Solar inverter

358-010009-02

felicitysolar®

Make life full of hope

USER GUIDE

Solar inverter

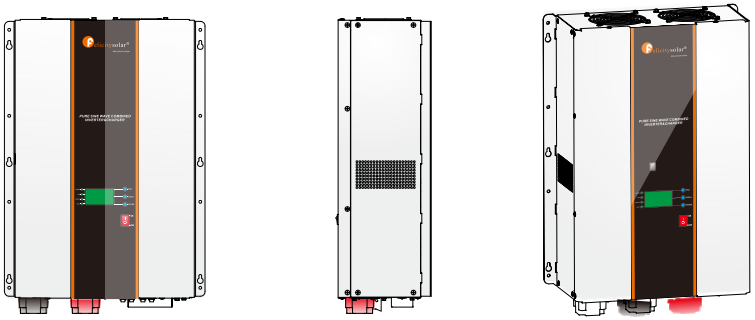
(IVPS/ IVPM Series)

Contents

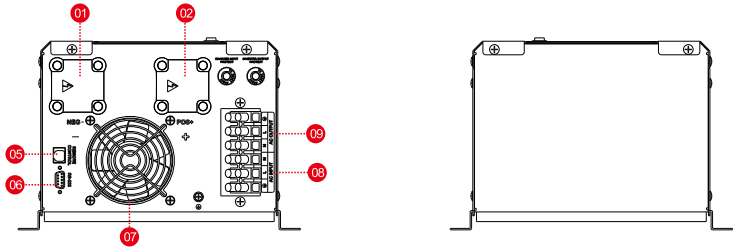
Advantage

- Bypass charging function: when the unit off, it can be activated with bypass output and can charge the battery.
- High charging current, the max charging current can be 200A for IVPM10048 and 180A for IVPM7548, 170A for IVPM5048 / IVPM5024, 120A for IVPM3524,IVPM2512 .
- Wide range of AC input voltage: the range of AC input voltage is 90-280V. It can be better compatible with generator working. It is rare to have wide range input voltage for the power frequency inverter.
- Electricity and battery priority is optional: customer can choose Electricity or battery priority according to their needs.
- Battery self-defined: customer can set the overcharge voltage and float voltage, and over-discharge voltage.
- 50/60HZ compatible
- Intelligent: Intelligent adjustment of over-discharge voltage, intelligent fine-tuning of over-discharge voltage according to the power of the load; intelligent cooling fan, intelligent adjustment of speed according to power and charging current and core temperature inside the machine
- Safety: Safety design is upgraded overall. Comprehensive protection, such as over-charge protection/over-discharge protection/overload protection/output short-circuit protection/ over-temperature protection, etc. Among them, transformer over-temperature protection is a leading design in the industry
- Later it can communicate with our MPPT. And the electricity charging and solar charging can be managed comprehensively and scientifically.

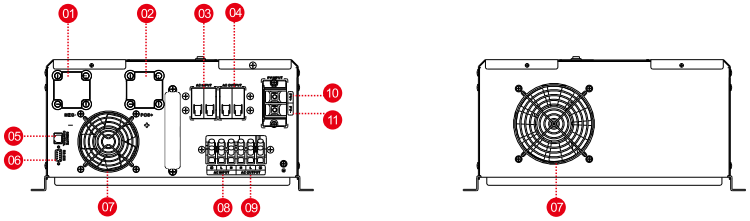
Product Overview



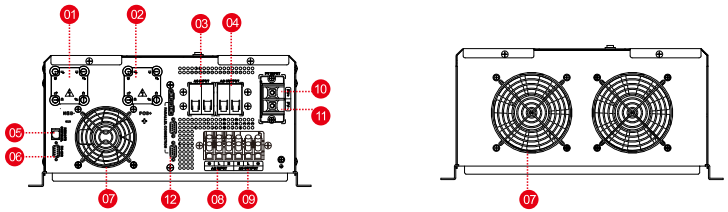
IVPS2512 / IVPS2524 / IVPS3524 / IVPS3548 TYPE



IVPS5024 / IVPS5048 / IVPS7548 / IVPM5048 / IVPM7548 TYPE

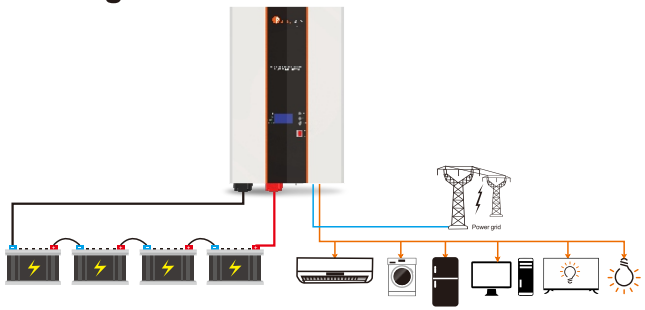


IVPS10048 / IVPM10048 TYPE



1. Battery negative terminal
2. Battery positive terminal
3. AC Input breaker
4. AC Output breaker
5. Remote control
6. RS-232
7. Fan
8. AC Input terminal
9. AC Output terminal
10. PV positive terminal
11. PV negative terminal
12. Parallel connection terminal

