N.O.：KLXN-WP-ITOI-001

IGBT 测试工装操作说明

IGBT Test kit Operation Instructions

Version：A/0

Fiction：Xincheng Li

Review：Wei Wang

Approval：Ying Zhang

SiChuan Clou Energy Electric Co., Ltd

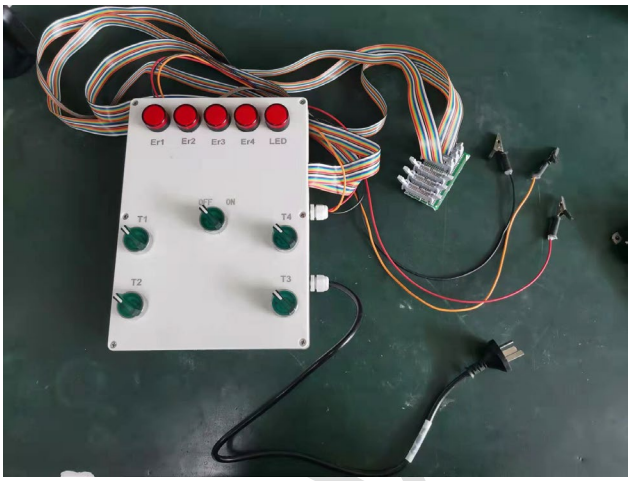
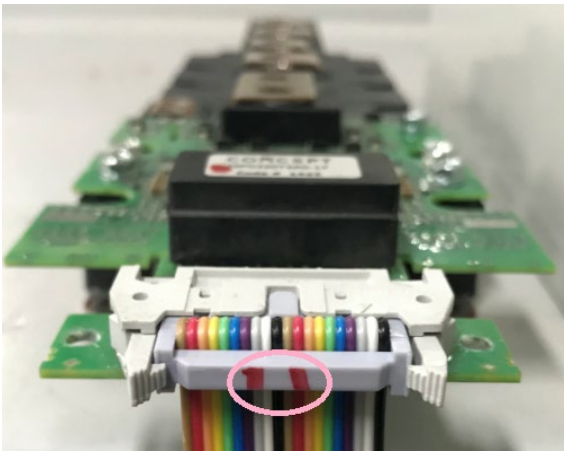
2022.01.25

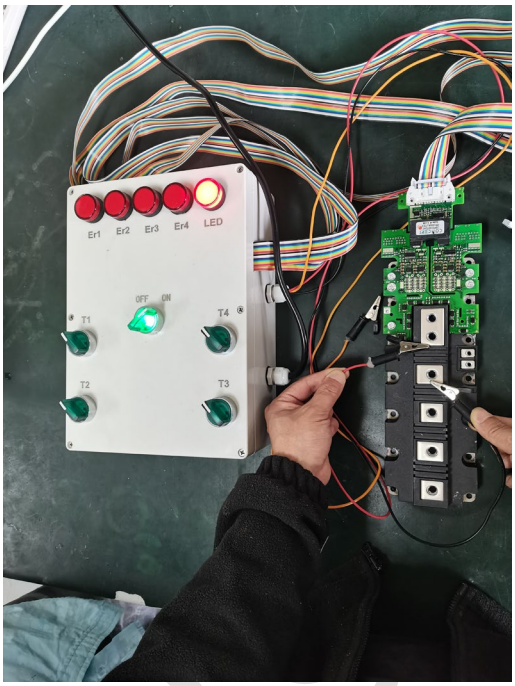
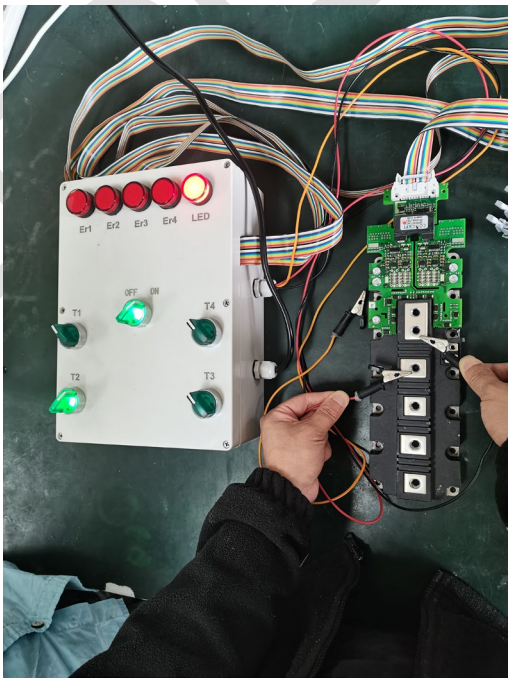
Document Revision History

