PURE SINE WAVE WITH CHARGER

USER'S MANUAL

SOLAR INVERTER

The software supports installation on Windows systems.
Scan the QR code for download or visit the website for downloading: https://sw.mustpower.com

Scan QR code for manual

Appliances

PC TV Light Electric fan

4200-000008-03A1

General Precautions

1. Before using it, read all instructions and cautionary markings on :
(1) inverter (2) the batteries (3) this manual
2. CAUTION --To reduce risk of injury,the inverter only support two kinds of batteries:
lead-acid battery or 4 series lithium iron phosphate battery pack @ 12V
8 series lithium iron phosphate battery pack @ 24V,when used,
user must set the battery type follow your battery.
3. Do not expose it to rain, snow or liquids of any type. It is designed for indoor.
4. Do not disassemble it. Take it to a qualified service center when service or repair is required.
5. To prevent the risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning. Turning off the unit will not reduce this risk.
6. WARNING: Provide ventilation to outdoors from the battery compartment. The battery enclosure should be designed to prevent accumulation and concentration of hydrogen gas at the top of the compartment.
7. NEVER charge a frozen battery or connect the inverter with 12V to 24V battery.
8. Input/output AC wiring must be no less than 18 AWG gauge copper wire and rated for 75℃ or higher. Battery cables must be rated for 75℃ or higher and should be no less than 6AWG gauge.
9. Be extra cautious when working with metal tools around batteries. Short-circuiting the batteries could cause an explosion.
10. Read the battery manufacturer's installation and maintenance instructions prior to operating.

Personnel Precautions

1. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
2. Avoid touching eyes while working near batteries.
3. Never smoke or allow a spark or flame in vicinity of a battery.
4. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with batteries. Batteries can produce a short-circuit current high enough to make metal melt, and could cause severe burns.
5. If a remote or automatic generator start system is used, disable the automatic starting circuit or disconnect the generator to prevent accident during servicing.

FOLLOW STANDARD
EN 60950-1:2006+A2:2013+A11:2009+A1:2010+A12:2011
EN 55022:2010, EN 55024:2010, EN 61000-3-3:2008

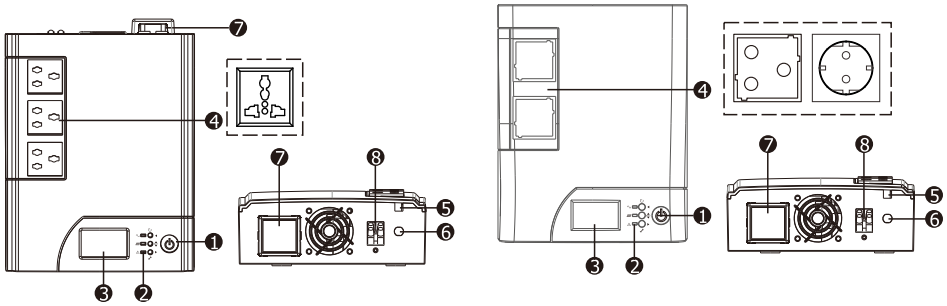
Introduction

It is a cost effective, intelligent solar inverter which accept Solar&Utility input at the same time. The comprehensive LCD display offers user-configurable and easy-accessible button adjustment such as battery charging current, AC/solar charger priority and output source priority, When battery voltage low, it will automatically switch to AC grid to supply continuously power to the loads.

Features:

- Pure sine wave inverter
- Built-in 45 amp MPPT solar charge controller
- 20A@12V\15A@24V standard charging current from utility
- MFD (multi-function display)
- AC/solar priority for output via MFD
- AC/solar priority for charging via MFD
- Smart user friendly interface
- Smart charging for different type batteries
- Overload & short-circuit protection
- Battery reverse polarity protection
- Deep discharge protection
- Auto restart while AC is recovering or solar charger is work
- Adjustable solar and utility charging current
- Auto actived Lithium battery pack which is protected restores output when solar or utility is ok