Connection diagram



Specifications (IVPS Series)

Line Mode Specifications							
Model	IVPS2512	IVPS2524	IVPS3524	IVPS5024	IVPS5048	IVPS7548	IVPS10048
Rated Output Power(VA)	2500VA	2500VA	3500VA	5000VA	5000VA	7500VA	10000VA
Rated Output Power(W)	2000W	2000W	2800W	4000W	4000W	6000W	8000W
Nominal DC Input Voltage	12V	24V			48V		
Input Voltage Waveform	Sinusoidal(Utility or generator)						
Nominal Input Voltage	220Vac						
Low Line Disconnect	170±7Vac(UPS) 90±7Vac(APL)						
Low Line Re-connect AC Input Range	180±7Vac(UPS) 100±7Vac(APL)						
High Line Disconnect	280±7Vac						
High Line Re-connect	270±7Vac						
Max AC Input Voltage	280Vrms						
Nominal Input Frequency	50Hz/60Hz						
Low Line Frequency Disconnect	40±1Hz						
Low Line Frequency Re-connect	42±1Hz						
High Line Frequency Disconnect	65±1Hz						
High Line Frequency Re-connect	63±1Hz						
Output Voltage Waveform	As same as input waveform						
Over-Load Protection(SMPS load)	AC 30A			Air switch protection			
Output Short Circuit Protection	AC 30A			Air switch protection			
Efficiency(Line mode)	⩾95% (Rated R load, and battery is fully charged)						
Transfer Time (AC to DC)	15ms (typical)						
Transfer Time (DC to AC)	15ms (typical)						
Pass Through Without Battery	No						
Max Bypass Overload Current	AC 30A			AC 63A			
Utility Charge Mode Specifications							
Nominal Input Voltage	220Vac						
Input Voltage Range	90~280Vac						
Nominal Output Voltage	Dependent on battery type						
Max Charge Current	40A			50A		60A	80A
Charge Current Regulation	0A~40A			0A~50A		0A~60A	0A~80A
Battery Initial Voltage	Circuit breaker						
Charger Short Circuit	AC 30A			AC 63A			
Breaker Size	Dependent on battery type or Self-defined						
Over Charge Protection	Yes						

Charge Algorithm							
Charging way	Three phases: Boost CC (constant current level) → boost CV (constant voltage level) →Float (constant pressure level)						
Charge Stage Transition Definitions	(1)Boost CC Stage: If A/C input is applied, the charger will run at full current in CC mode until the charger reaches the boost voltage. (2)Boost CV Stage: the charger will keep the boost voltage in Boost CV mode until the T1 timer has run out. Then drop the voltage down to the float voltage, when the charging current is lower than 20% setting value. (3)Float Stage: In float mode, the voltage will stay at the float voltage. If the A/C is reconnected or the battery voltage drops below 12Vdc/24Vdc/48Vdc, the charger will reset the cycle above. 						
Battery Type Setting	Battery Type	Boost CC, CV	Float				
		12V / 24V / 48V	12V / 24V / 48V				
	AGM	14.4V / 28.8V / 57.6V	13.6V / 27.2V / 54.4V				
	Flooded	14.6V / 29.2V / 58.4V	13.8V / 27.6V / 55.2V				
	Self Defined	Adjustable, up to 16V/31.5V/61.0V					
Inverter Mode Specifications							
Model	IVPS2512	IVPS2524	IVPS3524	IVPS5024	IVPS5048	IVPS7548	IVPS10048
Output Voltage Waveform	Pure sine wave						
Nominal Output Voltage	220Vac±5%						
Nominal Output Frequency(Hz)	50±0.3Hz/60Hz±0.3Hz (Adjustable)						
Output Voltage Regulation	±5%rms						
Peak Efficiency	90%						
Over-Load Protection (SMPS load)	5s@≥150% load; 10s@105%~150% load						
Surge rating	2* rated power for 5 seconds						
Capable of Starting Electric	Yes						
Output Short Circuit Protection	Yes						
Cold Start Voltage	11.5V/23V/46V						
Low Battery Alarm	Load < 50% , 11.5V/23V/46V / Load ≥ 50% , 11V/22V/44V						
Low Battery Recovery	Load < 50% , 11.75V/23.5V/47V / Load ≥ 50% , 11.5V/23V/46V						
Low DC Input Shut-down	Load < 50% , 10.75V/21.5V/43V / Load ≥ 50% , 10.5V/21V/42V						
High DC Input Alarm & Fault	15.75±0.4V/31.5V±0.4V/63V±0.4V						
High DC Input Recovery	15.5±0.4V/31.0V±0.4V/62V±0.4V						
General Specifications							
Operating temperature	0˚C~40˚C						
Storage temperature	-15˚C~60˚C						
Package Dimension	552x408x290mm		552x408x295mm		607x540x290mm		670x470x355mm

