

Wiring Schematic And Details Of ACE HUPS 3000D Rev 6.xx

Doc. No. -2015 HUPS 3500 01

Transformer Details :-

INVERTER	CORE SIZE	No. Of. Turns	Wire SWG
2500 VA 48 V	7B No. 3 ½" Stack	0 - 36 (Bifilar) 0 - 117 - 192 - 200 0 - 14	10 SWG 15 SWG 24 SWG
2500 VA 48 V	8 No. 3 ¼" Stack	0 - 44 (Bifilar) 0 - 142 - 234 - 243 0 - 17	10 SWG 15 SWG 24 SWG
3000 VA 48 V	8 No. 3 ½" Stack	0 - 48 (Bifilar) 0 - 155 - 255 - 265 0 - 18	2x11SWG 14 SWG 24 SWG
Transformer Voltages Primary Winding - 0 - 40 Volts (Bifilar) Sec - I - 0 - 121 - 215 - 225 Volts Sec - II - 0 - 16 Volts			

LED Connection Details

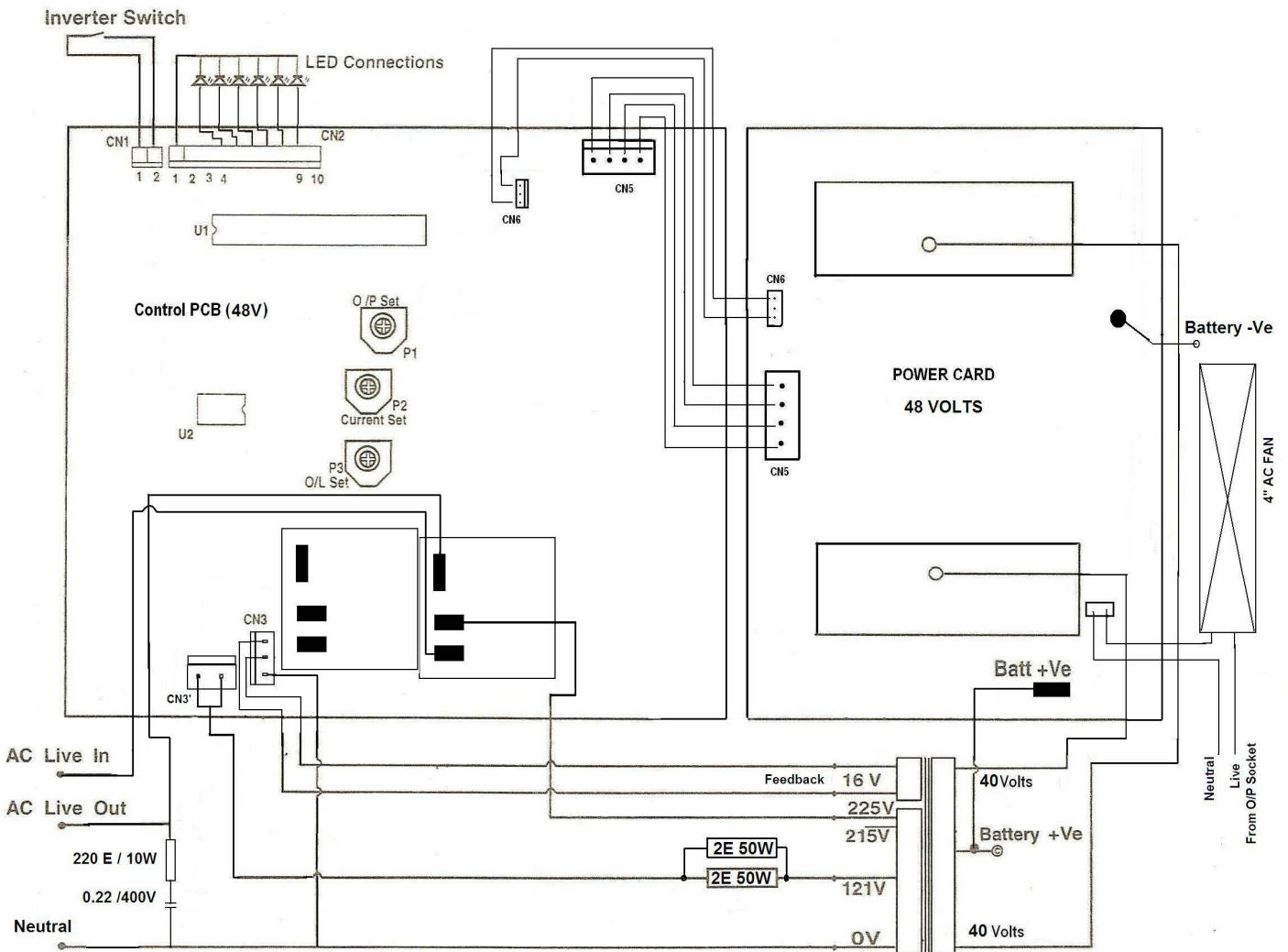
Connector CN2

- Pin 1 - LED Common Ground
- Pin 4 - Mains On LED
- Pin 5 - Inverter On LED
- Pin 6 - Charging LED
- Pin 7 - Charged LED
- Pin 8 - Battery Low LED
- Pin 9 - Overload LED

Jumper Details

- | | |
|-------------------------------|------------|
| For Normal 8Amp charging | J7 - Open |
| For High charging 11Amp | J7 - Short |
| For Tubular batteries (59.2V) | J9 - Short |
| For Home UPS mode (180-260V) | J8 - Short |
| For Battery low cut-off 34 V | J3 - Short |

3000 VA/48V HUPS (Rev 6.01)



ACE Digital HOME UPS 3000D/48V (Rev 6.01)

Features :-

Jan 2015

1. Based on highly reliable Micro controller PIC16F72.
2. MOSFET technology , PWM AC output.
3. Selectable Inverter / Home UPS mode, with mains high and low cutoff.
4. Soft Start inverter mode.
5. Inverter Mode protected against Overload, Short Circuit, Reverse Phase, Battery Reverse.
6. Automatic low battery warning and cutoff.
7. Four stage FUZZY LOGIC battery charging control, with jumper selectable current and voltage.
8. Equalization charger mode for longer battery life.
9. Charger circuit fully protected with separate charger Relay control.

Assembly Instructions:-

1. Make the transformer as per given design and assemble according to wiring diagram.
2. Do not connect the transformer wires to the main heat sink for initial testing.
3. Keep the Inverter Switch off , and connect the battery, observing correct –Ve and +Ve polarity.
4. All the LED's will turn on with buzzer sound and will turn off one by one.