Product Overview



1. Power switch
2. Status indicators(please see the Operation section for the details)
3. LCD display
4. Output receptacles
5. AC input
6. Input circuit breaker(plastic case)
   Input fuse(metal case)
7. External battery connectors
8. Solar panel terminal

KEY / Operation	◀	BATT	▶
Normal Page Short Press	Page Up	First Page	Page Down
Normal Page Long Press	----------	Fast Set BatteryType	Enter Setting Page
Setting Page Short Press	Page Up	Adjust	Page Down
Setting Page Long Press	Exit No Save Setting	Recover Default Set	Exit Save Setting

Installation

NOTE: Before installation, please inspect the unit. Be sure that nothing inside the package is damaged.

Mounting the unit

The unit only can be mounted vertically to a wall surface.

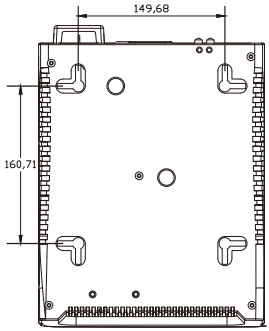
Please follow below steps:

1.Turn off the unit before mounting.

2.Select an appropriate mounting location. Use a horizontal and the length at one must be 80mm and mark the two ends on the wall.(see right chart)

3.Drill two marks by screws.

4.Mount the unit by positioning the key-hole slots over the mounting screws.



Connect to utility and charge

Plug the AC input cord to the wall outlet. The unit will automatically charge the connected external battery even though the unit is off.

Connect external battery

Step1: Away the cover of external battery terminal.

Step2: Following battery polarity guide printed near the battery terminal.

RED cable to the positive terminal (+);

BLACK cable to the negative terminal (-).

WARNING! Please use the appropriate battery cable.

Step3: Tight the battery cables with the M5 nuts .Do not place anything between the flat part of battery terminal and the battery cable ring terminal or overheating may occur.(See Fig.1)

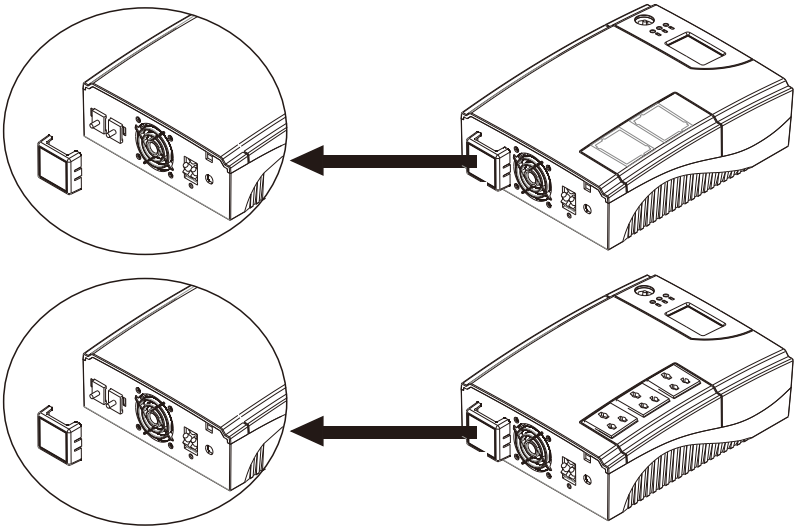


Fig.1

Step4: Install a DC Breaker in a positive line. The rating of the DC Breaker must be according to the inverter's battery current (75Amp). Keep the DC Breaker off.(See Fig.2)

Step5: Connect battery cable to the external batteries.

Note: For the user operation safety, we strongly recommend that you should use tapes to isolate the battery terminals before you start to operate the unit.