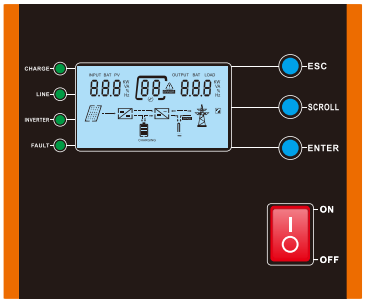
Specifications (IVPM Series)

Line Mode Specifications			
Model	IVPM5048	IVPM7548	IVPM10048
Rated Output Power(VA)	5000VA	7500VA	10000VA
Rated Output Power(W)	4000W	6000W	8000W
Nominal DC Input Voltage	48V		
Input Voltage Waveform	Sinusoidal(Utility or generator)		
Nominal Input Voltage	220Vac		
Low Line Disconnect	170±7Vac(UPS) 90±7Vac(APL)		
Low Line Re-connect AC Input Range	180±7Vac(UPS) 100±7Vac(APL)		
High Line Disconnect	280±7Vac		
High Line Re-connect	270±7Vac		
Max AC Input Voltage	280Vrms		
Nominal Input Frequency	50Hz/60Hz		
Low Line Frequency Disconnect	40±1Hz		
Low Line Frequency Re-connect	42±1Hz		
High Line Frequency Disconnect	65±1Hz		
High Line Frequency Re-connect	63±1Hz		
Output Voltage Waveform	As same as input waveform		
Over-Load Protection(SMPS load)	Air switch protection		
Output Short Circuit Protection	Air switch protection		
Efficiency(Line mode)	≥95% (Rated R load, and battery is fully charged)		
Transfer Time (AC to DC)	15ms (typical)		
Transfer Time (DC to AC)	15ms (typical)		
Pass Through Without Battery	No		
Max Bypass Overload Current	AC 63A		
Utility Charge Mode Specifications			
Nominal Input Voltage	220Vac		
Input Voltage Range	90~280Vac		
Nominal Output Voltage	Dependent on battery type		
Max Charge Current	50A	60A	80A
Charge Current Regulation	0A~50A	0A~60A	0A~80A
Battery Initial Voltage	Circuit breaker		
Charger Short Circuit	AC 63A		
Breaker Size	Dependent on battery type or Self-defined		
Over Charge Protection	Yes		
Solar Charging & Utility Charging(MPPT bulit-in controller is optional)			
Max PV Open Circuit Voltage	170Vdc	170Vdc	170Vdc
PV Array MPPT Voltage Range	65~145Vdc	65~145Vdc	65~145Vdc
Max Input Power	6600W	6600W	6600W
Max Solar Charging Current	120A	120A	120A
Max Charging current(Utility + Solar)	170A	180A	200A

Charge Algorithm			
Charging way	Three phases: Boost CC (constant current level) → boost CV (constant voltage level) →Float (constant pressure level)		
Charge Stage Transition Definitions	(1)Boost CC Stage: If A/C input is applied, the charger will run at full current in CC mode until the charger reaches the boost voltage. (2)Boost CV Stage: the charger will keep the boost voltage in Boost CV mode until the T1 timer has run out. Then drop the voltage down to the float voltage, when the charging current is lower than 20% setting value. (3)Float Stage: In float mode, the voltage will stay at the float voltage. If the A/C is reconnected or the battery voltage drops below 12Vdc/24Vdc/48Vdc, the charger will reset the cycle above. 		
Battery Type Setting	Battery Type	Boost CC, CV	Float
		12V / 24V / 48V	12V / 24V / 48V
	AGM	14.4V / 28.8V / 57.6V	13.6V / 27.2V / 54.4V
	Flooded	14.6V / 29.2V / 58.4V	13.8V / 27.6V / 55.2V
	Self Defined	Adjustable, up to 16V/31.5V/61.0V	