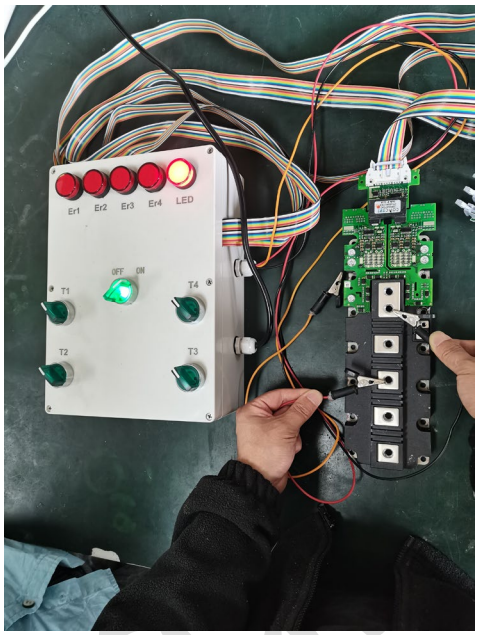
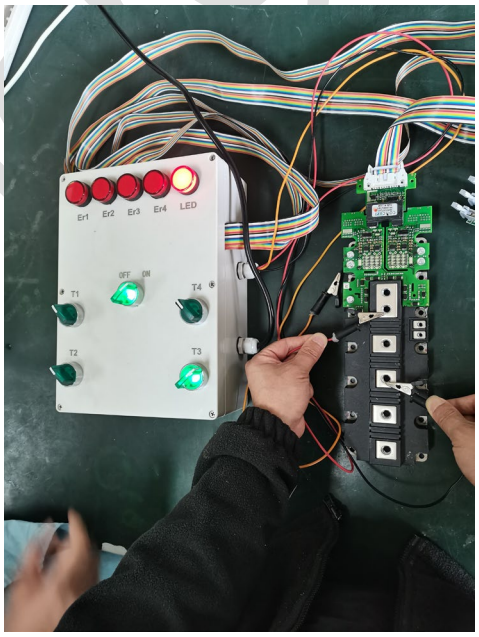
Version	Revised Categories	Brief Description	Date	Reviser
A/0	C	IGBT 测试工装操作说明	20220125	Xincheng Li、Jerry Yin

Revised Categories: C = Create, A = Add, M = Modify, D = Delete

IGBT 测试工装操作说明

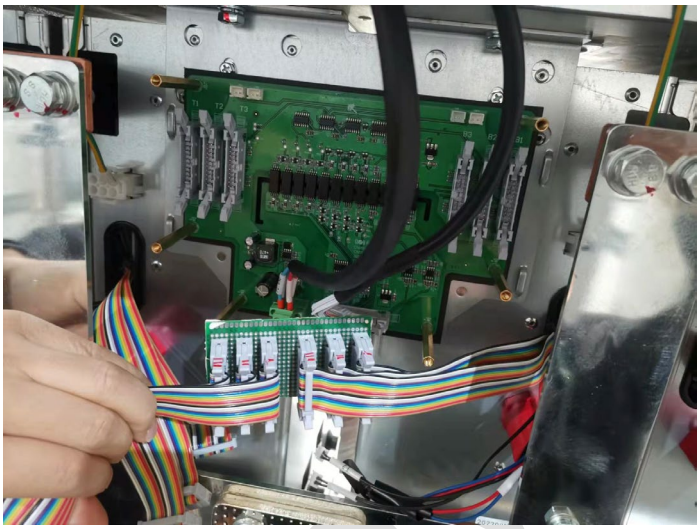
IGBT Test Fixture Configuration Ensure the IGBT test fixture is properly connected and all necessary accessories are available.	
DC 24V Output Cable • Red: Positive • Black: Negative • Orange: Neutral	
单个 IGBT 测试	
Connection to IGBT Driver Board Insert the terminal marked with a red “II” label into the corresponding terminal on the IGBT driver board.	

Freewheeling Diode Test between Pin 8 and Pin 9 • Turn on the test fixture. • Connect the red wire of the DC 24V output to Pin 8 of the IGBT. • Connect the black wire of the DC 24V output to Pin 9 of the IGBT. • If the red LED lights up, it indicates the freewheeling diode between Pin 8 and Pin 9 is functioning correctly. • If the red LED does not light up, the freewheeling diode is damaged.	
IGBT Functionality Test between Pin 8 and Pin 9 • Connect the red wire to Pin 9 and the black wire to Pin 8. • The LED should remain off. • Rotate the T2 test button to the right until the green LED lights up. • If the red LED lights up (as shown in Figure 3.1), the IGBT between Pin 8 and Pin 9 is functioning correctly. • If ER2 lights up or the red LED does not light, the IGBT is damaged.	

