

Commissioning of HV Panel – Operational and Functional Checkup

Edvard



Commissioning of HV Panel - Operational and Functional Checkup (on photo Macmillan – New High Voltage Panel by Skilz Building Solutions)

Main Objective

The main objective of the test is **to check the proper operation function of the circuit breaker**; in this test we do the following:

A. Close Operation Test – Local—Remote

This test is conducted by manual, Local and Remote.

For the manual Operation test, we will charge the spring manual and breaker is also closed my manual and opening also done. For the Local operation we give Control supply and A.C supply for spring charge motor.

We close the Circuit Breaker using the **TNC (Trip Neutral Control)** switch.

We observe for the closing coil function and spring charging of motor operation. For remote operating is the site is ready (such as plc or BMS) then remote operation is done using the remote system.

If its site is not ready for this, we provide a local signal to the remote terminal and observe the operation of breaker.

B. Trip Operation Test – Local-Remote

This test is conducted by manual, Local and Remote. For the manual Operation test, The manually charged breaker is opened using the Trip switch.. For the Local operation we give Control supply and A.C supply for spring charge motor. We open the Breaker using the TNC switch.

We observe for the [tripping coil function](#). For remote operating is the site is ready (such as plc or BMS) then remote operation is done using the remote system.

If its site is not ready for this, we provide a local signal to the remote terminal and observe the operation of breaker.

C. Protection Trip

For this test the breaker has in closed position at initially. We provide an auxiliary rated voltage to Master trip relay, and observe ***the opening of the breaker and the position of the trip coil.***

[Top](#)

Functional Check

1. Emergency Trip

For this test the breaker has to be in charged or ON position, we operate the emergency push button. ***We observe the operation of circuit breaker opening.***

2. Aux. Switch Operation

When the breaker is in open condition we check the Aux. contact of the breaker using continuity tester, to conform the contact is in NO /NC. Then we close the Circuit Breaker and check the same contact with continuity tester, ***to conform the contact is in NC /NO.***

3. On-Off Indications (Lamp + Flag)

When the breaker is in open condition we check the ***Lamp + Flag of the relay.*** Then we close the Circuit Breaker and check the same Lamp operation.

4. Trip / Trip circuit healthy Lamp Indication

The relay is operated and we observer the Trip lamp indication.

5. Limit Switch for spring charge motor

On this test we observe the operation of the limit switch of the [spring charging motor](#).

We give an A.C power to motor and observe the operation of motor and charging of spring, on the indication of fully charged spring the motor operation has to get stopped.

6. Test / Service Limit Switch

This test is conducted to check the Test / Service Limit Switch Operation. During rack out the Breaker we observe the indicator to change to test position and during rack in the breaker we observe the indicator to change to service.

7. Operation Counter

This test is conducted if operational counter provision is available in breaker. We operated the breaker and look for the change in counter for counting the operation.

8. Heater / Heater Switch / Thermostat

The control A.C supply is given for heater and we look for heater operation.

9. Function of illumination and socket switch

In this test we look for the panel internal illumination and socket switch operation. We operate the limit switch manually and observe the operation of illumination circuit.

Reference: *Commissioning of HT electrical system – Sterling & Wilson Ltd.*

Source:

<http://electrical-engineering-portal.com/commissioning-of-hv-panel-operational-and-functional-checkup>