

Deye 3phase Hybrid Inverter PCB Board Replacement Guide

When you see this sub-guide, it indicates that there is a problem with the machine and needs to open the machine housing for service. Before opening the Inverter Shell, the inverter's power cables (including AC and DC) need to be disconnected altogether. Wait at least 5 minutes before you can proceed.

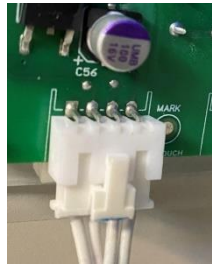
Note: before removing any cables/screws please take photos to remember the connection method and location. This is very important.

I. 1, Remove the screws counterclockwise



2, After removing the housing, carefully remove the shell, the housing liquid crystal plate is connected to the inside of the machine. Take a photo of the interior and record the location of each harness to prevent errors during installation and send us photos.

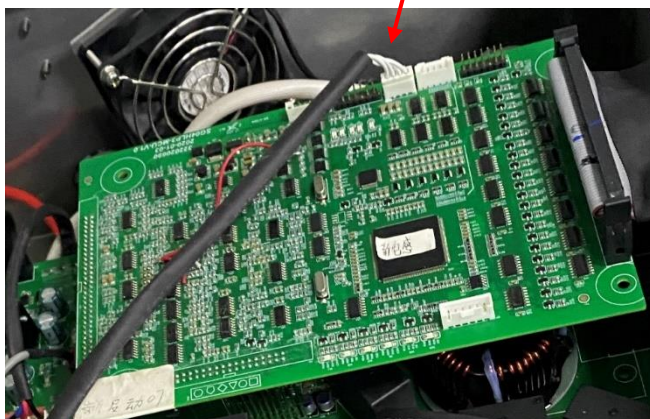
2, 4Pins communication cables. if the communication cables between LCD and control board didn't connect well, the LCD will failed to communicate with control board, and the LCD will shows COMM. Also it can't show the inverter Serial Number.



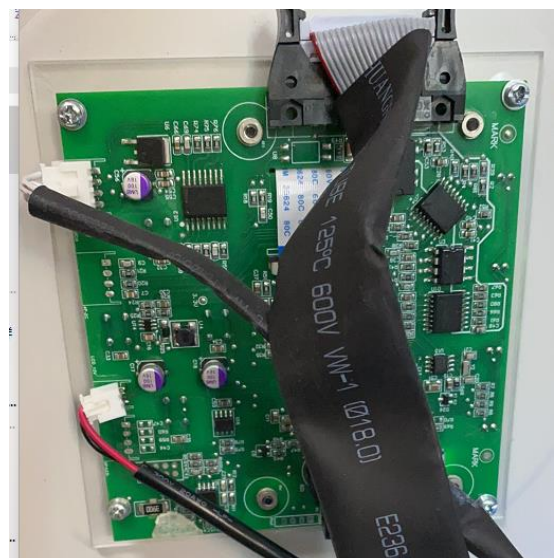
1, LCD auxiliary power supply 12Vdc, 2pins



