

Please, read this manual  
carefully before use!

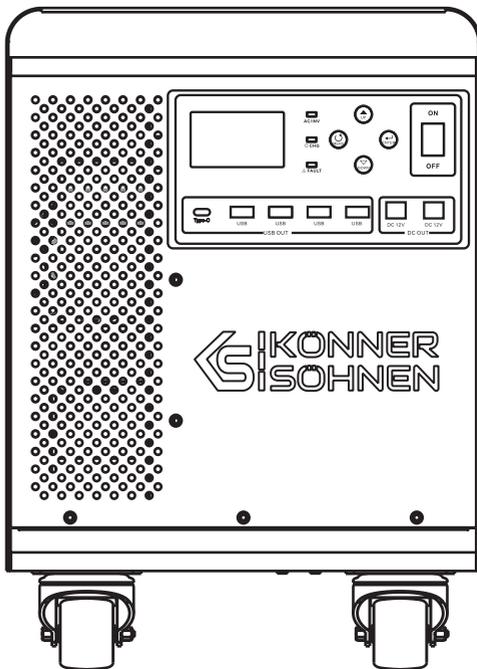
Owner's Manual



## Portable power station

KS 2000PS

KS 3000PS





Thank you for opting for **Könner & 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](http://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 **Könner & Söhnen®** at [www.konner-sohnen.com](http://www.konner-sohnen.com)



*Please, read this manual carefully before use!*

The manufacturer of **Könner & 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](http://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

2

- 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

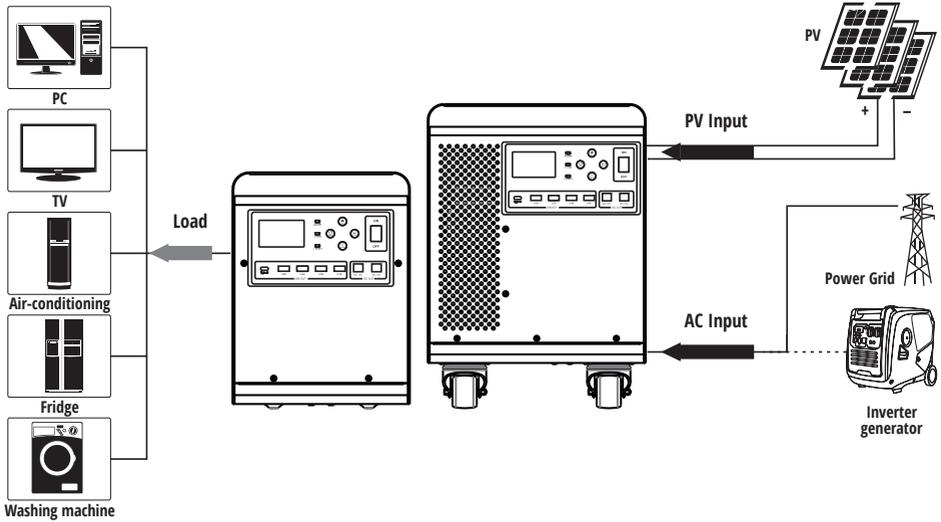
- Pure sine Wave AC Output Inverter with rated power of 2 or 3 kW (depending on the model) when the power factor of the load to be supplied is 1.

