

Inverter Systems, Inc.
Vigilant Series
Installation Instructions
And
User Manual
100 Watts to 600 Watts

INSTRUCTIONS FOR VIGILANT SERIES 100W THRU 600W

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

1. This equipment should be installed by a qualified electrician in accordance with all local and national codes.
2. This equipment should be maintained by qualified service personnel.
3. Do not use outdoors.
4. Do not mount near gas or electric heaters.
5. Do not connect with power cords. Hard wire only.
6. The batteries used in this equipment are sealed. Do not puncture them. Battery acid can cause burns to skin and eyes. If acid is spilled on skin or in eyes, flush acid with fresh water and contact a physician immediately.
7. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
8. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, AND VOID THE WARRANTY.
9. Do not use this equipment for other than intended use.
10. **CAUTION: Do not exceed total output rating of this equipment.**

SAVE THESE INSTRUCTIONS

CABINET INSTALLATION

Carefully remove the cover from the box by removing the cover screws. Place cover where it will not be damaged.

1. Fasten mounting shelf (if furnished, or supply your own capable of supporting at least 125 pounds) securely to the wall using appropriate hardware (not furnished).
2. Place unit securely on the mounting shelf. Allow a minimum of a one-inch clearance around the unit for ventilation.
3. This equipment is supplied with 4 conduit knockouts. **Do not drill holes in cabinet. Drill filings can render the product inoperable.**

AC LINE AND LOAD CONNECTIONS

4. Make sure power from circuit breaker panel is off.
5. Extend conduit and an un-switched 24-hour AC supply of rated voltage to the unit.
6. Extend conduit and load circuit (s) to unit.

Note: load wires must be in a separate conduit from the input circuit and completely isolated from all other circuits. Sharing of neutrals will result in a GFCI failure.

7. Determine the desired operation of your inverter system:
 - Option 1 - Connected load will be always on
 - Option 2 - Connected load can be switched on and off locally and remain on during a power failure.
 - Option 3 - Connected load will be off during normal operation and come on during a power failure
8. Go to the last page of this manual and choose the appropriate wiring diagram based on your choice above and your operating voltage. Make the proper AC input connections accordingly.

NOTE: This unit is supplied as either 120 or 277. It is not dual voltage. Do not turn on AC supply at this time.

BATTERY CONNECTIONS

NOTE: There will be a small arc and pop when the first battery is connected.

- 9. Connect batteries to flying leads coming from the charger/transfer assembly - Red is positive and Black is negative. You should have the same number of wires (red and black) as you have batteries. One 12 volt battery is supplied for each 100 watts of power.

SYSTEM START UP

- 10. Turn on the AC supply to the unit. If the system has been supplied with input and output breakers, turn them both on at this time also. The green and yellow pilot lights will come on and the connected AC load fixtures will illuminate if option 1 was chosen on step#7.
- 11. Depress the test switch and hold it for several seconds. The pilot lights will go out and the emergency lights will remain lit.
- 12. Release the test switch. The emergency lights will remain lit and the Yellow and Green pilot lights will come back on.
- 13. Replace the cover.

OPERATION

Allow unit to charge for a minimum of 24 hours for a functional test. For a full load, 1.5 hours discharge test, allow system to charge for at least one week. Test unit by depressing the test button for several seconds. Pilot lights should extinguish and the connected AC fixtures may blink on and off for a couple of seconds and then come back on. Release the test switch. The pilot lights will illuminate and the connected load will remain on.

IMPORTANT

During prolonged power outage, or system shutdown, the system's batteries must be disconnected to prevent permanent premature damage.

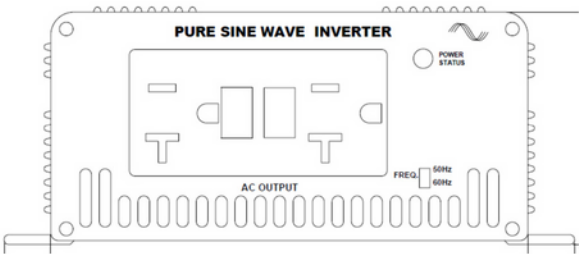
MAINTENANCE

System should be tested as per the NEC guidelines.