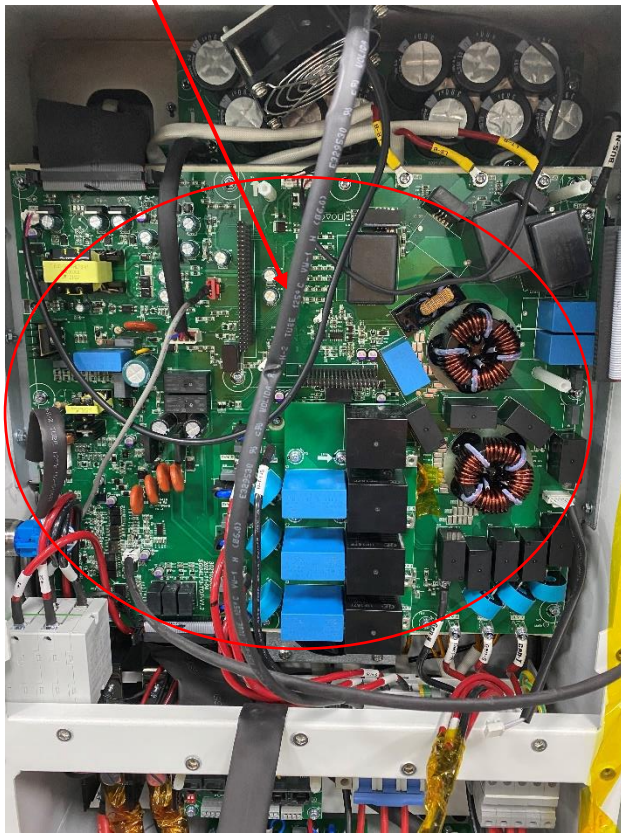
Control board



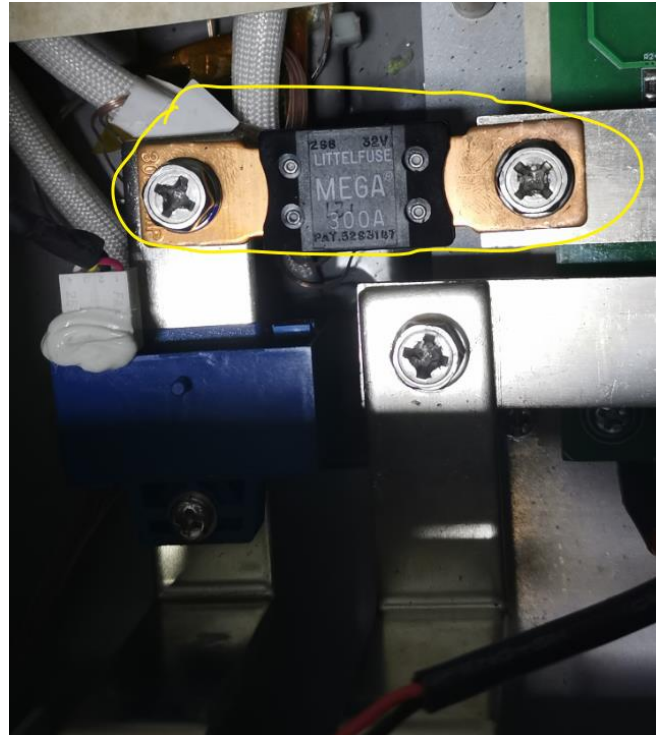
LCD board



Main board.