- 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

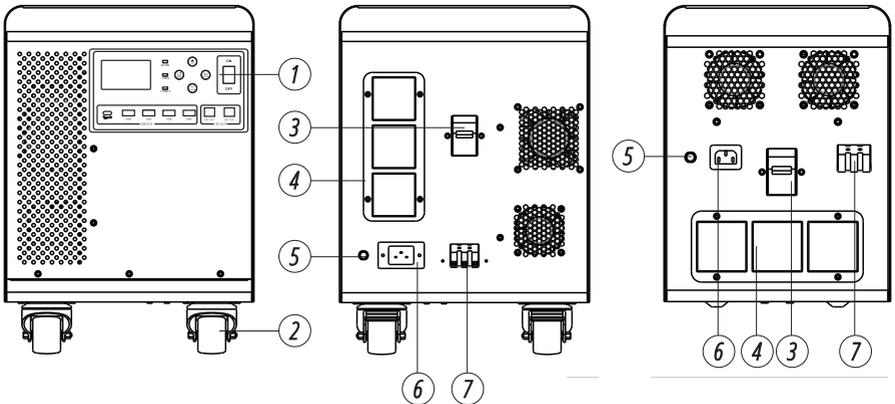
3

#### PUBLIC POWER GRID, GENERATOR AND SOLAR PANELS AS A POSSIBLE ENERGY SOURCE



### MAIN OVERVIEW

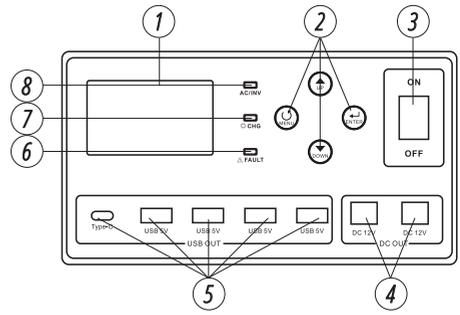
4



1. Control panel
2. Transport wheels
3. Battery switch
4. AC Outputs

5. AC Input over-current protection
6. AC Input
7. PV Input

1. LCD display
2. Function buttons
3. Inverter switch
4. DC 12V outputs
5. Outputs 1xUSB Type C 5V 1A, 4xUSB 5V 2A
6. Fault indicator
7. Batterie charge indicator
8. AC input/inverter operating indicator



**THE PACKAGE INCLUDES:**

Make sure nothing in the package damages the product.

- Power station
- User Manual
- Mains input cable



**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.

**TECHNICAL SPECIFICATION**

**5**

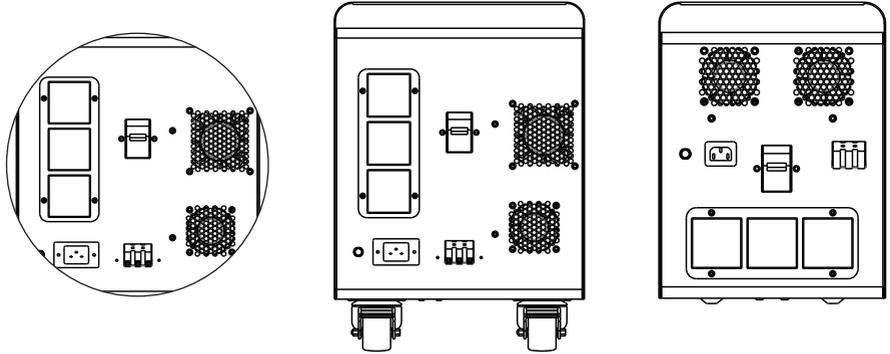
Model		KS 2000PS	KS 3000PS
<b>INVERTER</b>	Rated Power, W	2000	3000
	The shape of the output	Pure Sine Wave	
	AC Voltage Output, V	230 V	
	Nominal battery voltage, V	25.6 (DC)	
	Efficiency	90%	
<b>PV INPUT</b>	Maximum current (output site), A	60	
	Efficiency of the MPPT converter	98% max	
	Maximum idle voltage from solar panels, V	145 (DC)	145 (DC)
	MPPT voltage range from solar panels, V	30-120 (DC)	30-120 (DC)
<b>AC INPUT</b>	Rated input voltage, V	230 ± 5% (AC)	
	Input voltage range, V	90-280 (AC)	
	Frequency, Hz	50	
	Transfer time, ms	10 (UPS, VDE); 20 (APL)	
	Maximum battery charge current from AC input, A	20 (±4 A)	30 (±4 A)
<b>Built-in battery</b>	Battery type	LiFePO4	
	Capacity	70 Ah/1792 Wh	126 Ah/3225 Wh
	Rated voltage, V	25.6 (DC)	
<b>12V DC output</b>		+	
<b>5V DC USB output</b>		+	
<b>Dimensions (LxWxH), mm</b>		450x370x320	570x370x445
<b>Gross/Net weight, kg</b>		32/30	38/36

To increase battery charge cycles, the recommended battery usage range is from 10% to 80% battery charge. It is recommended not to exceed 80% of the declared power of the device.