Freewheeling Diode Test between Pin 8 and Pin 10 • Connect the red wire to Pin 10 and the black wire to Pin 8. • If the red LED lights up, the freewheeling diode between Pin 8 and Pin 10 is functioning properly. • If the LED does not light, the diode is damaged.	
IGBT Functionality Test between Pin 8 and Pin 10 • Connect the red wire to Pin 8 and the black wire to Pin 10. • The LED should remain off. • Rotate the T3 test button to the right until the green LED lights up. • If the red LED lights up, it indicates the IGBT between Pin 8 and Pin 10 is functioning correctly. • If ER3 lights up or the red LED does not turn on, the IGBT is faulty.	

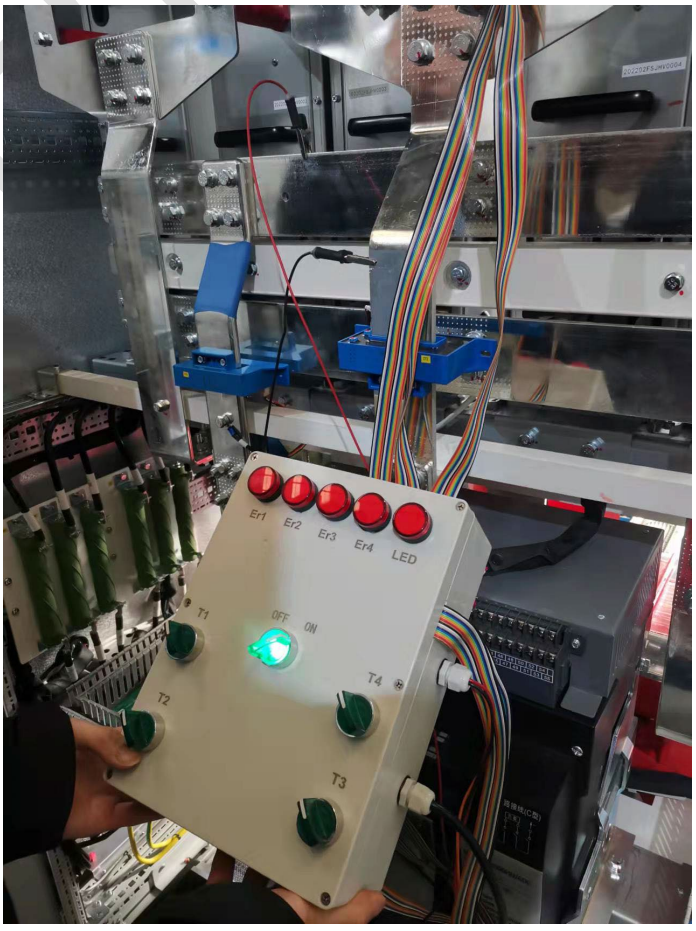
IGBT 模块测试

Connect the test fixture's driver ribbon cables to the driver adapter board in the order of 1/2/3. Then, connect the driver cables from the module under test to the driver adapter board in the same order: 1/2/3.



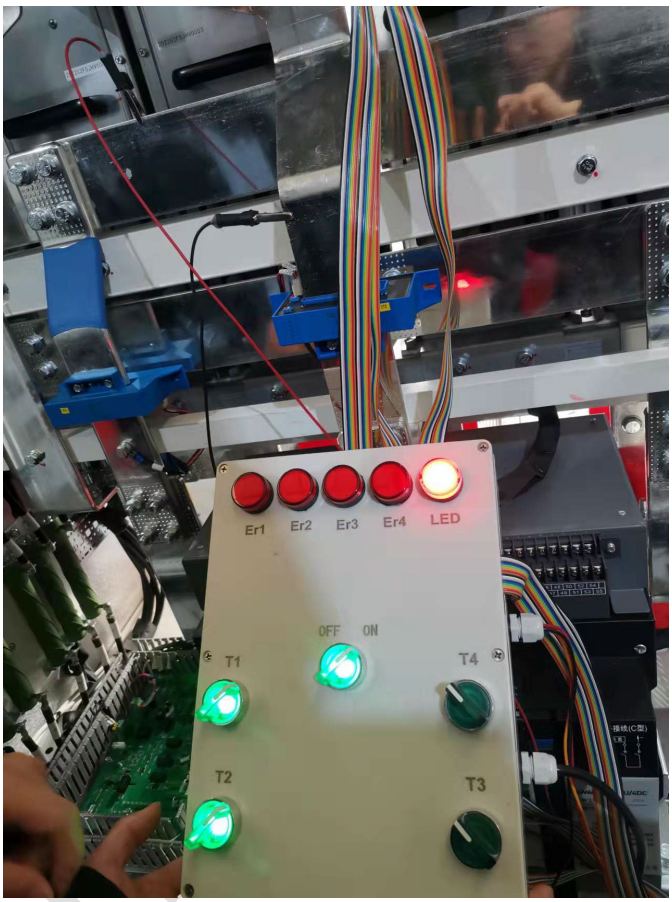
Note: If testing the IGBT module while it is still installed in the full system, make sure to **disconnect both the AC and DC power supplies** before testing. Also, ensure that the AC and DC voltages of the equipment have dropped to a **safe level (below 48V)** before proceeding with the module test.

