT	Max charging current	60A (±3A)	100A (±3A)
	Max combined charging current	120A (±4A)	120A (±4A)
	Max efficiency	98% max	
	PV array open circuit voltage	160VDC	450VDC
	PV Array MPPT Voltage	30–128VDC	150–430VDC
AC INPUT	AC input voltage	230VAC ±5%	
	Input voltage range	90-280VAC	
	Nominal input frequency	50Hz / 60Hz (Auto detection)	
	Transfer time	10ms typical (UPS, VDE); 20ms typical (APL)	
	Max AC Charging current	16A	25A
DC OUTPUT	USB 5V	4PCS (5V/2A)	
	12V	2PCS (12V/1A)	
	Type-C	1PCS (5V/2A)	
Lithium Battery	Nominal voltage	25.6V	51.2V
	Battery capacity	120Ah/3200Wh	100Ah/5120Wh
	Rated discharge current	120A	100A
	Operation temperature	Charge	0°C to 45°C
	Discharge	-10°C to 60°C	
Dimensions (LxWxH)		550×380×670 mm	598,5×404×682 mm
Net weight		37 kg	56 kg

ELECTRICAL CONNECTION

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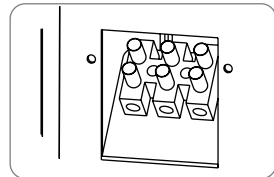
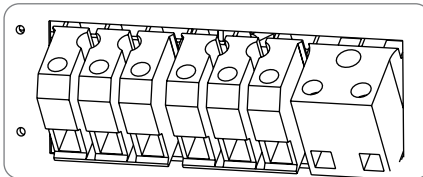
AC INPUT /OUTPUT TERMINAL BLOCKS



CAUTION!



On the left picture are two terminal blocks with “INPUT” and “OUTPUT” markings for 5.2 kW model. Please do NOT misconnect input and output connectors. On the right picture the output terminal block for 3 kW model.



CAUTION!



Before connecting to AC input power source, please install a separate AC breaker between inverter and AC input power source. This will ensure the inverter can be securely disconnected during maintenance and fully protected from over current of AC input. The recommended spec of AC breaker is 16A for 3 kW model and 25A for 5.2kW model.



WARNING!



All wiring must be performed by a qualified person.




WARNING!



It's very important for system safety and efficient operation to use appropriate cable for AC input connection. To reduce risk of injury, please use proper recommended cable size as below.

Product Model	Typical Amperage	AWG No.
KS 3000PS	13A	12AWG
KS 5200PS	23A	10AWG

Please follow below steps to implement AC input/output connection for 5.2 kW model, and to implement AC output connection for 3 kW model:

1. Before making connection, be sure to open AC disconnecter first.
2. Remove insulation sleeve 10mm for six conductors. Shorten phase, L and N conductors by 3mm.
3. Insert AC input wires according to polarities indicated on terminal block and tighten the terminal screws. Be sure to connect PE protective conductor  first.



– Ground (yellow-green)

L – LINE (brown or black)


N – Neutral (blue)



WARNING!



Be sure to that AC power source is disconnected before attempting to hardwire it to the unit.

4. Then, insert AC output wires according to polarities indicated on terminal block and tighten terminal screws. Be sure to connect PE protective conductor  first.



– Ground (yellow-green)

L – LINE (brown or black)

N – Neutral (blue)

5. Make sure the wires are securely connected.



CAUTION!



Important

Be sure to connect AC wires with correct polarity. If Land N wires are connected reversely, it may cause a short circuit in the utility when these inverters are operating in parallel.



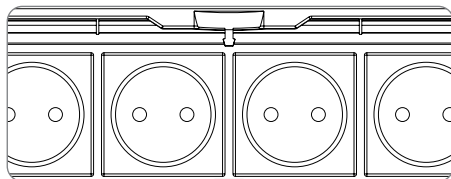
CAUTION!



Appliances such as air conditioner are required at least 2-3 minutes to restart, as this time is needed to balance the refrigerant gas inside the circuits. If a power shortage occurs and recovers in a short time, it will cause damage to your connected appliances. To prevent this kind of damage, please check with the air conditioner manufacturer if it's equipped with time-delay function before installation. Otherwise, this inverter/charger may trigger an overload fault and cut off output to protect your appliance, though it may still cause internal damage to the air conditioner.