Before turning on the device, please reserve a distance of more than 30 cm above the device and to the left and right to ensure for heat dissipation. To ensure the best operation, the ambient temperature should be between 0–50 °C.

**INPUT AND OUTPUT CONNECTION**

1. After power on, you can directly take power from the AC output.
2. DC outputs are active even without the station being fully turned on.
3. Connect the grid and the AC input terminal with the matching wires to load the mains and charge the battery.
4. Please make sure the cable is firmly connected and do not move the machine while it is running.



**ATTENTION - DANGER!**

**Only applicable to refractory surfaces.**

**CONNECTION OF SOLAR PANELS**

Please select the appropriate wire to connect the solar panels.

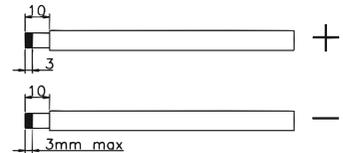
**PV MODULE SELECTION:**

When choosing solar panels, be sure to consider the following parameters:

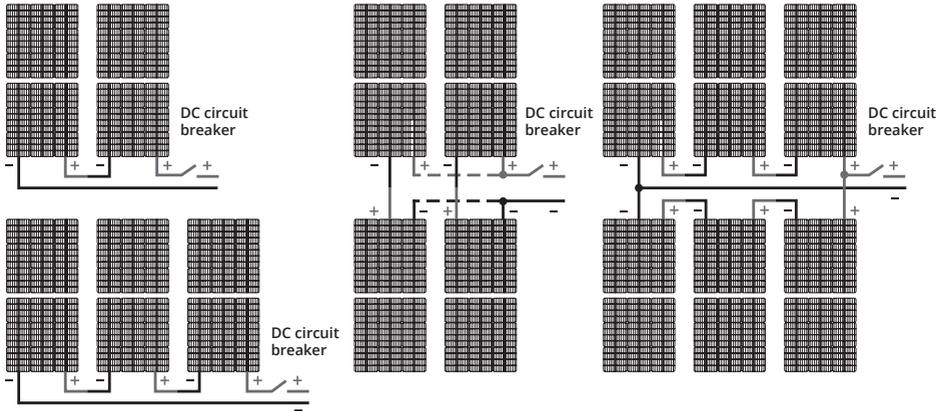
1. The open-circuit voltage (VOC) of the solar panels must not exceed the maximum open-circuit voltage of the PV input of the station.
2. The voltage of solar panels under load should be in the MPPT voltage range (30-120V) and the current at the PV input must not be more than 30A.
3. In order to be able to use the full power of the PV input, we recommend switching solar panels so that at least 60VDC is present at the PV input under load. We recommend connecting 2 panels in series and another 2 panels in parallel.

Follow the steps below to connect the solar panels:

1. Remove the 10 mm insulating sleeves from the positive and negative leads on the PV input.
2. Check the voltage and the correct polarity of the connecting cable of the photovoltaic modules and the input connectors of the photovoltaic network. Then, connect the positive (+) side of the cable to the positive (+) side of the PV input connector. Connect the negative (-) of the cable to the negative (-) of the PV input con.

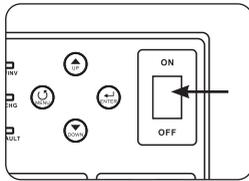


POSSIBLE EXAMPLES OF CONNECTIONS



OPERATION

7

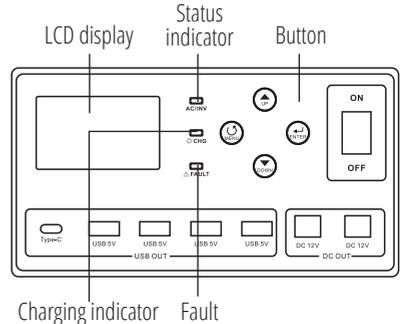


ON/OFF

The unit could be turned on by simply pressing the ON/OFF button (the button on the chassis).