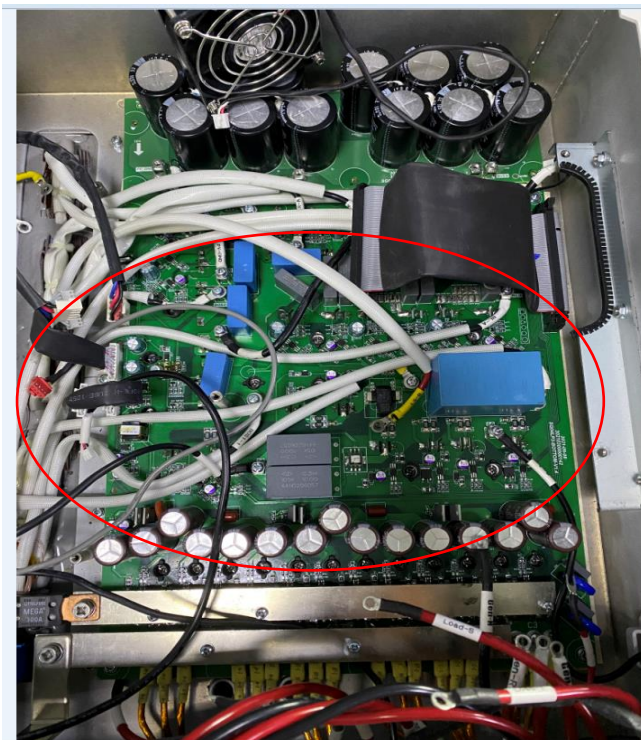


Battery side fuse

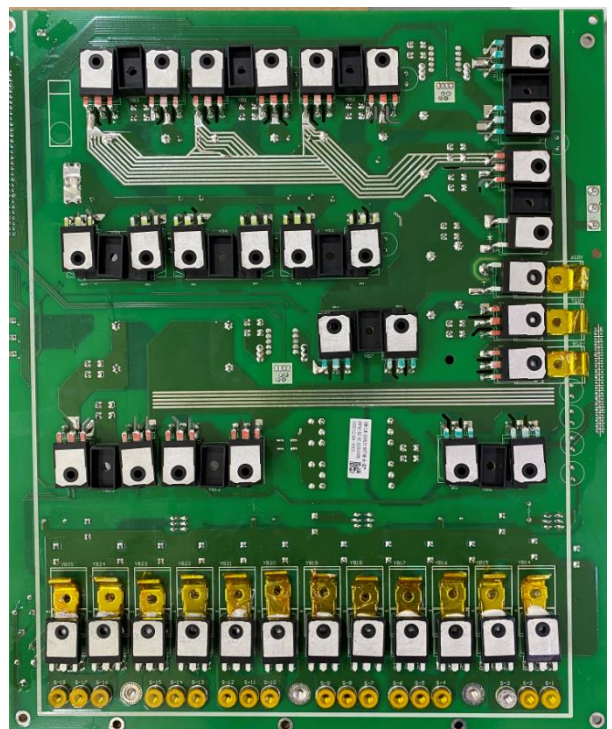


3, After taking out the mainboard, you will see the IGBT board.