1) Single battery connedion (Refer to Fig.2) : When using a single battery, its voltage must be equal to the Nominal DC Voltage of the unit.(See below Table 1)

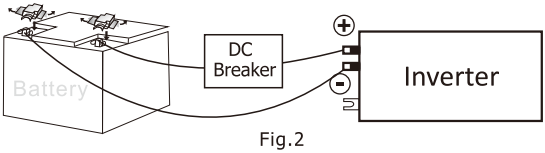


Fig.2

Table 1

Model	Nominal Battery DC Voltage
600W/1000W	12Vdc
1200W	24Vdc

2) Multiple batteries in series connection(Refer to Fig.3):The sum of their voltages must be equal to the Nominal DC Voltage of the unit.All batteries must be equal in voltage and amp hour capacity.

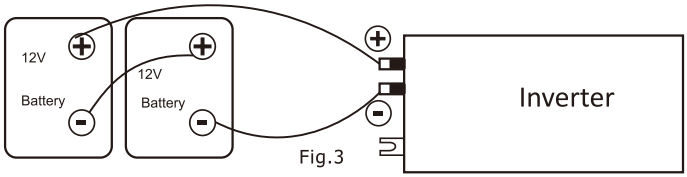


Fig.3

3) Multiple batteries in parallel connection(Refer to Fig.4): Each battery's voltage must be equal to the Nominal DC Voltage of the unit.

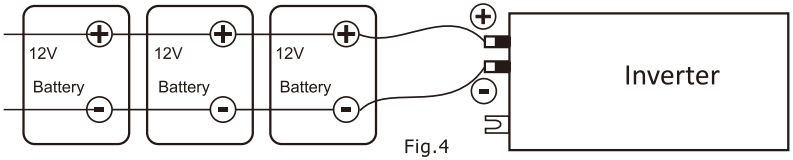


Fig.4

Step 6: Make sure to connect the polarity of battery side and unit correctly.
Positive pole(Red) of battery to the positive terminal(+) of the unit.
Negative pole(Black) of battery to the negative terminal(-) of the unit.

Step 7: Put the covers back to the external battery terminals.

Step 8: Take the DC Breaker on.

Connect to Solar Panel

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

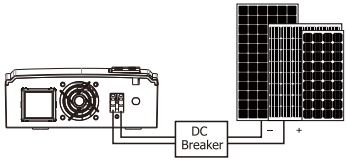
WARNING! All wiring must be performed by a qualified personnel.

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.

Typical Amperage	Gauge	Torque Value
30A	8AWG	14-16Nm

Step 1- Connect one cable to the positive(+)pole of solar panel and solar charger positive(+) terminal.

Step 2- Connect the other cable to the negative(-)pole of solar panel and solar charger negative(-) terminal.



Sloar Panel Connection

PV Module Selection

When selecting proper PV modules, please be sure to consider below requirements first:
1.Open Circuit Voltage (Voc) of PV modules does not exceed max. PV array open circuit voltage of inverter

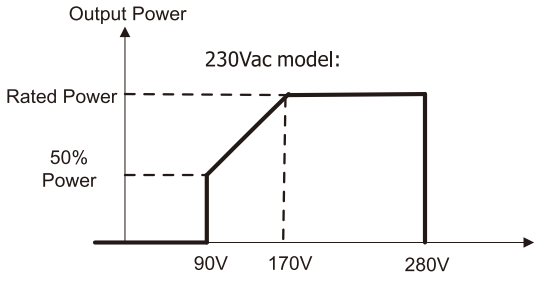
Charging Current (MPPT)	45Amp	
System DC Voltage	12VDC	24VDC
Operating Voltage Range	15~75VDC	30~75VDC
Max. PV Array Open Circuit Voltage	105VDC	

2. Max. Power Voltage (Vmp) of PV modules should be close to 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.

Model	Best Vmp	Vmp range
12VDC	36VDC	18~56VDC
24VDC	54VDC	36~75VDC

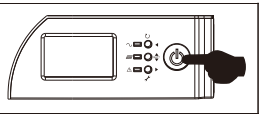
Note: Vmp: panel max power point voltage.
The PV charging efficiency is maximized while PV system voltage is close to best Vmp.