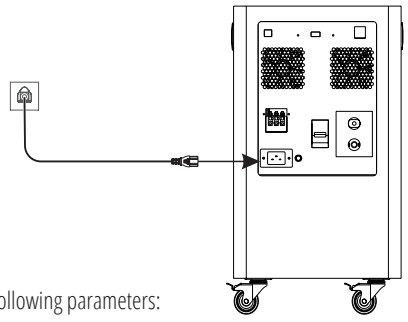
AC OUTPUT SOCKET

There are 4 AC output sockets in the front for both 3 kW and 5.2 kW model. You can directly take AC power from AC output sockets.



AC INPUT SOCKET

There is a AC input socket for 3 kW model. Directly connect a gird socket and AC input socket with mains input line. The battery will be charged.



PV CONNECTION

PV Module Selection

When selecting proper PV modules, please be sure to consider the following parameters:

- The open circuit voltage (Voc) of the PV modules should not exceed the max. PV array open circuit voltage of the inverter.
- Open circuit Voltage (Voc) of PV modules should be higher than min. PV array voltage.
- Max. Power Voltage (Vmpp) of PV modules should be close to the best Vmp of inverter or within Vmp range to get best performance. If one PV module can not meet this requirement, it's necessary to have several PV modules in series connection. Refer to below table.



NOTE



Vmp: panel max power point voltage.
The PV charging efficiency is maximized while PV system voltage is close to Best Vmp.

Maximum PV module numbers in Series: $V_{mp} \text{ of PV module} \times X \text{ pcs} = \text{Best Vmp of Inverter or Vmp range}$

PV module numbers in Parallel: $\text{Max. charging current of inverter} / I_{mp}$

Total PV module numbers = maximum PV module numbers in series * PV module numbers in parallel.

Model	KS 3000PS	KS 5200PS
Max. PV Array Open Circuit Voltage	160VDC	450VDC
PV Array MPPT Voltage Range	30–128VDC	150–430VDC
MPPT Number	1	

PV PANEL CONNECTION



CAUTION!



Before connecting to PV modules, please install separately a DC circuit breaker between unit and PV modules.



WARNING!



All wiring must be performed by a qualified personnel.



WARNING!

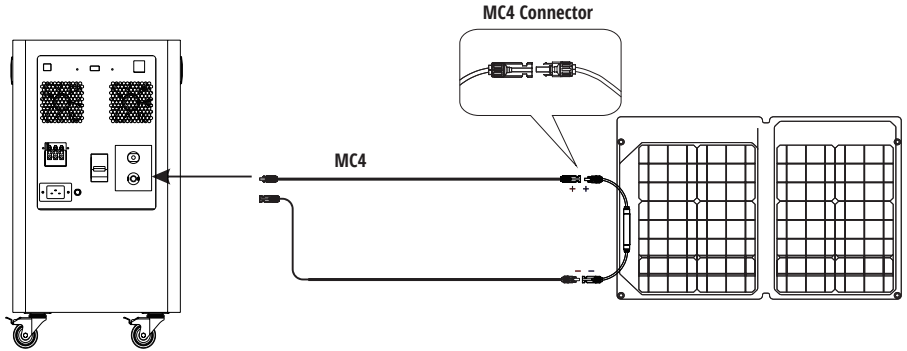


It's very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper recommended cable size as below.

Model	Typical Amperage	Cable Size	Torque
KS 5200PS	27A	10AWG	1.2 ~ 1.6 Nm
KS 3000PS	18A	12AWG	

MC4 CONNECTOR

For 3 kW models, connect PV panel to the UNIT through the MC4 PV input port.



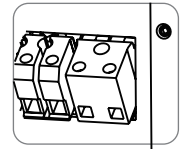
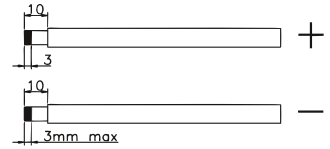
PV TERMINAL BLOCK

For 5.2 kW models, please follow below steps to implement PV module connection:

Step 1: Remove insulation sleeve 10 mm for positive and negative conductors.

Step 2: Check correct polarity by connecting the positive pole (+) of the connection cable to the positive pole (+) of the PV input terminal. Connect the negative pole (-) of the connection cable to the negative pole (-) of the PV input terminal.

Step 3: Make sure the wires are securely connected.



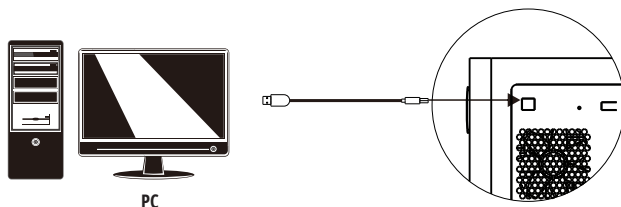
DRY CONTACT SIGNAL

There is one dry contact (3A/250VAC) available on the rear panel. It can be used to send a signal to external device when battery voltage reaches warning level.