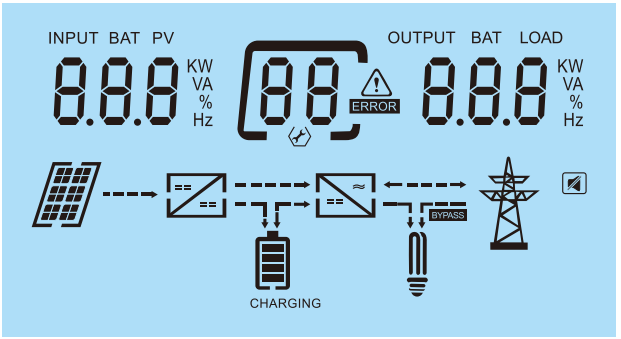
Inverter Mode Specifications			
Model	IVPM5048	IVPM7548	IVPM10048
Output Voltage Waveform	Pure sine wave		
Nominal Output Voltage	220Vac±5%		
Nominal Output Frequency(Hz)	50±0.3Hz/60Hz±0.3Hz (Adjustable)		
Output Voltage Regulation	±5%rms		
Peak Efficiency	90%		
Over-Load Protection (SMPS load)	5s@≥150% load; 10s@105%~150% load		
Surge rating	2* rated power for 5 seconds		
Capable of Starting Electric	Yes		
Output Short Circuit Protection	Yes		
Cold Start Voltage	11.5V/23V/46V		
Low Battery Alarm	Load < 50% , 11.5V/23V/46V / Load ≥ 50% , 11V/22V/44V		
Low Battery Recovery	Load < 50% , 11.75V/23.5V/47V / Load ≥ 50% , 11.5V/23V/46V		
Low DC Input Shut-down	Load < 50% , 10.75V/21.5V/43V / Load ≥ 50% , 10.5V/21V/42V		
High DC Input Alarm & Fault	15.75±0.4V/31.5V±0.4V/63V±0.4V		
High DC Input Recovery	15.5±0.4V/31.0V±0.4V/62V±0.4V		
General Specifications			
Operating temperature	0˚C~40˚C		
Storage temperature	-15˚C~60˚C		
Package Dimension	607x540x290mm		670x470x355mm

Front Panel



Function Key	Description
Esc	To exit setting mode
Scroll	To go to next selection
Enter	To confirm the selection in setting mode or enter setting mode
Indicator light instruction	
LCD backlight	Setting the control of LCD backlight enable, LCD backlight will always-on. Setting the control of LCD backlight disable,have no operation the LCD backlight will go out after 60s.
Fault LED light	If inverter in fault event, the red light will always-on. If inverter in warning event, the red light will flash. Inverter work normally,red light go out.
Battery LED light	Charging the battery, the battery light flash. If battery is full, battery light will always-on. The battery is not charged, the battery light will go out.
City electricity LED light	City electricity is normal, the LINE light will always-on. No city electricity, the LINE light will go out.
Inverter LED light	Battery discharging ,inverter light will always-on. Battery not discharging, inverter light will go out.
Buzzer beep	Turn on/off the inverter, the buzzer will last for 2.5s. Press any button, the buzzer will last for 0.1s. Hold on the ENTER button, the buzzer will last for 3s. If in fault event, the buzzer will keep going. If in warning event, the buzzer will beep discontinuous.

LCD Display Icons



Icon	Function description
Input Source Information	
INPUT	**Indicates the AC input.**
INPUT 8.8.8 KW VA % Hz	**Indicate input voltage, input frequency, battery voltage.**
Configuration Program and Fault Information	
88	**Indicates the setting programs.**
88 ERROR	**Indicates the warning and fault codes. Warning: flashing with warning code. Fault: lighting with fault code**
Output Information	
OUTPUT BAT LOAD 8.8.8 KW VA % Hz	**Indicate output voltage, output frequency, load percent, load in VA, load in Watt.**
Battery Information	
	Indicates battery level by 0-24%, 25-49%, 50-74% and 75-100%.

In battery mode, it will present battery capacity.

Load Percentage	Battery Voltage	LCD Display
Load >50%	< 11.1V/PCS	
	11.1~ 11.6V/PCS	
	11.6V ~ 12.1V/PCS	
	> 12.1V/PCS	
Load < 50%	< 11.3V/PCS	
	11.3 ~ 11.8V/PCS	
	11.8 ~ 12.3V/PCS	
	> 12.3V/PCS	
Mode Operation Information		
	Indicates the utility.	
BYPASS	Indicates load is supplied by utility directly.	
	Indicates the inverter / charger is working.	
Mute Operation		
	The alarm is disabled.	

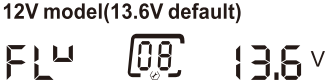
LCD Setting

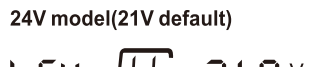
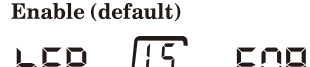
After pressing and holding ENTER button for 3 seconds, the unit will enter setting mode. Press “SCROLL” button to select setting programs. And then, press “ENTER” button to confirm the selection or ESC button to exit.