Line Mode Specifications

Input Voltage Waveform	Sinusoidal (utility or generator)
Nominal Input Voltage	230Vac
Low Loss Voltage	176Vac ± 7V(UPS,DEF) , 90Vac± 7V(APL), 186Vac± 7V(VDE)
Low Loss Return Voltage	186Vac ± 7V(UPS,DEF) , 100Vac± 7V(APL), 196Vac± 7V(VDE)
High Loss Voltage	280Vac ± 7V(UPS,DEF,APL), 253Vac± 7V(VDE)
High Loss Return Voltage	270Vac ± 7V(UPS,DEF,APL), 250Vac± 7V(VDE)
Max AC Input Voltage	300Vac
Nominal Input Frequency	50Hz / 60Hz (Auto detection)
Low Loss Frequency	40Hz ± 1Hz(DEF,APL,UPS),47.5Hz ± 0.1Hz(VDE)
Low Loss Return Frequency	42Hz ± 1Hz(DEF,APL,UPS),47.5Hz ± 0.1Hz(VDE)
High Loss Frequency	65Hz ± 1Hz(DEF,APL,UPS),51.5Hz ± 0.1Hz(VDE)
High Loss Return Frequency	63Hz ± 1Hz(DEF,APL,UPS),50.1Hz ± 0.1Hz(VDE)
Output power and charging current derating: When AC input voltage drops to 170V depending on models, the output power will be derated, the Grid AC charging current will be derated.	

Operation

Power On/Off

After the inverter has been properly installed, long press the power switch to turn on/off the uint. when inverter is on, and battery is low but not charging, the inverter will auto power off, when Grid or PV is charging, inverter will auto power on.	

LED Indicators & Audible Alarms

There are three indicators (Green/Red) in the front panel of the unit

LED Indicators		Messages
Green (Line)	Constant on	Line input voltage normal
	Flashing	Line input voltage fault
Green (PV)	Constant on	PV input voltage normal
	Off	PV input voltage fault
Red (Fault)	Constant on	Fault mode
	Flashing	battery low or overload warning
Buzzer Audible Alarms		Messages
Inverter mode (low-battery voltage)		Buzzing every 1 seconds
110% overload warning		Buzzing every 0.5 seconds
Over charge		Buzzing continuously
Fault mode		Buzzing continuously

LCD Display

Display	Function	
Input Source Information		
PV	Indicates the PV input.	
INPUT PV BATT TEMP 8.8.8 KW VA %C% Hz	Indicate input voltage, input frequency, PV voltage, battery voltage and charger current, version model.	
Configuration Program and Fault Information		
88	Indicates the setting programs.	
88 ERROR	Indicates the warning and fault codes. Warning and Fault: flashing with ERROR.	
Output Information		
OUTPUT GRID INV LOAD 8.8.8 KW VA %C% Hz	Indicate output voltage,output frequency,PV power,load percent,load in Watt version number.	
Battery Information		
	Indicates battery level by 0-25%,26%-50%,51-75% and 76-100% in battery mode and charging status in line mode or standby mode.	
In AC mode or standby mode, it will present battery charging status. [PB(SLA) battery]		
Status	Battery Voltage	LCD Display
Constant Current mode / Constant Voltage mode	< 11Vdc/pcs	4 bars will flash in turns.
	11Vdc ~ 11.5Vdc/pcs	Bottom bar will be on and the other three bars will flash in turns.
	11. 5Vdc ~ 12.5Vdc/pcs	Bottom two bars will be on and the other two bars will flash in turns.
	> 12.5Vdc/pcs	Bottom three bars will be on and the top bar will flash.
Floating mode	Batteries are fully charged	4 bars will be on.
LI battery define voltage is:12Vdc~12.4Vdc~12.8Vdc		

In battery mode ,it will present battery capacity. [PB(SLA) battery]	
Battery Voltage	LCD Display
< 11Vdc/pcs	
11Vdc ~ 11.5Vdc/pcs	
11. 5Vdc ~ 12.5Vdc/pcs	
> 12.5Vdc/pcs	

Load Information				
	Indicates the load level by 0-25%,26%-50%,51-75% and 76-100%.			
	0-25%	26%-50%	51-75%	76-100%

Mode Operation Information	
	Indicates unit connects to the mains.
	Indicates unit connects to the PV panel.
BYPASS	Indicates load is supplied by utility power.
	Indicates the utility charger circuit is working.
	Indicates the DC/AC inverter circuit is working.