OPERATING AND DISPLAY PANEL

The operation and display panel shown in the following figure is located on the front panel of the inverter. It includes three indicator lights, four function keys and an LCD. The display screen indicates the running status and input and output information.



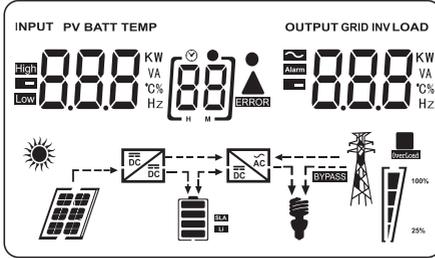
LED INDICATOR

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

FUNCTION KEYS

Function Keys	Description
<b>MENU</b>	Enter reset mode, go to previous selection.
<b>UP</b>	Increase the setting data.
<b>DOWN</b>	Decrease the setting data.
<b>ENTER</b>	Enter setting mode and confirm the selection in setting mode, go to next selection or exit the reset mode.

# LCD DISPLAY ICONS



Icon	Function description							
<b>Input Source Information and Output Information</b>								
	Indicates the AC information.							
	Indicates the DC information.							
	Displays AC input frequency, voltage and current, solar panel voltage and power, MPPT output voltage and current, battery voltage and current. Displays output voltage, frequency, load in VA, load in W and battery discharge current.							
<b>Configuration Program and Fault Information</b>								
	Indicates the number of setting parameters.							
	Indicates the warning and fault codes. <b>Warning:</b> flashing  with warning code. <b>Fault:</b> lighting  with fault code.							
<b>Load Information</b>								
<b>OVERLOAD</b>	Indicates overload.							
	Indicates the load level by 0-24%, 25-49%, 50-74% and 75-100%.							
	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>0% ~ 24%</td> <td>25% ~ 49%</td> <td>50% ~ 74%</td> <td>75% ~ 100%</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	0% ~ 24%	25% ~ 49%	50% ~ 74%	75% ~ 100%			
0% ~ 24%	25% ~ 49%	50% ~ 74%	75% ~ 100%					
<b>Mode Operation Information</b>								
	Indicates unit connected to the mains.							
	Indicates the connection of the device to the solar panels.							
<b>BYPASS</b>	Indicates load is supplied by utility power.							
	Indicates the solar charger is working.							
	Indicates the DC/AC inverter circuit is working.							
<b>Mute Operation</b>								
	Indicates unit alarm is disabled.							

### PARAMETER SETTING

After pressing and holding “ENTER” button for 2 seconds, the unit will enter setting mode. Press “UP” or “DOWN” button to select setting parameter. And then, press “ENTER” or “MENU” button to confirm the selection. To exit the setting mode, you must scroll through all parameters to the end.

### SETTING PROGRAMS:

Parameter	Description	Selectable option	
01	Output source priority selection	[0] SBU	Solar energy provides power to the loads as first priority. If battery voltage has been higher than the setting parameter 21 for 5 minutes, the power station will turn to battery mode, solar and battery will provide power to the load at the same time. When the battery voltage drops to the setting parameter 20, the power station will turn to bypass mode, utility provides power to the load only, and the solar will charge the battery at the same time.
		[0] SOL	Solar energy provides power to the loads as first priority. If battery voltage has been higher than the setting parameter 21 for 5 minutes, and the solar energy has been available for 5 minutes too, the power station will turn to battery mode, solar and battery will provide power to the load at the same time. When the battery voltage drops to the setting parameter 20, the power station will turn to bypass mode, utility provides power to the load only, and the solar will charge the battery at the same time.
		(default) [0] UTI	Utility will provide power to the loads as first priority. Solar and battery energy will provide power to the loads only when utility power is not available.
02	AC input voltage range	Appliances (default) [02] APL	If selected, acceptable AC input voltage range will be within 90-280V AC.
		UPS [02] UPS	If selected, acceptable AC input voltage range will be within 170-280V AC.
		VDE [02] VDE	If selected, acceptable AC input voltage range will conform to VDE 4105 (184V AC-253V AC).
		GEN [02] GEN	When the user uses the device to connect the generator, select the generator mode. Battery will not be charged from AC input.
03	Output voltage	[03] 230	Set the output voltage amplitude, (220VAC-240VAC)

