

ACE SINEWAVE DIGITAL HOME UPS

Rev 2.01 (01/04/2015)

Doc.No. -2015_SW800_M01

Features :-

- 1) Microcontroller based design with DSP technology.
- 2) Pure Sinewave Output.
- 3) SMPS based battery charger, charges battery from 110V onwards (no sound from Transformer).
- 4) Fully computerized Fuzzy Logic multi – stage battery charger.
- 5) Adjustable Charging Current can from 5 – 12 Amp.
- 6) Complete overload and short circuit protection with facility to run highly inductive loads.
- 7) Automatic overload reset.
- 8) Closed loop regulated Sine Wave output from no load to full load.
- 9) Changeover time less than 9 mSec. in Home UPS mode.
- 10) Line Synchronized change over in Home UPS mode.
- 11) Soft start Inverter mode for cold starting inductive loads.
- 12) Compact double sided PTH design , with minimum components. Easy to repair and maintain.

Assembly Instructions :-

- 1) Make the transformer as per given design (Use split bobbin only), and assemble according to wiring diagram. **Connect 3 inch 12V DC Fan as shown in the diagram.**
- 2) Keep the Inverter switch off.
- 3) Connect the battery using minimum length of 10-16 sq mm. battery wire.
- 4) Switch on the Inverter switch. After self diagnostics the Inverter will start working. At this time the Inverter on LED will glow. The output voltage is @ 225 Volts.
- 5) Put some bulb load on the inverter. The output voltage will remain constant. If battery is below 10.4 volts Battery Low LED will be on, and buzzer will sound every 5 seconds. The Inverter is switched off when battery voltage falls below 9.7 volts. (battery voltages measured on the card).
- 6) In case the load connected is more than the capacity of the Inverter , Overload LED will glow and the Inverter will switch of after some time (@ 20 seconds). It will switch on again to check if the overload condition has been removed. If the load is within limits the Inverter will keep on working , else it will switch off after 5 such tries.
- 7) Connect the inverter to Mains Line carefully, observing the correct polarity of Live and Neutral.
- 8) The inverter enters the mains mode after a few seconds. The Mains On LED starts glowing.
- 9) When battery is being charged Charge LED is in Blinking mode and when battery is fully charged the LED glows continuously.
- 10) *For proper Line Synchronization of AC Mains and Inverter mode connect Transformer wires as shown in the wiring diagram.*
- 11) The Fan works in the boost charging mode , and in Inverter mode when the load is > 30%.
- 12) Charging current can be adjusted by preset VR2 .
- 13) The battery boost voltage is 13.9V when Jumper J7 is open. When J7 is shorted the boost voltage becomes 14.3V , and the charging current increase by @ 30%.
- 14) In the Inverter mode (J8 – Open) . Change over voltages are 100Volts and 300Volts ($\pm 5V$).
- 15) In the Home UPS mode (J8-Short) , change over voltages are 180 Volts and 270 volts ($\pm 5V$).

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Sine Wave Micro Controller Based Home UPS Kits

Software Rev 2.01

Transformer Details (Use Split Bobbin Only)

| Inverter | Core Size | Voltage/ No. Of. Turns | Wire SWG |
|--------------|-----------|--|--|
| 800VA 12V | 4 No. 3" | 230V / 390 Turn 7.1V / 12 Turn 14.2V / 24 Turn | 1 x 20 SWG 3 x 12 SWG 1 x 25 SWG |

Jumper Details J7 and J8

| Chg. Cur. / Batt. V | Jumper J7 | Mode Selection | Jumper J8 |
|---------------------------------------|---------------|----------------------|---------------|
| 8.5 Amp. / 13.9 V 11 Amp. / 14.3 V | Open Short | Inverter Home UPS | Open Short |

LED Connection Details

Connector CN4 :-

LED On / LED Blink

- 1 - Ground Common
- 2 - INV ON LED
- 3 - Mains On / Fuse Blown LED
- 4 - Charged / Charging LED
- 5 - Overload / Hot LED
- 6 - Battery Low LED

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