Mute Operation	
	Indicates unit alarm or button beep is disabled.

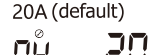
LCD Setting

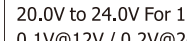
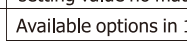
After pressing and holding "▶" button for 2 seconds, the unit will enter setting mode. Press "◀ and ▶" button to select setting programs. Press middle button" ▲ BATT ▼ " to adjust.And then, press "▶" button for 2 seconds to confirm the selection or Press "◀" button for 2 seconds to exit.

Fast Setting:In main page,press" ▲ BATT ▼ " for 2 seconds can fast setting battery type between PB[SLA] or LI.

Setting Programs:

Program	Description	Selectable option	
01	Output source priority: To configure load power source priority	Solar first	Solar energy provides power to the loads as first priority. If solar energy is not sufficient to power all connected loads, battery energy will supply power to the loads at the same time. Utility provides power to the loads only when any one condition happens: - Solar energy is not available. - Battery voltage drops to low-level cut-off voltage or the setting point in program 07.

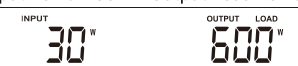
01	Output source priority: To configure load power source priority	Utility first (default) 	Utility will provide power to the loads as first priority. Solar and battery energy will provide power to the loads only when utility power is not available.
		SBU priority 	Solar energy provides power to the loads as first priority. If solar energy is not sufficient to power all connected loads, battery energy will supply power to the loads at the same time. Utility provides power to the loads only when battery voltage drops to either low-level cut-off voltage or the setting point in program 07.
02	AC input voltage range	Appliances 	If selected, acceptable AC input voltage range will be within 90-280VAC.
		UPS 	If selected, acceptable AC input voltage range will be within 170-280VAC.
		VDE 	If selected, acceptable AC input voltage range will conform to VDE4105(184VAC-253VAC)
		DEF (default) 	If selected, acceptable AC input voltage range will be within 170-280VAC.
03	Maximum charging current: To configure total charging current for solar and utility chargers (Max. charging current = utility charging current + solar charging current)	10A 	20A
		30A 	40A
		50A 	Max Current(default) Note:Max Current 65A @ 12V 60A @ 24V
04	Maximum utility charging current Note: If setting value in program 02 is smaller than that in program 03, the inverter will apply charging current from program 02 for utility charger.	10A 	20A (default)  Note:the inverter of 12VDC model can be set 10A or 20A 24VDC model can be set 15A or 7A
05	Battery Type Selection (Select the same type of battery now using)	PB Note:Display is SLA	LI (default) Note:the LI battery pack is 4 series lithium iron phosphate battery pack @ 12V 8 series lithium iron phosphate battery pack @ 24V