Setting items

Program	Description	Selectable option	
00	Exit setting		
02	Output frequency setting	50Hz(default) 	Output frequency configuration
		output frequency is 60Hz 	
03	Utility input range setting	Appliance mode(default) 	APL should be selected, when the utility is not well.
		UPS mode 	
05	Battery type setting	The battery type is self-define(default) 	If “Self-defined” is selected, battery charge voltage and low DC cut-off voltage can be set up in program 07, 08 and 11.
		The battery type is Flooded 	
		The battery type is AGM 	
		The battery type is LIb 	
06	Max utility charging current setting	20A (default) 	2500VA: Setting range is from 0 to 40A 3500VA: Setting range is from 0 to 40A 5000VA: Setting range is from 0 to 50A 7500VA: Setting range is from 0 to 60A 10000VA: Setting range is from 0 to 80A

Setting items

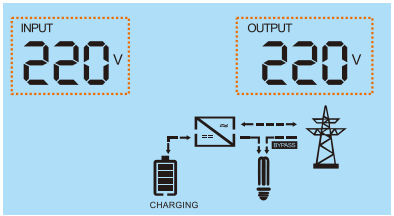
Program	Description	Selectable option	
07	Bulk charging voltage setting (C.V voltage)	**48V model(57.6V default)** 	If self-defined is selected in program 05, this program is enable. Setting range is from 48.0V to 61.0V. Increment of each click is 0.1V.
		24V model(28.8V default) 	If self-defined is selected in program 05, this program is enable. Setting range is from 25.0V to 31.5V . Increment of each click is 0.1V.
		12V model(14.4V default) 	If self-defined is selected in program 05, this program is enable. Setting range is from 12.0V to 15.3V. Increment of each click is 0.1V.
08	Floating charging voltage	**48V model(54.4V default)** 	If self-defined is selected in program 5, this program is enable. Setting range is from 48.0V to 61.0V. Increment of each click is 0.1V.
		24V model(27.2V default) 	If self-defined is selected in program 5, this program is enable. Setting range is from 25.0V to 31.5V. Increment of each click is 0.1V.
		12V model(13.6V default) 	If self-defined is selected in program 5, this program is enable. Setting range is from 12.0V to 15.3V. Increment of each click is 0.1V.
09	Charger priority.	If inverter is working in utility mode, charge priority can be set as below. However, when inverter is working in Battery mode, only PV can charge battery.	
		PV first 	PV will charge battery first. Utility will charge battery only when PV is unavailable.
		PV and Utility (default) 	PV and utility will charge battery together.
		PV Only 	Only PV can charge the battery.
10	Max charging current (Max charging current = utility charging current + PV charging current)	**60A (default)** 	2500VA: Setting range is from 0 to 120A 3500VA: Setting range is from 0 to 120A 5000VA: Setting range is from 0 to 170A 7500VA: Setting range is from 0 to 180A 10000VA: Setting range is from 0 to 200A

11	Low DC cut-off voltage	**48V model(42V default)** 	If self-defined is selected in program 5, this program is enable. Setting range is from 42.0V to 52.0V. Increment of each click is 0.1V.
		24V model(21V default) 	If self-defined is selected in program 5, this program is enable. Setting range is from 21.0V to 26.0V. Increment of each click is 0.1V.
		12V model(10.5V default) 	If self-defined is selected in program 5, this program is enable. Setting range is from 10.5V to 13.0V. Increment of each click is 0.1V.
12	Overload bypass function	**Disable (default)** 	If it is enabled, the inverter will switch to utility mode if overload happens in battery mode.
			
15	Buzzer Alarm	**Enable (default)** 	
			
17	Back light of LCD	**Enable (default)** 	Setting the control of LCD backlight enable, LCD backlight will always-on. Setting the control of LCD backlight disable,have no operation the LCD backlight will go out after 60s.
			
18	Output source priority	**Utility first (default)** 	Utility will provide power to the loads first, battery will provide power to the loads only when utility power is not available.
		PV first 	PV provides power to the loads first. If PV energy is not sufficient, battery will feed power to the loads. Utility provides power to the loads only when any one condition happens: (1) PV is unavailable; (2)Battery voltage drops to low-level warning voltage or the setting point in program 19.