Parameter	Description	Selectable option	
04	Output frequency	50 Hz (default) [04] 500	60 Hz [04] 600
05	Solar supply priority	[05] bLU	Solar energy provides power to charge battery as first priority.
		(default) [05] LbU	Solar energy provides power to the loads as first priority.
06	Overload bypass: When enabled, the unit will transfer to line mode if overload occurs in battery mode.	Bypass disable [06] bYd	Bypass enable (default) [06] bYE
07	Auto restart when overload occurs	Restart disable (default) [07] Lrd	Restart enable [07] LrE
08	Auto restart when over temperature occurs	Restart disable (default) [08] Lrd	Restart enable [08] LrE
10	Charger source priority: To configure charger source priority	If this power station is working in Line, Standby or Fault mode, charger source can be programmed as below:	
		Solar first [10] C50	Solar energy will charge battery as first priority. Utility will charge battery only when solar energy is not available.
		Solar and Utility (default) [10] 50U	If this power station is working in Battery mode or Power saving mode, only solar energy can charge the battery. Solar energy will charge a battery if it's available and sufficient.
		Only Solar [10] 050	Solar energy will be the only source of energy regardless of the availability of power from the grid.
When the power station is in battery mode or in power saving mode, the battery is only charged by solar energy. Solar energy will charge battery if it's available and sufficient.			
11	Maximum charging current: To configure total charging current for solar and utility chargers. (Max. charging current = utility charging current + solar charging current)	[11] 60 <sup>A</sup>	Setting range is from 1A to 70A for KS 2000PS.
		[11] 80 <sup>A</sup>	Setting range is from 1A to 80A for KS 3000PS.

Parameter	Description	Selectable option	
13	Maximum battery charging current from utility	20A (maximum current for KS 2000PS) [13] 20	30A (maximum current for KS 3000PS) [13] 30 <sup>A</sup>
17	Bulk charging voltage from PV input or AC input (only for parameter 01 Uti)	28.8V (default) [17] CV 28.8 <sup>v</sup>	Setting range is from 24.0V to 29.2V. Increment of each click is 0.1V
18	Floating charging voltage	27.0V (default) [18] FLV 27.0 <sup>v</sup>	Setting range is from 24.0V to 29.2V. Increment of each click is 0.1V.
19	Low DC cut off battery voltage setting (applies only to parameter 14 USE or Li)	22.4V (default) [19] COV 22.4 <sup>v</sup>	Setting range is from 20V to 24V. Increment of each click is 0.1 V.
20	Battery stop discharging voltage when grid on AC input is available	23V (default) [20] 23.0 <sup>v</sup>	Setting range is from 22.0V to 29.0V. Increment of each click is 0.1 V.
21	Battery stop charging voltage from AC input (parameter 01 SbU or SOL)	27V (default) [21] 27.0 <sup>v</sup>	Setting range is from 22.0V to 29.0V. Increment of each click is 0.1 V.
22	Auto turn page	(default) [22] PLE	If selected, the display screen will auto turn the display page.
22	Auto turn page	[22] Pld	If selected, the display screen will stay at latest screen user finally switches.
23	Backlight control	Backlight on [23] LON	Backlight off (default) [23] LOF
24	Alarm control	Alarm on (default) [24] bON	Alarm off [24] bOF
25	Beeps while primary source is interrupted	Alarm on [25] AON	Alarm off (default) [25] AOF
27	Record Fault code	Record enable (default) [27] FON	Record disable [27] FOF