<table>
<tr><td rowspan="6">06</td><td rowspan="6">Charger source priority:
To configure charger source priority</td><td colspan="2">If this inverter/charger is working in Line, Standby or Battery mode, charger source can be programmed as below:</td></tr>
<tr><td>Utility first
 </td><td>Utility will charge battery as first priority.
Solar energy will charge battery only when utility power is not available.</td></tr>
<tr><td>Solar first
 </td><td>Solar energy will charge battery as first priority.
Utility will charge battery only when solar energy is not available.</td></tr>
<tr><td>Only solar
 </td><td>Solar energy will be the only charger source no matter utility is available or not.</td></tr>
<tr><td>Utility + Solar (default)
 </td><td>Max. charging current = utility charging current + solar charging current</td></tr>
<tr><td colspan="2">If this inverter/charger is working in Battery mode , only solar energy can charge battery. Solar energy will charge battery if it's available and sufficient.</td></tr>
<tr><td rowspan="3">07</td><td rowspan="3">Low DC cut-off voltage</td><td>10.5V (default)
 </td><td>10.0~12.0V
(default value PB[SLA] is 10.5V)
(default value LI is 11.5V)</td></tr>
<tr><td>21.0V (default)
 </td><td>20.0~24.0V
(default value PB[SLA] is 21.0V)
(default value LI is 23.0V)</td></tr>
<tr><td colspan="2">Setting range is from 10.0V to 12.0V for 600W model,
20.0V to 24.0V For 1200W model. Increment of each click is 0.1V@12V / 0.2V@24V Low DC cut-off voltage will be fixed to setting value no matter what percentage of load is connected.</td></tr>
<tr><td rowspan="4">08</td><td rowspan="4">Setting voltage point back to utility source when selecting “SBU priority” or “Solar first” in program 01</td><td colspan="2">Available options in 12VDC model:</td></tr>
<tr><td>11.5V (default)
 </td><td>11.0~12.5V
(default value PB[SLA] is 11.5V)
(default value LI is 12.0V)</td></tr>
<tr><td colspan="2">Available options in 24VDC model:</td></tr>
<tr><td>23.0V (default)
 </td><td>22.0~25.0V
(default value PB[SLA] is 23.0V)
(default value LI is 24.0V)</td></tr>
<tr><td rowspan="4">09</td><td rowspan="4">Setting voltage point back to battery mode when selecting “SBU priority” or “Solar first” in program 01</td><td colspan="2">Available options in 12VDC model:</td></tr>
<tr><td>13.5V(default)
  </td><td>12.0~14.0V (default value is 13.5V)</td></tr>
<tr><td colspan="2">Available options in 24VDC model:</td></tr>
<tr><td>27.0V(default)
  </td><td>24.0~28.0V (default value is 27.0V)</td></tr>
</table>

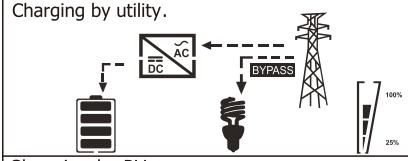
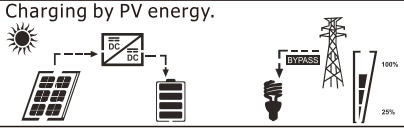
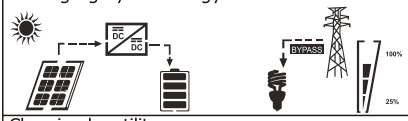
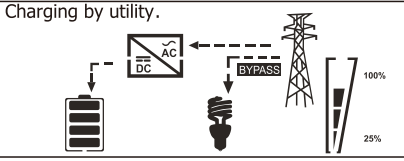
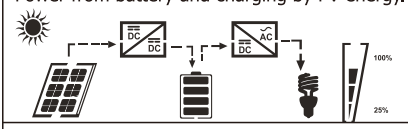
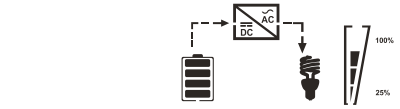
10	Backlight control	Backlight on	Backlight off (default)
11	Alarm control	Alarm on (default)	Alarm off
12	Auto overload restart	Not restart (default)	Note: Lr3:Auto restart 3 times Lr9:Auto restart 9 times LrA:Auto restart always The Setting Only for output overload restart,if output short circuit,do not restart

Display Setting

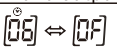
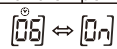
The LCD display information will be switched in turns by pressing "◀ or ▶" key.The selectable information is switched as below order: input voltage, output voltage,input frequency, output frequency, PV voltage,PV power,charging current,PV power,battery voltage,output voltage, load percentage, load in Watt,CPU version.