18	Output source priority	**Battery first** OPS 18 bAt	battery provides power to the loads first, utility provides power to the loads only when battery voltage drops to either low-level warning voltage or the setting point in program 19. And when battery voltage return to the setting point in program 20, the inverter will switch to battery mode;
19	Setting battery voltage point back to utility when selecting "BAT priority" in program 18.	**48V model(default 46.0V)** bU 19 46.0V	Setting range is from 44.0V to 51.0V. Increment of each click is 1V.
		24V model(default 23.0V) bU 19 23.0V	Setting range is from 22.0V to 25.5V. Increment of each click is 0.5V.
		12V model (default 11.5V) bU 19 11.5V	Setting range is from 11.0V to 12.8V. Increment of each click is 0.2V/0.3V.
20	Setting battery voltage point back to battery mode when selecting "BAT priority"in program 18.	**48V model(default 54.0V)** bb 20 54.0V	Setting range is from 48.0V to 58.0V. Increment of each click is 1V. "FUL" means the battery should be charged to float mode;
		24V model(default 27.0V) bb 20 27.0V	Setting range is from 24.0V to 29.0V. Increment of each click is 0.5V. "FUL" means the battery should be charged to float mode;
		12V model(default 13.5V) bb 20 13.5V	Setting range is from 12.0V to 14.5V. Increment of each click is 0.2V/0.3V. "FUL" means the battery should be charged to float mode;
37	Power Key Mode	**Output off (default)** Ptn 37 00F	When power key is off and utility is charging to battery, Output is off.
		Output on Ptn 37 00n	When power key is off and utility is charging to battery, Output is on.

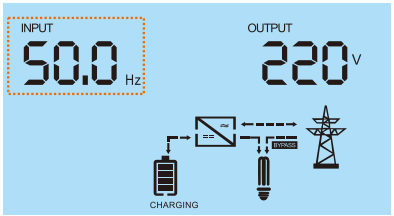
Display Information

The LCD information will be switched by pressing "Scroll" key. The selectable information is switched as below order: input voltage/frequency, battery voltage, charging current, output voltage/frequency, load percent, load in Watt, load in VA, load in Watt, main CPU Version.



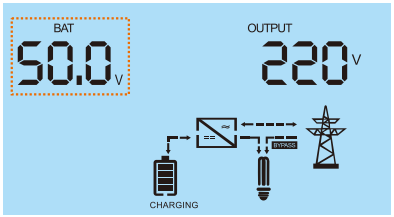
Input voltage/Output voltage

Utility voltage is 220V, output voltage is 220V



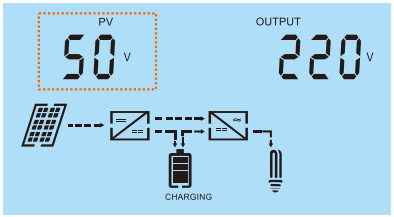
Input frequency

Utility frequency is 50.0Hz



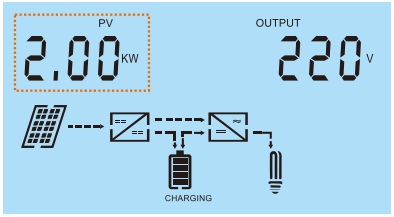
Battery voltage

Battery voltage is 50.0V



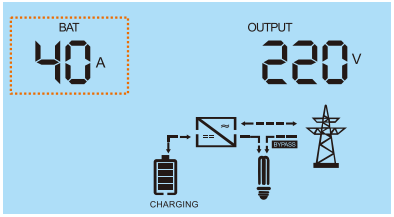
PV voltage

PV voltage is 50V
(for PWM / MPPT Charge Controller)



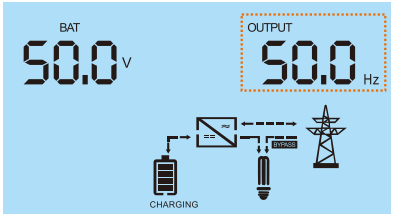
PV power

PV power is 2KW
(for PWM / MPPT Charge Controller)



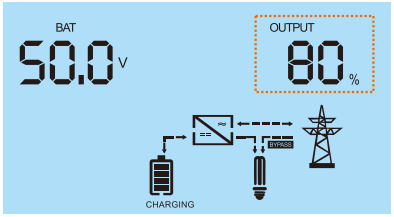
Charging current

Charging current is 40A



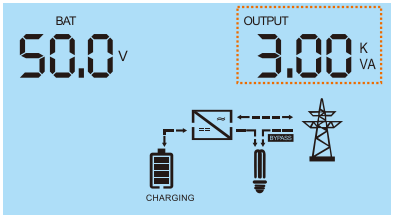
Output frequency

Output frequency is 50Hz



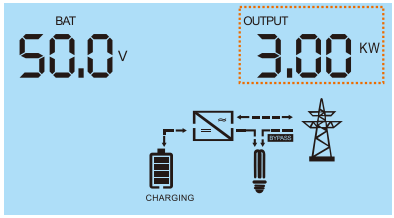
Load percentage

Load percent is 80%



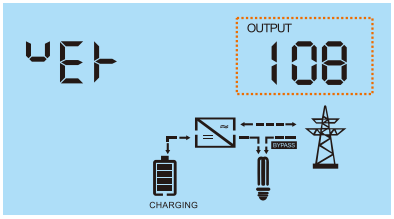
Load in VA

The load is 3.0KVA



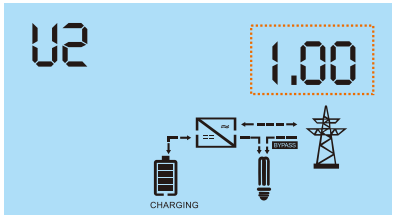
Load in Watt

The load is 3.0KW.