Connect the test fixture to the module as follows:
Clamp the **positive terminal** of the test fixture to the **positive busbar** of the equipment, and the **negative terminal** to the **AC output of the IGBT module**. Then, clamp the **neutral wire** of the module to the **equipment's neutral line** (as shown in the diagram on the right).
Power on the test fixture and switch it on.
At this point, **ER1 - ER4 indicators and the LED should all remain off.**
If any of the **ER1 - ER4** indicators light up, it indicates a **fault in the IGBT driver board or the IGBT module itself.**

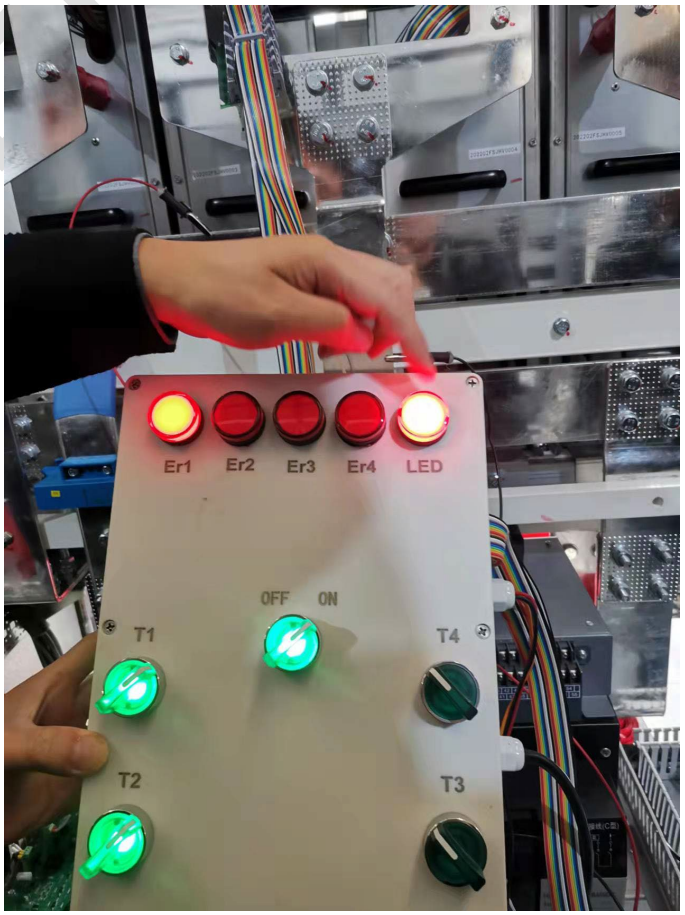


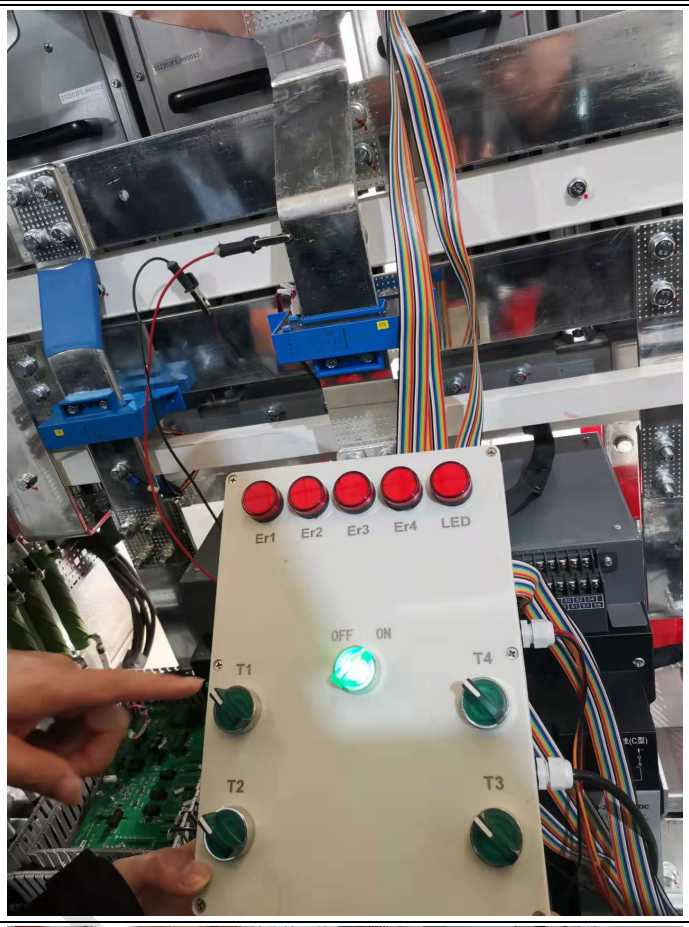
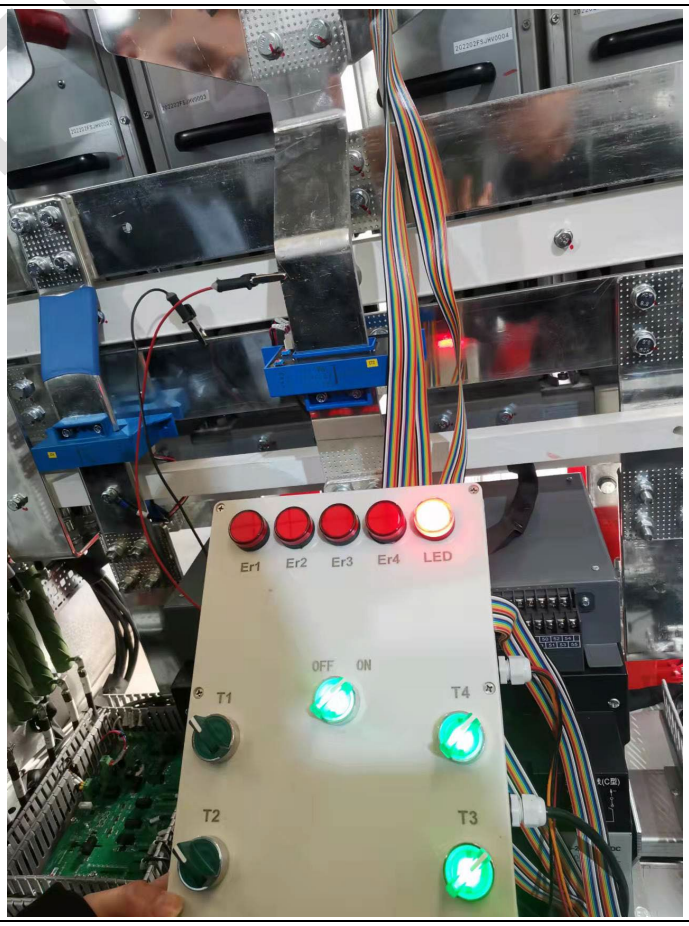
Turn the T1 and T2 test buttons on the test fixture clockwise.

At this point, the red LED on the test fixture should light up, and ER1 - ER4 indicators should remain off. This indicates that the T1 and T2 IGBT switches in the module are functioning normally.



If the LED does not light up or any of the ER1 - ER4 indicators turn on, it indicates that the T1/T2 IGBT switches in the module are damaged or the driver board is faulty.



Connect the test fixture to the module as follows: Clamp the **positive terminal** of the test fixture to the **AC output of the module**, and the **negative terminal** to the **negative busbar** of the equipment. Then, clamp the **neutral wire** of the module to the **equipment's neutral line** (as shown in the diagram on the right). Power on the test fixture and switch it on. At this point, the **ER1 - ER4 indicators and the LED should remain off.** If any of the **ER1 - ER4** indicators light up, it indicates a **fault in the IGBT driver board or the IGBT module.**	
Turn the T3 and T4 test buttons on the test fixture clockwise. At this point, the **red LED on the test fixture should light up**, and **ER1 - ER4 indicators should remain off.** This indicates that the **T3 and T4 IGBT switches in the module are functioning normally.**	

If the **LED does not light up** or any of the **ER1－ER4 indicators** turn on, it indicates that the **T3/T4 IGBT switches in the module are damaged** or the **driver board is faulty.**