Parameter	Description	Selectable option	
28	Solar power balance: When enabled, solar input power will be automatically adjusted according to connected load power.	Solar power balance enable <b>[28] 5bE</b>	If this option is enabled, the maximum input power of the solar cell will be automatically adjusted according to the following formula: Parameter 11 + connected load power when the device is in offline mode, but no more than 60A.
		Solar power balance disable (default) <b>[28] 5bd</b>	If selected, the solar maximum input power will be the same to Parameter 11 no matter how many loads are connected, but no more than 60A.
29	Power saving mode enable/disable	Saving mode disable (default) <b>[29] 5d5</b>	If disable, no matter connected load is low or high, the on/off status of inverter output will not be effected.
		Saving mode enable <b>[29] 5e7</b>	If enable, the output of inverter will be off when connected load is pretty low or not detected.
30	Battery equalization	Battery equalization <b>[30] Ee7</b>	Battery equalization disable (default) <b>[30] Ed5</b>
31	Battery equalization voltage	28.8V (default) <b>[17] C4 28.8<sup>v</sup></b>	Setting range is from 24.0V to 29.2V. Increment of each click is 0.1V
33	Battery equalization time	60 min (default) <b>[33] 60</b>	Setting range is from 5 min to 900 min. Increment of each click is 5 min.
34	Battery equalization timeout	120 min (default) <b>[34] 120</b>	Setting range is from 5 min to 900 min. Increment of each click is 5 min.
35	Equalization interval	30 days (default) <b>[35] 30d</b>	Setting range is from 0 to 900 days. Increment of each click is 1 day.
36	Equalization activated immediately	Enable <b>[36] Ae7</b>	<b>[36] Ad5</b>

Parameter	Description	Selectable option
36	Equalization activated immediately	If equalization function is enabled in program 30, this program can be set up. If "Enable" is selected in this program, it's to activate battery equalization immediately and LCD main page will shows "EQ". If "Disable" is selected, it will cancel equalization function until next activated equalization time arrives based on program 35 setting. At this time "EQ" will be shown in LCD main page too.

### CONTROL OF EXTERNAL DEVICES USING POTENTIAL-FREE CONTACTS ON THE POWER STATION

On the back of the power station there is a group of "dry" contacts capable of switching up to 3A alternating current with a voltage of up to 250V.

These contacts can be used to control external devices with the corresponding control function of external "dry" contacts.

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	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	Close	Open
		Battery voltage reaches the value < parameter 20 during the discharging process	Open	Close

After pressing and holding "MENU" button for 6 seconds, the unit will enter reset model. Press "Up" and "DOWN" button to select of parameter. And then, press "ENTER" button to exit.

SET	(default) [dt] n t t	Reset setting disabled.
	[dt] t 5 t	Reset setting enabled.

### FAULT REFERENCE CODE

8

Fault Code	Fault Event	Icon on
01	Fan is locked when inverter is off.	
02	Inverter transformer over temperature.	

Fault Code	Fault Event	Icon on
03	Battery voltage is too high.	
04	Battery voltage is too low.	
05	Output short-circuited.	
06	Inverter output voltage is high.	
07	Overload time out.	
08	Inverter bus voltage is too high.	
09	Bus soft start failed.	
11	Main relay failed.	
21	Inverter output voltage sensor error.	
22	Inverter grid voltage sensor error.	
23	Inverter output current sensor error.	
24	Inverter grid current sensor error.	
25	Inverter load current sensor error.	
26	Inverter overload (current) error.	
27	Inverter radiator over temperature.	
31	Solar charger battery voltage class error.	
32	Solar charger current sensor error.	
33	Solar charger current is uncontrollable.	
41	Inverter grid voltage is low.	
42	Inverter grid voltage is high.	

Fault Code	Fault Event	Icon on
43	Inverter grid under frequency.	[43] 
44	Inverter grid over frequency.	[44] 
51	Inverter overcurrent protection error.	[51] 
52	Inverter bus voltage is too low.	[52] 
53	Inverter soft start failed.	[53] 
55	Over DC voltage in AC output.	[55] 
56	Battery connection is open.	[56] 
57	Inverter control current sensor error.	[57] 
58	Inverter output voltage is too low.	[58] 
61	Fan is locked when inverter is on.	[61] 
62	Fan 2 is locked when inverter is on.	[62] 
63	Battery is over-charged.	[63] 
64	Low battery.	[64] 
67	Overload.	[67]  
70	Output power derating.	[70] 

#### WARNING INDICATOR

Fault Code	Fault Event	Icon on
72	Solar charger stops due to low battery.	[72] 
73	Solar charger stops due to high PV voltage.	[73] 
74	Solar charger stops due to over load.	[74] 