CPU software version

CPU software version 108

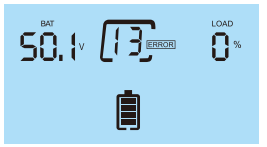
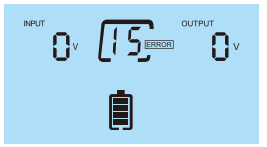
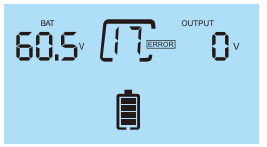
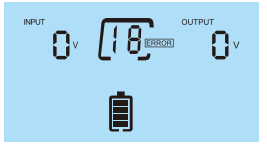


PWM Charge Controller software version

CPU software version 1.00
PWM Charge Controller software version
(for PWM Charge Controller Build-in)

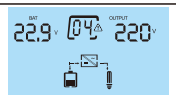
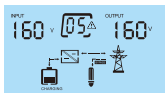
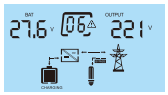
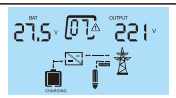
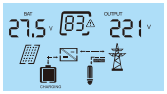
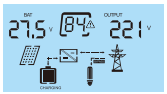
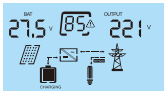
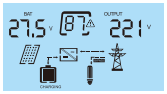
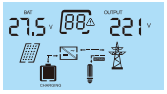
Fault Code Table

When fault event happens, inverter will cut off output, and the red LED is solid on. At the same time, fault code is shown on the LCD screen.

Fault Code	Fault information	Trouble Shooting	
13	Overload happens	Not allowed to overload when the inverter in battery mode, If overload, please turn off the inverter first, and then decrease the load let the load power less than the rated output power of invert, turn on the inverter again. If overload and the AC input is on, wait for 30s and it will clear away the fault automatically and work normally.	
14	Output voltage high	Restart the inverter or Contact our engineer.	
15	Output short	If AC input is on, must cut off the AC input first and then turn off the inverter, disconnect all AC output wiring and turn on it. If the screen still display fault, please connect our engineer. And if the inverter can work again, please check the output wiring and load, make sure all of them not shorted connection.	
17	Battery voltage high	Read the battery voltage from the screen, and measure the voltage of battery with multimeter . if both of the voltage are more than 60v, maybe the battery have some problem we must stop using it.	
18	Over temperature	Turn off the inverter, let it cool down, after the temperature back to normal and you can use it again.	
21	Over current happen in charging mode	Please contact our engineer.	
22	Inv soft start timeout	Please contact our engineer.	
24	Output voltage low	Turn off the inverter, disconnect all AC output wiring and then turn on it, if it still fault please contact our engineer, if it work normally, please check the output whether connect a big power load, disconnect the big one and turn on the inverter, confirm it can work normally.	
28	Current sensor is abnormal	Please contact our engineer.	

Warning Code Table

When warning event happens, the red LED is flashing. At the same time, the warning code is flashing on the LCD screen.

Warning Code	Warning information	Trouble Shooting	
01	Overload happens	The inverter forbid to over-load, the last working time will depend on the percent of load.	
04	Battery low	The voltage of battery is too low, the battery should be charging.	
05	Power derating (low utility voltage)	Read the voltage from the screen and confirm the voltage of AC input is about 90-170v. If it is ,means the voltage of AC input is low, it can work normally. If not, please contact our engineer.	
06	TX NTC is disconnected	Please contact our engineer.	
07	INV NTC is disconnected	Please contact our engineer.	
/	Flash	City electricity is not match to the inverter	
83		Faults for over charging current of built in MPPT	
84		Faults for battery low voltage of built in MPPT	
85		Faults for battery high voltage of built in MPPT	
87		Faults for high temperature of built in MPPT	
88		Faults for pv over voltage of built in MPPT	

MPPT charger controller match to the Inverter

In actually application system, MPPT controller and inverter will charge the battery at the same time, the charging current will excessive to occur unsafe situation, so we add the function of match the inverter and the MPPT controller to protect the battery more better, and more scientific to management the charging from solar panel or utility source.