Unit status	Condition		Dry contacts port:	
			NC&C	NO&C
POWER OFF	Unit is off and no output is powered.		Close	Open
POWER ON	Parameter 01 set as UTI	Battery voltage reaches the value > parameter 21 during charging (default 27V)	Close	Open
		Battery voltage reaches the value < warning level during the discharging process (parameter 19 + 1V)	Open	Close
	Parameter 01 is set as SbU, SOL	Battery voltage reaches the value > parameter 21 during charging (default 27V)	Close	Open
		Battery voltage reaches the value < parameter 20 during the discharging process (default 24V)	Open	Close

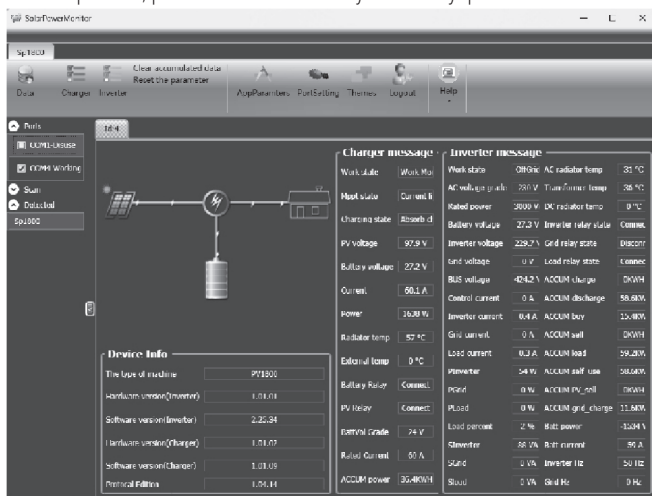
UPPER COMPUTER COMMUNICATION

Please use the supplied USB communication cable to connect the device and PC through the USB-A communication port.



Download the software by link on the cover of this manual into PC and follow instruction on screen to install the monitoring software.

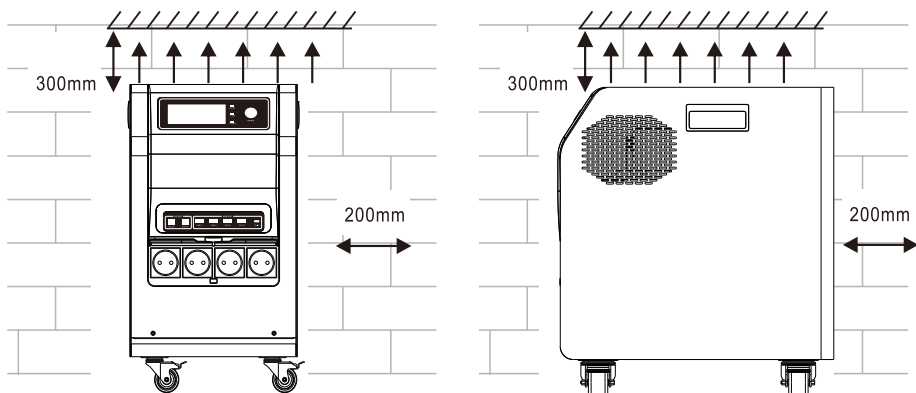
For the detailed software operation, please consult the seller if you have any questions.



OPERATION

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Before turning on the device, please reserve a distance of more than 300mm above the device and 200mm to the left and right to ensure for heat dissipation. To ensure the best operation, the ambient temperature should be between 0-40 °C.



OPERATION AND DISPLAY PANEL

The operation and display panel shown as below includes 3 LED indicators, an ON/OFF switch and a LCD display, indicating the operation status of device.

LCD display



Status indicator

ON/OFF

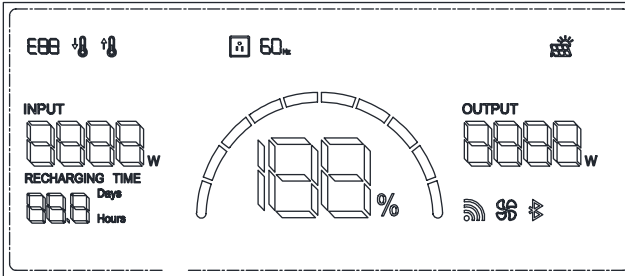
Charging indicator

Fault indicator

LED INDICATOR

LED Indicator		Messages	
AC/INV	Green	Solid On	Output is powered by grid in line mode.
		Flashing	Output is powered by battery or PV in battery mode.
CHG	Yellow	Flashing	Battery is charging (charge or floating).
FAULT	Red	Solid On	Fault occurs in the power station.
		Flashing	Warning condition occurs in the power station.