Fault Code	Fault Event	Icon on
75	The solar charging module has overheated.	[75]
76	PV charger communication error.	[76]
77	Parameter error.	[77]

**WARNING INDICATOR**

Fault Code	Fault Event	Icon on
72	Solar charger stops due to low battery.	[72]
73	Solar charger stops due to high PV voltage.	[73]
74	Solar charger stops due to over load.	[74]
75	The solar charging module has overheated.	[75]
76	PV charger communication error.	[76]
77	Parameter error.	[77]

**OPERATING STATE DESCRIPTION**

9

Operation state	Description	LCD display
<b>Utility-Tie state</b>	PV energy is charged into the battery and utility provide power to the AC load.	<p>The PV input is activated</p>
<b>Charge state</b>	PV energy and the grid charge the battery.	
<b>Bypass state</b>	Error are caused by inside circuit error or external reasons such as over temperature, output short-circuited and so on.	

Operation state	Description	LCD display
Off-Grid state	The inverter will provide output power from battery and PV power.	Inverter power loads from PV energy 
		Inverter power loads from battery and PV energy 
		Inverter power loads from battery only 
Stop mode	The inverter stop working if you turn off the inverter by the soft key or error has occurred in the condition of no grid. 	

## DISPLAY SETTING

# 10

The LCD display information will be switched in turns by pressing “UP” or “DOWN” key. The selectable information is switched as below order: battery voltage, battery current, inverter voltage, inverter current, grid voltage, grid current, load in Watt, load in VA, grid frequency, inverter frequency, PV voltage, PV charging power, PV charging output voltage, PV charging current.

Selectable information	LCD display	
Battery voltage/DC discharging current	<sup>BATT</sup> 260 V	480 A
Inverter output voltage/Inverter output current	229 V	<sup>INV</sup> 6.70 A
Grid voltage/Grid current	229 V	30 A
Load in Watt/VA	150 <sup>KW</sup>	168 <sup>LOAD</sup> VA
Grid frequency/Inverter frequency	<sup>INPUT</sup> 500 Hz	<sup>INV</sup> 500 Hz
Voltage and power from solar panels	<sup>PV</sup> 6.10 V	100 <sup>KW</sup>
PV charger output voltage and MPPT charging current	<sup>PV</sup> 250 V	<sup>OUTPUT</sup> 400 A



# EC Declaration of Conformity

Nr. 182

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 "Könner & Söhnen"  
Type / Model: KS 2000PS, KS 3000PS

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:**  
**General director:**

2023-10-01  
Duesseldorf  
Fomin P. *P. Fomin*

**DIMAX**  
International GmbH  
Flinger Broich 203 40235 Düsseldorf  
USt-ID DE296177274  
koenner-soehnen.com

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.

## CONTACTS

### Deutschland:

DIMAX International GmbH Flinger  
Broich 203 -FortunaPark- 40235  
Düsseldorf, Deutschland  
[www.koenner-soehnen.com](http://www.koenner-soehnen.com)

### Ihre Bestellungen

[orders@dimaxgroup.de](mailto:orders@dimaxgroup.de)

### Kundendienst, technische Fragen und Unterstützung

[support@dimaxgroup.de](mailto:support@dimaxgroup.de)

### Garantie, Reparatur und Service

[service@dimaxgroup.de](mailto:service@dimaxgroup.de)

### Sonstiges

[info@dimaxgroup.de](mailto:info@dimaxgroup.de)

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### Polska:

DIMAX International Poland Sp.z o.o.  
Polska, Warszawska,  
306B 05-082 Stare Babice,  
[info.pl@dimaxgroup.de](mailto:info.pl@dimaxgroup.de)  
[www.konner-sohnen.com](http://www.konner-sohnen.com)

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### Україна:

ТОВ «Техно Трейд КС»,  
вул. Електротехнічна 47,  
02222, м. Київ, Україна  
[sales@ks-power.com.ua](mailto:sales@ks-power.com.ua)  
[www.konner-sohnen.com](http://www.konner-sohnen.com)