NOTE: The inverter and MPPT controller are both just from our company can be matched and the maximum continuous charging current should be no more than 30% of the battery capacity. For example for the 48V200AH battery pack ,the continuous charging current should be less than 60A.

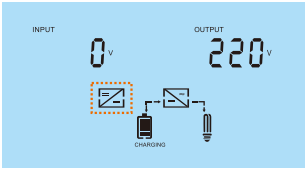
The inverter match to the MPPT controller have 2 main function

1.Enable or disable inverter to match MPPT function.(Special note: when the inverter upgrades the firmware, it needs to disable the function matching MPPT first)

2.Limited the the inverter charging current, the method as follow: A) When the MPPT charging current ≥ the current limited by the inverter ,and then the inverter maximum charging current is 0.B)When the MPPT charging current < the current limited by the inverter, the inverter maximum charging current =the total charging current set by the inverter -MPPT charging current.

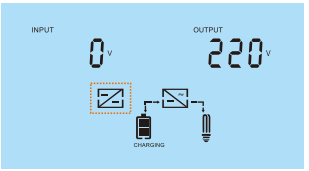
Match the inveter to the MPPT controller:

1. To enable the inverter to match the MPPT controller, the inverter and MPPT controller should be switched on first, and the communication lines between them have been connected;
2. Then press the "Down" button of the inverter for more than 2.5 seconds, until the MPPT charger icon flashes. Release the button,. The icon flash indicates that the inverter is trying to communicate with MPPT.The icon of the inverter stops flashing 10 seconds after the button is released, and when the communication is successful, it means that it has been enabled successfully.
3. Once enabled successfully, matching MPPT function flag will be saved in EEPROM, and restart the inverter needn't to manually enable again.
4. After successful enabling, the pv-voltage, power and other information of MPPT will be displayed when page-turning on the LCD screen.

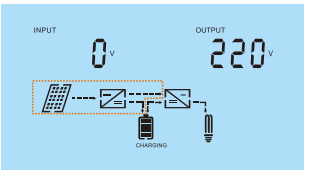
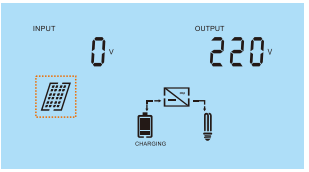
Action	Instruction	LCD display
Match the MPPT function enable	Long press "Down" button until the icon in the red box in the right picture flashes, indicating that the inverter is trying to communicate with MPPT. The icon stops flashing after the inverter loosens the button for 10 seconds	

Matching MPPT function is prohibited:

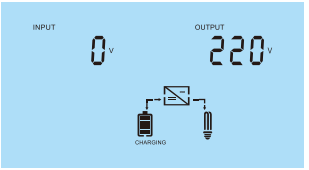
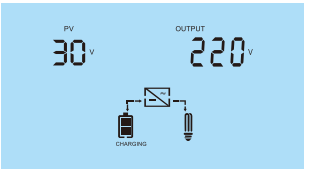
1. To prevent the inverter from matching the MPPT function, the MPPT should be turned off or the communication connection between the two should be disconnected.
2. Then long press the "Down" button of the inverter for more than 2.5 seconds, until the MPPT charger icon flashes. At this point, the button can be released. The flashing icon indicates that the inverter is trying to communicate with MPPT. The flashing icon will stop 10 seconds after the button is released. Failure to communicate indicates a successful prohibition.
3. After successful prohibition, matching the MPPT function flag will be saved in EEPROM. Restart the inverter without manual prohibition again.
4. After successful prohibition, pv-voltage, power and other information of MPPT will no longer be displayed on the LCD screen.

Action	Instruction	LCD display
Matching MPPT function is prohibited	Long press "Down" button until the icon in the red box in the right picture flashes, indicating that the inverter is trying to communicate with MPPT. The icon disappears after the inverter loosens the button for 10 seconds	

Matching MPPT function successfully enabled:

Action	Instruction	LCD display
Match MPPT function to enable successfully	If MPPT is in charging state: When the MPPT function is successfully enabled, the icon in the red box in the right picture will appear	
Match MPPT function to enable successfully	If MPPT is not in the charging state, but PV voltage is greater than 30V and is in the startup state: When the MPPT function is successfully enabled, the icon in the red box in the right picture will appear	

Matching MPPT function is prohibited successfully:

Action	Instruction	LCD display
Match MPPT function	When the matching MPPT function is prohibited successfully, MPPT icon information will no longer be displayed	
Whether matching MPPT function enables judgment	1. If the MPPT function is enabled, the LCD interface page turning will display PV voltage,power and other information; 2. If the matching MPPT function is prohibited, the LCD interface page turning will not display PV voltage, power and other information;	

Power inverter