5. Switch on the Inverter Switch and check the MOSFET Gate drive . It should be equal on both Channels.
6. Inverter On LED will be on.
7. Now switch off the Inverter and connect the Transformer Wires on the Heat Sinks.
8. Switch on the Inverter. Check AC output at the output socket.
9. Now connect the AC Mains. Mains LED will start glowing after a few seconds and the system will enter charging mode. The charging current will be @ 8-9 Amp. when J7 is open , and 11-12 Amp. when J7 is shorted. The current will start decreasing once battery voltage crosses 52.4 Volts.
10. *Charging current can be adjusted by preset P2*
11. The Low and High voltage cut-off is set at 100V / 290V in the Inverter mode(J8-open) and 180V / 270V in the HOME UPS mode (J8-short).
12. Output voltage in the backup mode can be adjusted by P1. Connect a 400VA load on inverter and rotate P1 in anti clockwise direction till output is @ 225V. If feedback winding is not use the output is auto adjusted as per the load level and battery condition. It will remain between 200V and 250V in normal conditions.
13. The full load setting can be adjusted with preset P3. At full load the voltage on Pin 5 of uC should be @ 2.0V. This can be adjusted by rotating preset P3.
14. *The charger will charge the battery upto 56.0/56.8/59.2 Volts depending on Jumper J7 and J9. This is the boost mode. The charging current will start reducing after 53.2Volts.*
15. The charger enters the Absorption mode after this and the charging current further reduces. Thereafter the charger will enter equalization and Float Mode. *In the Float mode battery will float at 53.6/54.0/55.2 Volts.* The equalization mode takes the battery upto 58.0/60.8 Volts to reverse the process of sulphation and to equalize all the cells. This mode is enabled periodically.
16. In the backup mode the battery Low warning starts at 41.2 Volts and the system is switched off below 38.4 Volts. If jumper J3 is shorted the battery low cutoff reduces to 34.0 Volts. The voltages are measured at PCB connections.
17. Fan will be on in Inverter mode when load is greater then 40%. Fan not required in charger mode.

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