



Ningbo Zonbo Electrical Co., LTD.

TANJIALING VILLAGE ,YUYAO CITY , ZHEJIANG PROVINCE .CHINA

TEL:0574-22670859

FAX:0574-22670686

Web: www.zonbo.net

Email: soler@zonbo.net

Trouble Shooting

ITEM: NC series (smart start function version)

Section 1: Check the buzzer sound

(1) Normal: Once

① The inverter's main control part is normal.

(2) Low-voltage protection: Twice

① When it sounds twice, please check the battery. The standard value is 12V (10.5V-15V), 24V (22.5V-27V), 48V (46.5V-51V).

② Charge the battery.

(3) Low-voltage shut down: Three times

① When it sounds three times, please check the battery's voltage. The standard value is 12V (10.5V-15V), 24V (22.5V-27V), 48V (46.5V-51V).

② Change the battery.

(4) Over-voltage shut down: Four times

① When it sounds four times, please check the battery's voltage. The standard value is 12V (10.5V-15V), 24V (22.5V-27V), 48V (46.5V-51V).

② Change the battery.

(5) Overheating protection: Five times

- ① The inverter's internal temperature is higher than 65°C.
- ② The inverter will operate normally after it cool down.

(6) Overload protection: Continuous screaming.

- ① When it sounds continuously, the output power is already exceed the standard power value.
- ② Reduce the load to standard value and the inverter can operate normally.

Section 2: Open the inverter to fix

※ If Section 1 is ok, please open the inverter to check.

(1) Check the input and the output whether they are connecting well.

(2) Check the fuse whether it is fusing. (If fusing, please change)

- ① Cut off the fuse.
- ② Change the fuse.

(3) Check the voltage of the front drive board.

① Shut down the power switch, access the current to the back of switch which the maximum current is 5A. The standard value is 12V (10.5V-15V), 24V (22.5V-27V), 48V (46.5V-51V).

② Check the grid voltage of preceding stage's Mosfet, and the normal is 5V-8V, set the multimeter to DC mode, if you could get 5V-8V voltage, please check the Mosfet(Remark 1).

③ Check the grid voltage of preceding stage's Mosfet, if you can't get 5V-8V voltage, please check the resistance of Mosfet's grid which the standard value is 10Ω, change the resistance if the value is not 10Ω. If you get 10Ω, please check the TR (Remark 2), change the TR if it is broken. If the resistance and TR are both ok now, please change the front drive board.

④ Check the grid voltage of backward stage's Mosfet, if you can't get 5V-8V voltage,

please check the resistance of Mosfet's grid which the standard value is 10Ω , change the resistance if the value is not 10Ω . If the value is normal, change the back drive board.

Section 3: To check the capability of components

1. Set the multimeter to ohms mode and check whether the resistance is burnout. (Change the broken one.)
2. To check the voltage, connect the black to the cathode and the red to the Mosfet's grid, you can get 5V-8V voltage. Check all the Mosfets. If the voltage is 0V, discharge the Mosfet and check it. (Remark 1)
3. To check whether the TR is broken. (Remark 2)
4. To check whether the diode is broken. (Remark 3)

Section 4: To test voltage

To check the whole inverter after the voltage is normal. Please notice that take necessary electric shock measures and wear the insulating gloves when operate below:

1. Set the multimeter to DC mode to check the bus voltage (big electrolytic ends) ---

Bus volt: 150V~160V (for 120Vac spec.);

Bus volt: 300V~320V (for 230Vac spec.).

2. Set the multimeter to AC mode to check the output voltage (outlet ends) ---

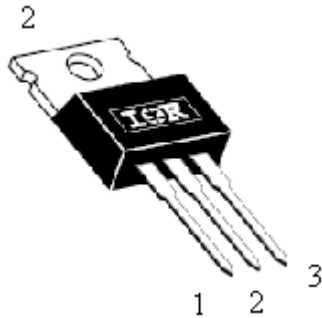
Output volt: 100V~120V (for 120Vac spec.);

AC Output: 220V~240V (for 230Vac spec.).

(If you get above value, it means the inverter is ok now. If you get other value, please repeat the steps of Section 2.)

Remark1: The test method of Mosfet

1

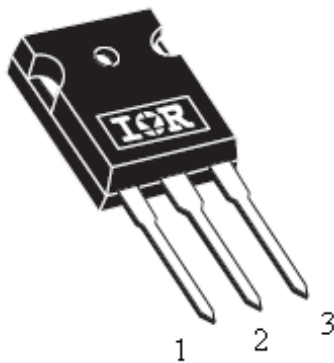


To set meter under diode mode, the below is the value you can get---

(A) Red lead to leg 3, black lead to leg 2: The meter volt will climb to 0.3~0.5 slowly, this means Mosfet is ok. Please wait for a moment to reach this value. If you just get “0”, it means the Mosfet is broken.

(B) Red lead to leg 3, black lead to leg 1: The meter volt would show OL, this means Mosfet is ok. If you can’t get OL, but other value, this Mosfet is broken.

2



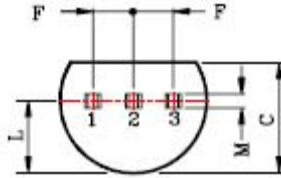
To set meter under diode mode, the below is the value you can get ---

(A) Red lead to leg 3, black lead to leg 2: The meter volt will climb to 0.3~0.5 slowly, this means Mosfet is ok. Please wait for a moment to reach this value. If you just get “0”, it means the Mosfet is broken.

(B) Red lead to leg 3, black lead to leg 1: The meter volt would show OL, this means

Mosfet is ok. If you can't get OL, but other value, this Mosfet is broken.

Remark2: The test method of TR



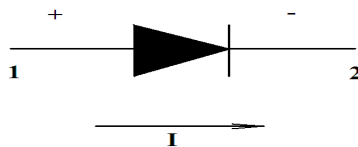
To set meter under diode mode, the below is the value you can get---

(A) Red lead to 3, black lead to 2: the meter shows 0.3-0.67. If you get other value, TR is broken.

(B) Red lead to 1, black lead to 2: the meter shows 0.3-0.67. If you get other value, TR is broken.

(C) The little error in each component value is acceptable.

Remark3: The test method of diode



To set meter under diode mode, the below is the value you can get---

(A) Red lead to 1, black lead to 2: the meter shows 0.3-0.7. If you get other value, diode is broken.

(B) The little error in each component value is acceptable.