Selectable information	LCD display
Battery voltage/Output voltage (Default Display Screen)	Battery voltage=25.5V Output voltage=230V
Total charging current/Output load percent	Total Charging current=5.0A Load Percent=70%
PV Charging current/Output frequency	PV Charging current=5.0A Output Frequency=50.0Hz
Input PV voltage/Grid frequency	Input PV voltage=5.0V Grid Frequency=50.0Hz
Input PV power/Output load power	Input PV Power=30W Output Load Power=600W
Total input power/Output load power	Total Input Power=30W Output Load Power=600W 
Input grid voltage/Output load voltage	Input grid voltage=255V Output load voltage=230V

Operating Mode Description

Operation mode	Description	LCD display
Standby Mode **Note:** Standby mode: The inverter is not turned on yet but at this time, the inverter can charge battery with AC input and PV energy.	Utility input bypass to output , charger available.	Charging by utility.  Charging by PV energy. 
Line Mode	The unit will provide output power from the mains. It will also charge the battery at line mode.	Charging by PV energy.  Charging by utility. 
Battery Mode	The unit will provide output power from battery and or PV energy.	Power from battery and charging by PV energy.  Power from battery only. 

Auto Power On and Off

Auto Power On	when battery voltage is low and at the same time PV and Grid is down, the device will auto counting few seconds, sign ON state and then power off.	
Auto Power Off	when PV or Grid is recover to normal, the device will auto Power up, auto charging and counting few seconds, if ON state is set, then auto start to ON and output. if not, stay OFF after hand on power on.	
Counting Display	counting OFF  	counting ON 

Fault Reference Code

Fault Code	Fault Event	Error No.	LCD Error Message
00	Output short circuit	⚠ E00	Sr
01	Over load	⚠ E01	oP
02	Inverter temperature too high	⚠ E02	tI
03	Output voltage too high	⚠ E03	UH
04	Output voltage too low	⚠ E04	UL
05	Solar charging temperature too high	⚠ E05	tP
06	Battery voltage too high	⚠ E06	bH
07	Fan fault	⚠ E07	FE
08	Input Solar Voltage too high	⚠ E08	PH
09	Input battery is protected or unlink	⚠ E09	bn
11	Output Lock,Need to manual restart	⚠ E11	LS
15	Battery voltage low	⚠ E15	bL

Trouble Shooting

Use the table below to solve minor problems

Problem	LCD/LED/Buzzer	Explanation / Possible cause	What to do
When power fails, the battery work at inverter output mode is shorter.	Battery low alarm issue quickly.	Battery voltage is too Low.	Charge the unit at least 8 hours.
		Battery capacity is not full even after charge the unit for at least 8 hours.	Check the date code of the battery. If the batteries are too old, replace the batteries.
Mains exists 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 well.
	Green LED is flashing.	Insufficient quality of AC power. (Shore or Generator)	1. Check if AC wires are too thin and/or too long. 2. Check if generator (if applied) is working well or if input voltage range setting is correct. (UPS Appliance)
	Green LED is on.	Set "Solar first"or "SBU priority"as the priority of output source.	Change output source priority to Utility first.
Battery link but not working	No LED display	Battery is not connected well.	Check the external battery cable and terminal. Make sure all the battery connections to the unit are all correct.
		Battery defect.	Replace the batteries.
Buzzer beeps continuously and red LED is on.	Fault code 00	Output short circuited.	Check if wiring is connected well and remove abnormal load.
	Fault code 01	Overload error. The inverter is overload.	Reduce the connected load by switching off some equipment.
	Fault code 15	Battery voltage too low.	1. Re-charge battery. 2. Replace battery.
	Fault code 03	Output voltage too high.	Return to repair center.
	Fault code 04	Output voltage too low.	Return to repair center.
	Fault code 06	Battery voltage too high.	Check the battery specifications.