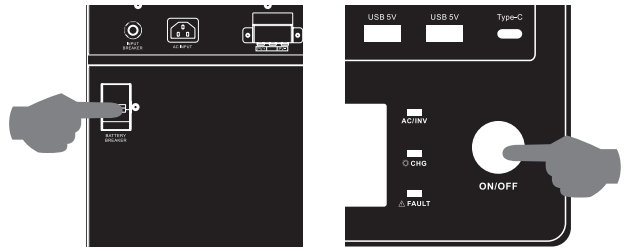
LCD DISPLAY ICONS



Icon	Description
	AC Input - The device has connected to the mains.
	PV Input - The device has connected to the PV panel.
	Output Frequency - Indicates output frequency (50/60Hz) of the device.
	Error code - Indicates the error occurred inside the device.
	Low Temperature Warning - The internal temperature of the battery is lower than the warning temperature.
	High Temperature Warning - The internal temperature of the battery is higher than the warning temperature.
	Input Power - Indicates the total input power including AC input and PV input.
	Output Power - Indicates the AC load power.
	Battery Power Percentage - Indicates the real-time percentage of the battery, and the 10- bar lights indicate the power of 5%,15%,25%,35%,45%,55%, 65%,75%,85%,95%.
	Recharging Time - When the battery is recharging, this icon will display.
	Remaining Time - When the battery is discharging, this icon indicates the remaining usage time under current load condition. When the battery is recharging, this icon indicates the recharging time under current charging condition.

POWER ON/OFF

Please close the battery breaker on the back firstly, then the device could be turned on by pressing the ON/OFF switch located on the front



INPUT AND OUTPUT

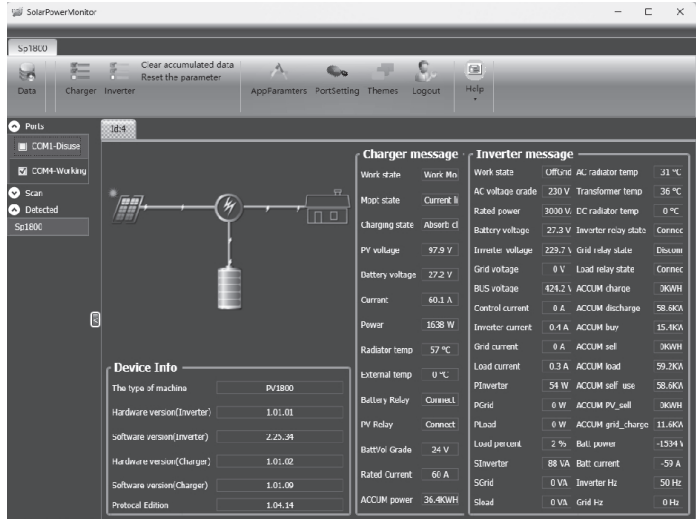
1. DC output is powered without turning on the device.
2. After turning on, you can take power directly from the AC output sockets.
3. Use the supplied mains input line to connect the grid to the AC input socket and charge the battery from the mains.
4. Avoid moving the device while it is running.

MONITORING

Please use the supplied USB communication cable to connect the device to the PC.

Download the software by link on the first page of this manual to your PC and follow instruction on screen to install the monitoring software.

For the detailed software operation, please consult the seller if you have any questions.



PARAMETERS MODIFICATION



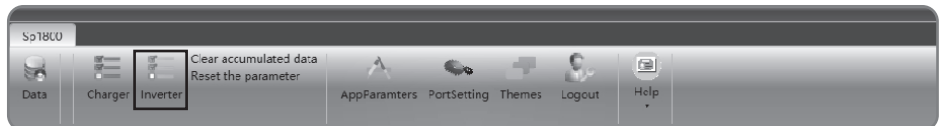
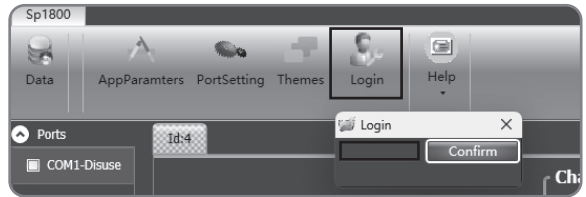
WARNING!



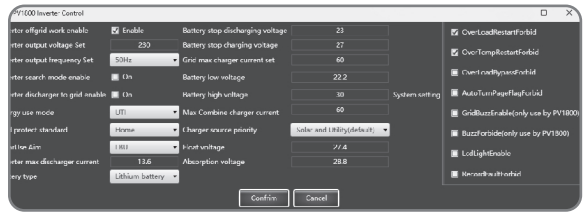
Please refer to the manual carefully or consult our professionals before modifying the device parameters, to prevent performance degradation or device failure.