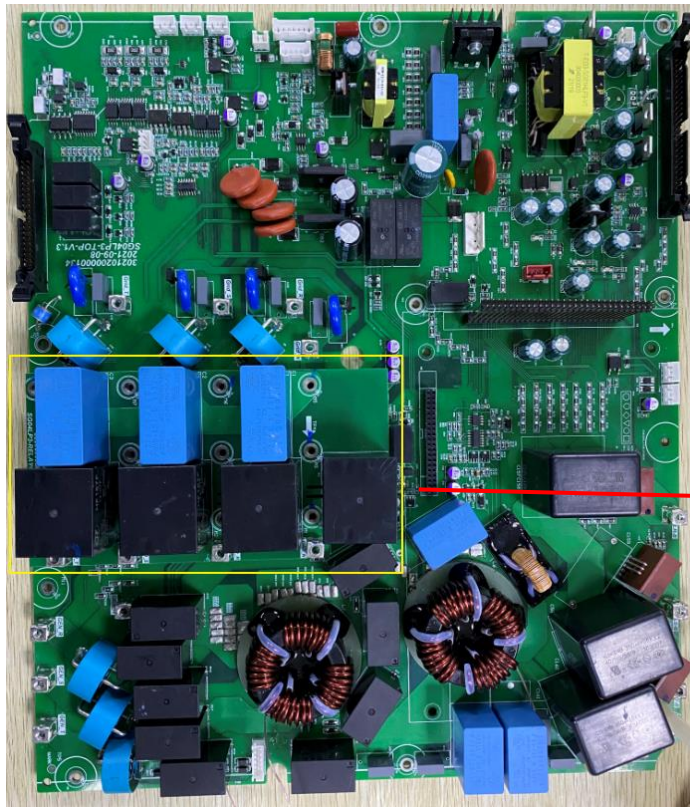
IGBT board front side



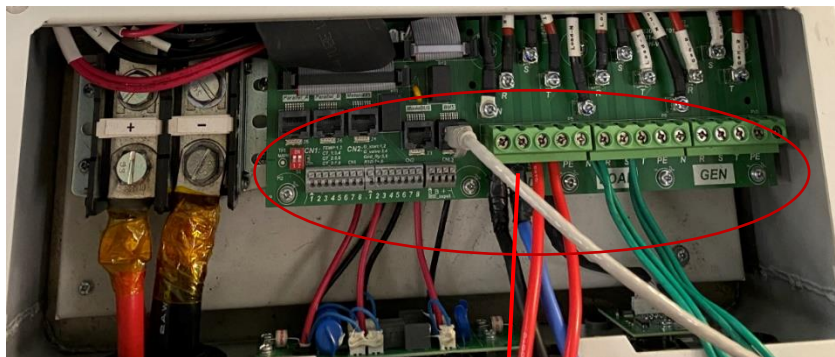
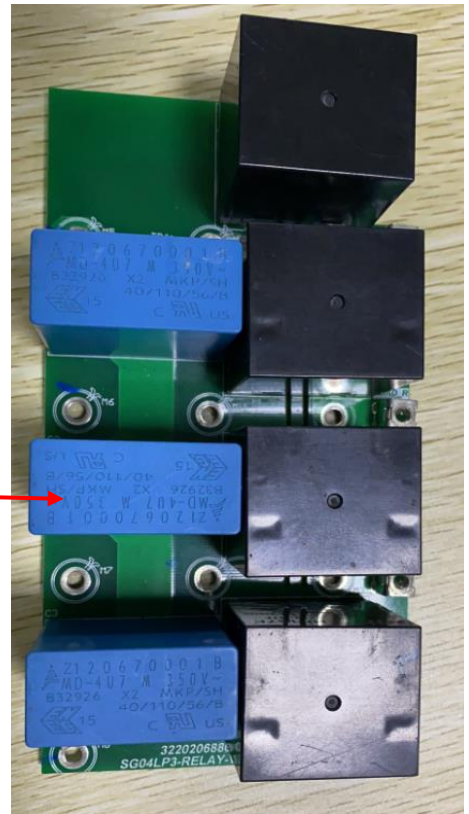
IGBT board back side



