Current Transformer

The current Transformer is used to step up or step down AC electric current for measurement and protection purposes.

Operation and Maintenance

1. Adopt Lifting tools with appropriate length to lift the Transformer. Fasten it firmly with mounting bracket.
2. Check for rust and oxidation on contacts surface of primary Winding terminals.
3. If primary serial/ parallel connection is required, the fixing mode of connection plate at P1/P2 side shall be changed according to the primary current.
4. Before connecting the secondary terminal, make sure that the system is not energized, and pay attention to free electromagnetic field caused by the nearby operating Electrical equipment. Check the schematic diagram of the Transformer nameplate or Instruction plate before connection. Secondary terminal is not allowed to be opened. Unused secondary terminal must be shorted. Secondary terminals must be grounded when the CT end plate screen is in normal Operation.
5. The Grounding terminal located under the base must be reliably connected to the ground grid of the power station. The ground wire should be able to withstand the system short circuit current on the nameplate of the Transformer.
6. Confirm the oil Level of the three phase Transformer is consistent. Check for oil leakage.
7. Check whether the protector (insulating paper, foam pad) in the product expander is removed. The oil level indication should be clearly visible. The oil Level height of the three phase Transformer should be consistent. The red mark line of the oil Level should be between MAX and MIN, and be clearly visible.
8. Check for oil stains on connecting positions and oil valve inlet.
9. There should be no distortion for the connection of the primary terminal, and the bolts in the primary series and parallel connection should be fastened and not discolored.
10. Check the insulator for damage, cracks, Serious oil stains, Electrical discharging trace and other abnormal conditions for the insulator skirt.
11. Test the temperature of the oil tank and primary terminal using infrared thermal imager during operation. The operating temperature of the three phase products in the same group should be the same and the temperature difference in the same group should be <= 4°C.
12. Clean the surface of porcelain bushing. Calibrate the creepage distance of porcelain bushing to meet the requirements of pollution level. Conduct antitrust treatment for oil tank and base. Clean the inside of the secondary terminal box, conductive junction and Insulation Resistance.
13. Adjust the oil Level in case of slight leakage of oil. Tighten the primary and secondary lead connectors. Check and tighten Grounding terminal connection and end plate screen terminal connection. Check for abnormal sound.
14. In case of current Ratio anomaly, the test cable on the primary terminal contact with product housing or bolts Results in short circuit of primary coil. The test cable should be connected with primary terminal. The primary series parallel connection should be correct. The wiring at the secondary terminals should be correct.
15. In case of abnormal noise in Operation, the secondary side is slightly open circuit. Check whether the wiring in the secondary terminal box or secondary common junction box is correct or loose. Check the console wiring for looseness. Check whether the secondary route is well insulated.
16. If the overall Capacitance of field test does not conform with the Report, the Insulation to ground must be missing. Put the insulation pad under the Transformer when testing Capacitance to ensure the Transformer is insulated to ground.

CVT

The Capacitor Voltage Divider is used to step down voltage using Capacitor Divider and electromagnetic Transformer unit. The sum of reactance of compensation Reactor and leakage reactance of Transformer have series resonance with equivalent capacitive resonance to eliminate the sudden change of capacitive resonance voltage drop caused by change of secondary load, making the voltage stabilized.

The CVT is of combined single column structure and is composed of capacitive voltage divider and electromagnetic Transformer unit. The Capacitor voltage Divider consists of one or several Capacitors in series, and the terminal is at the top of the capacitor voltage Divider. The middle voltage terminal A' and low voltage terminal N of the Transformer are connected to the corresponding A' and N terminals of the electromagnetic unit by the small porcelain bushing on the bottom cover of the lowest section.

The electromagnetic unit is composed of a medium voltage Transformer, a compensation reactor and a damping device for suppressing ferroresonance in the oil tank. The secondary Winding terminal and carrier communication terminal are led Out from the outgoing terminal box on the front of the oil tank.

The carrier integrated device is used for carrier communication. The communication terminal N of Transformer must be grounded through the carrier by combining with the equipment during carrier communication.

Maintenance items and cycle for CVT

1. Appearance Inspection: Check the Transformer, porcelain bushing surface, oil tank, installation support, ground, equalizer ring, mechanical/ Electrical connections, fuel tank, secondary terminal box, bolts, sealings, cable connection etc. Analyze infrared image of Transformer.