Follow these steps for modifying parameters:

1. Click Login icon on the top bar, then enter password to enter PowerUser Mode.
2. The top bar will change as shown as below. Click the Inverter icon to open the parameters setting window.



3. The parameters setting window is shown as below. After modification, click Confirm and wait for 15 seconds, repeat last step to check if the parameters are modified successfully.



TROUBLE SHOOTING 8

Problem	LCD/LED/Buzzer	Explanation/Possible cause	What to do
Unit shuts down automatically during startup process.	LCD/LEDs and buzzer will be active for 3 seconds and then completely off.	The battery voltage is too low.	<ol style="list-style-type: none"> 1. Recharge battery. 2. Return to repair center.
No response after power on.	No indication.	<ol style="list-style-type: none"> 1. The battery voltage is far too low. 2. Battery polarity is connected reversed. Input protector is tripped. 	<ol style="list-style-type: none"> 1. Check if the battery breaker is ON. 2. Recharge battery. 3. Return to repair center.
Mains exist but the unit works in battery mode.	Input voltage is displayed as 0 on the LCD and green LED is flashing.	Input protector is tripped.	Check if AC breaker is tripped and AC wiring is connected properly.
	Green LED is flashing.	Insufficient quality of AC power (Shore or Generator).	<ol style="list-style-type: none"> 1. Check if AC wires are too thin and/or too long. 2. Check if generator (if the used) is working properly or if the input voltage range setting is correct. (Appliance=>wide)
When the unit is turned on, internal relay is switched on and off repeatedly.	LCD display and LEDs are flashing.	Battery is disconnected.	Check if the battery breaker in ON.
Buzzer beeps continuously and red LED is on.	Fault code 07.	Overload error. The inverter is overload 110% and time is up.	Reduce the connected load by switching off some equipment.
	Fault code 05.	Output short circuited.	Check if wiring is connected properly and remove abnormal load.
	Fault code 02.	Internal temperature of inverter component is over 90 °C.	Check whether the air flow of the unit is blocked or whether the ambient temperature is too high.
	Fault code 03.	Battery is over-charged.	Return to repair center.
		The battery voltage is too high.	Check if spec and quantity of batteries are meet requirements.
	Fault code 01.	Fan fault.	Replace the fan.
	Fault code 06/58.	Output abnormal (Inverter voltage below than 202Vac or is higher than 253Vac)	<ol style="list-style-type: none"> 1. Reduce the connected load. 2. Return to repair center.
	Fault code 08/09/53/57.	Internal components filed.	Return to repair center.
	Fault code 51.	Over current or surge.	Restart the unit. If the error happens again, please return to repair center
	Fault code 52.	Bus voltage is too low.	
	Fault code 55.	Output voltage is unbalanced.	
Fault code 56.	Battery is not connected well or fuse is burnt.	If the battery is connected properly, please return to repair center.	



EC Declaration of Conformity

Nr. 200

The following products have been tested by us with the listed standards and found in compliance with the European Community Electromagnetic compatibility Directive (EMC) 2014/30/EC, Low Voltage Directive 2014/35/EC.

Manufacturer: DIMAX INTERNATIONAL GmbH
Address: Flinger Broich 203, 40235 Duesseldorf, Germany
Product: Portable power station "Könnner & Söhnen"
Type / Model: KS 3000PS, 5200PS

The statement is based on a single evaluation of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo. The manufacturer should ensure that all product in series production are in conformity with the product sample detailed in this report. The applicant should hold the whole technical report at disposal of the competent all the right.

Applied EC Directives: 2014/30/EC Electromagnetic compatibility Directive (EMC)
2014/35/EU Low Voltage

Applied Standards: EN 62109-1:2010
EN 62109-2:2011
EN IEC62109-1:2010
EN IEC62109-1:2011
EN IEC61000-6-1:2019
EN IEC61000-6-3:2021



Issued Date:
Place of issue:
Director:

2024-05-06
Duesseldorf
Fomin P. *P. Fomin*

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We DIMAX INTERNATIONAL GmbH hereby declare that specified above conforms covering European Parliament and Council Directives, 2014/35/EC Low Voltage Directive of 26 February 2014, Electromagnetic compatibility Directive (EMC) 2014/30/EC of 26 February 2014. The CE mark above can be used under the responsibility of manufacturer. After completion of an EC declaration of Conformity and compliance with all relevant EC directives.

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