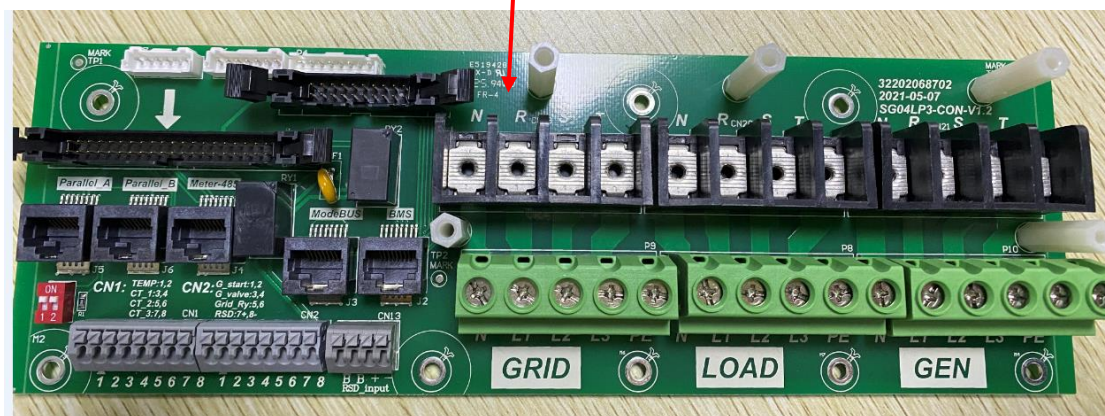
Mainboard



Grid side relay board



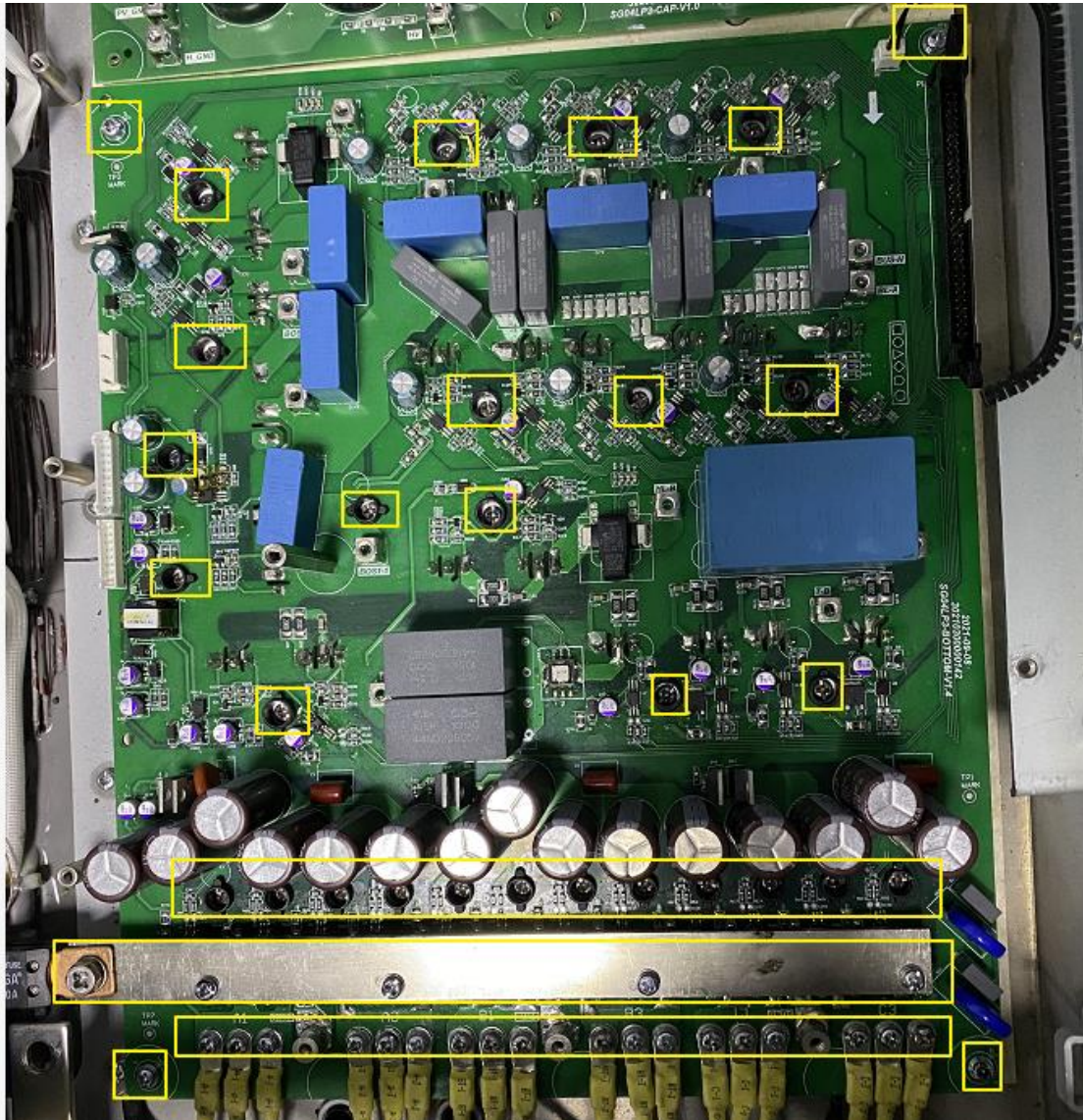
Connetion board



4, After removing the follow 5pcs screws and all the wires, then you can take out the mainboard.

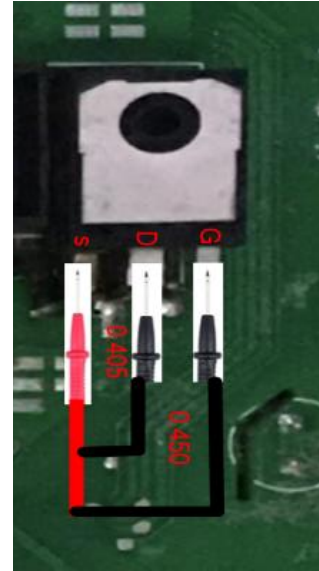


5, After removing the below screws, you will be able to take out the IGBT board.



II, IGBT Testing

IGBT measurements is of paramount importance, and the motherboard needs to be removed no more than is required next. The universal meter needs to be selected into the diode gear when measuring the voltage drop of semiconductor devices such as IGBT and diode.