Specifications

MODEL			1012		1512		2024
Nominal Battery System Voltage			12VDC		12VDC		24VDC
INVERTER OUTPUT	Rated Power		600W		1000W		1200W
	Waveform		Pure Sine Wave				
	Nominal Output Voltage RMS		230VAC				
	Output Voltage Regulation		+10/-18%				
	Output Frequency		50Hz / 60Hz ± 1Hz				
	Inverter Efficiency (Peak)		>90%				
	Line Mode Efficiency		>95%				
	Typical Transfer Time		Typical 10ms(UPS,VDE) , Typical 20ms(APL,DEF)				
AC INPUT	Voltage		230VAC				
	Voltage Range		90 ~ 280VAC ± 3%				
	Frequency Range		40 ~ 65Hz ± 2Hz				
BATTERY	**Note: Below Parameters (PB) Lead-acid Battery / (LI) LiFePO4 Lithium Battery Pack - 12V(4 Series) 24V(8 Series)**						
	Nominal Input Voltage		12VDC			24VDC	
	Low Battery Cutoff	LOAD<20%	10.5VDC(PB)	11.5VDC(LI)	21.0VDC(PB)		23.0VDC(LI)
		20%≤LOAD<50%	10.2VDC(PB)	11.2VDC(LI)	20.4VDC(PB)		22.4VDC(LI)
		50%≤LOAD	9.7VDC(PB)	10.7VDC(LI)	19.4VDC(PB)		21.4VDC(LI)
	Low Battery Alarm	LOAD<20%	11.0VDC(PB)	12.0VDC(LI)	22.0VDC(PB)		24.0VDC(LI)
		20%≤LOAD<50%	10.7VDC(PB)	11.7VDC(LI)	21.4VDC(PB)		23.4VDC(LI)
		50%≤LOAD	10.2VDC(PB)	11.2VDC(LI)	20.4VDC(PB)		22.4VDC(LI)
	Low Battery Voltage Recover		12.5VDC(PB)	12.8VDC(LI)	25.0VDC(PB)		25.6VDC(LI)
	High Battery Voltage Recover		14.5VDC(PB)	14.5VDC(LI)	29.0VDC(PB)		29.0VDC(LI)
	High Battery Voltage Cutoff		15.0VDC(PB)	15.0VDC(LI)	30.0VDC(PB)		30.0VDC(LI)
	Charger Voltage boost		14.4VDC(PB)	14.4VDC(LI)	28.8VDC(PB)		28.8VDC(LI)
SOLAR CHARGER & AC CHARGER	Charger Voltage float		13.8VDC(PB)	14.4VDC(LI)	27.6VDC(PB)		28.8VDC(LI)
	Maximum PV Charge Current		45A (max)				
	Maximum PV Array Power		600W				1200W
	MPPT Operating Voltage Range		15 ~ 75VDC				30 ~ 75VDC
	Maximum PV Array Open Voltage		105VDC				
	Maximum Efficiency		> 95%				
	AC Charging Current Max		10A / 20A (Can be set)				7A / 15A (Can be set)
	Maximum Charge Current AC+PV		10 ~ 65A (Can be set)				10 ~ 60A (Can be set)
	Output Short Circuit Protection		FUSE				
BYPASS & PROTECTION	Bypass breaker Rating		7A		10A		10A
	Max Bypass Current		7A		10A		10A
	Battery Fuse Current		50A x 2		50A x 3		50A x 2
	Machine Dimensions (W*H*D)		235 x 290 x 92				
MECHANICAL SPECIFICATIONS	Package Dimensions (W*H*D)		595 x 375 x 315				
	Net Weight (kg)		2.8		3.0		3.0
	Gross Weight (kg)		3.5		3.7		3.7
	Operation Temperature Range		0℃ to 40℃				
OTHER	Audible Noise		50dB MAX				
	Display		LED+LCD				

GUARANTEECERTIFICATE

Serial No.: _____

Customer`s Name				Contact Person	
Address				Telephone No.	
Product/Model:		Post Code		Fax No.	
Date of purchase			Expire Date		
Dealer Signature			Customer Signature		

GUARANTEECERTIFICATE

Serial No.: _____

Customer`s Name				Contact Person	
Address				Telephone No.	
Product/Model:		Post Code		Fax No.	
Date of purchase			Expire Date		
Dealer Signature			Customer Signature		