OPERATING INFORMATION

The inverter has self-protection circuitry that will disconnect the battery and or load in the event of a fault. If the inverter is working properly but there is no output check the status LEDs for the following indications:

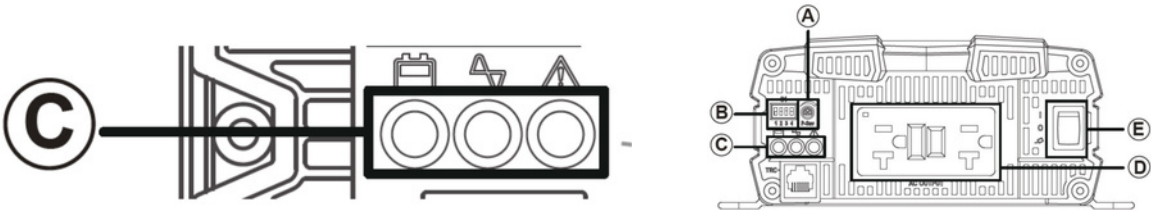
The diagram below shows the inverter side panel inside the unit for units up to 300 watts:



Green LED	LED Signal	Status
Solid	—————	Power OK
Red LED	LED Signal	Status
Blink (Fast)	-----	OVP
Blink (Slow)	- - - - -	UVP
Blink (Intermittently)	OTP
Solid	—————	OLP

- If the pilot light marked Power Status LED is not lit then check to see that the inverter switch is in the on position.
- Check to make sure the ground fault reset is pushed all the way in.

For 400W and 600W units refer to diagram below:



FAULT INDICATIONS



INPUT LEVEL LED:

LED status	DC 12V
Red	< 11.0V
Orange	11.0 ~ 11.5V
Green	11.5 ~ 15.0V
Orange	15.0 ~ 15.5V
Red	>15.5V



LOAD LEVEL LED

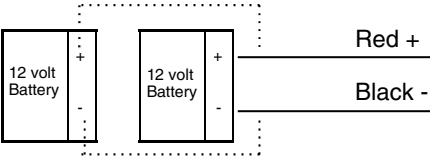
LED status	DARK	GREEN	ORANGE	RED	RED BLINK
SK700	0 ~ 56W	56 ~ 230W	230 ~ 525W	525 ~ 672W	Over 672W



STATUS LED:

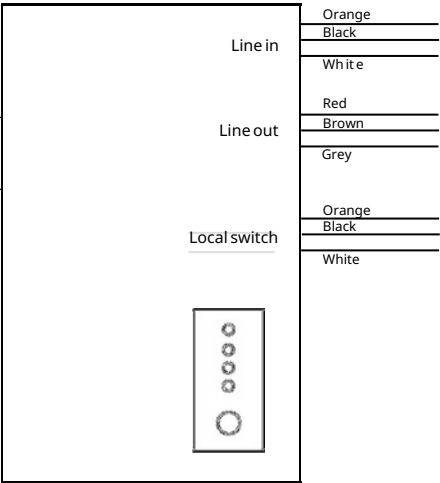
Green LED	LED Signal	Status
Solid	—————	Power OK
Slow Blink	- - - -	Power Saving
Red LED	LED Signal	Status
Fast Blink	- - - - - - - -	OVP
Slow Blink	- - - -	UVP
Intermittent Blink	OTP
Solid	—————	OLP

WIRING DIAGRAM



Note: There may be more than one red and black wire. Connect one set of wires per battery.

100 watts uses one 22AH battery
200 watts uses two 22AH or one 45AH battery
300 watts uses three 22AH batteries
400 watts uses four 22AH or two 45AH batteries
600 watts uses six 22AH batteries



See page 5 for wiring diagrams.

If system is 120 volts, the Orange and Red wires will not be there.

Do not exceed total nameplate rating of equipment.