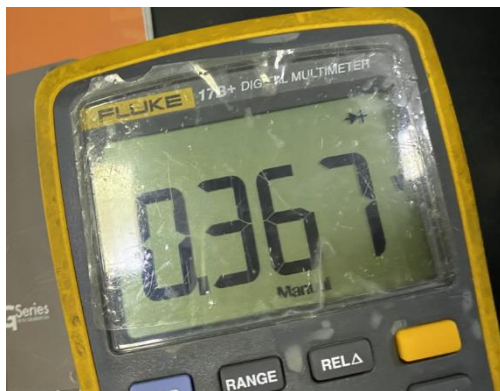
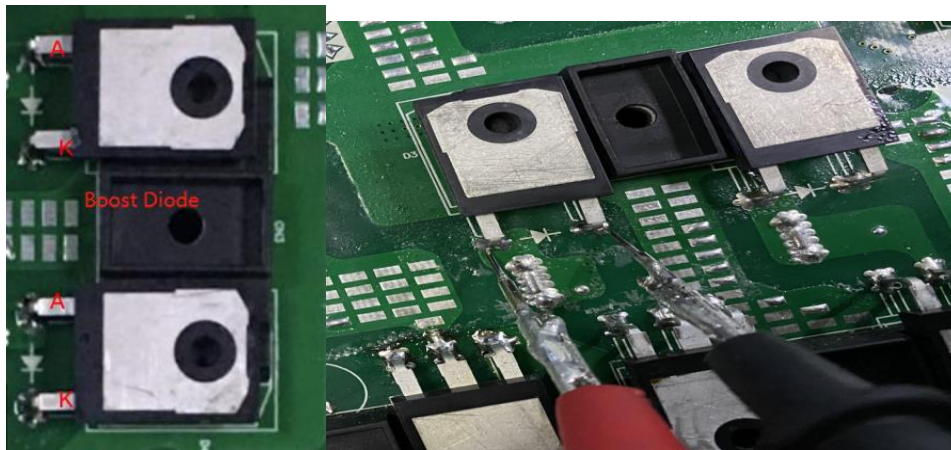


The above two figures are the measurement of the IGBT, set knob of multimeter to diode gear, red table pen corresponding to S-level, black pen corresponding to D-level, the value of 0.405V, black table pen point G-level value of about 0.450V. If the difference is too large, especially if the value is close to 0, the IGBT is damaged.

III, Diode test method

The below image is the data for measuring THE BOOST diode

Set the multimeter to the diode setting. Connect the black probe to the diode's anode K and the red probe to cathode A. Squeeze the probes with a little pressure against the two Pin terminals of the D11. If showing about 0.367V(Pic 1), it tells the triode is good. If reverse Pin, it will show about OL (over load, Pic 2). if your test result is big different with this value, the diode is damaged.



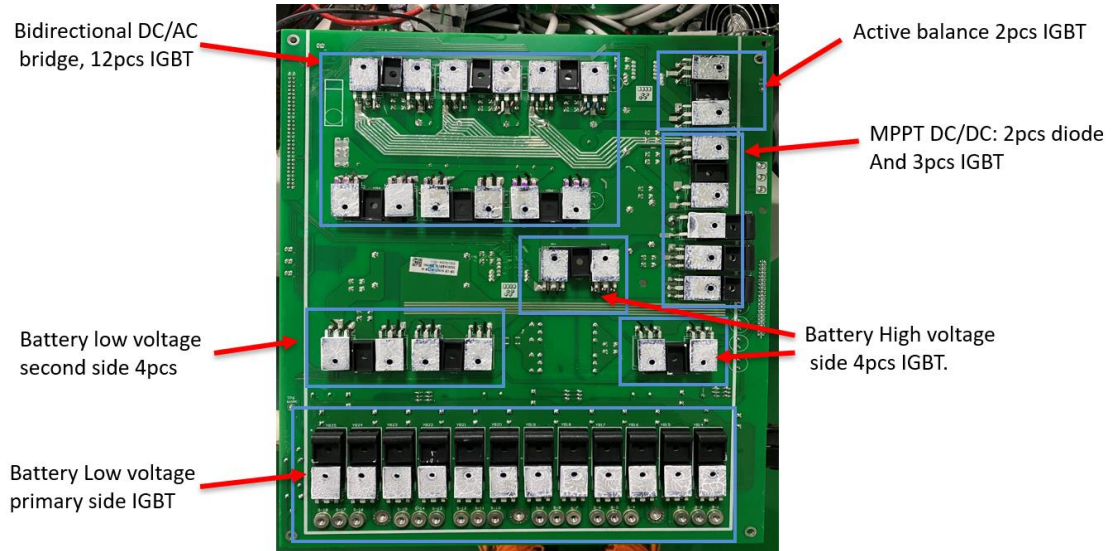
Pic 1



Pic 2

IV, If the IGBT is damaged, the corresponding drive part also needs to be measured or replaced directly as shown in diagram below.

IGBT board



If the IGBT/MOS damaged, also need to check the marked component (the corresponding driver part)

For example, If the IGBT Q19 (1200V/40A) is damaged, generally the corresponding driver part circuit is damaged. So it is needed to test their driver circuit parts. E.g. optocoupler U19 TP152 and resistance R75/78/79 (10ohm).

