
Surge Comparison Tester

Model No. ST1709-0101



Synchro Electronics Surge Comparison Tester not only tests the ground insulation, but it also tests turn-to-turn, coil-to-coil, layer to layer, and phase-to-phase insulation more efficiently. In fact the surge test can detect the fault, even if a single turn is shorted. It can also find out the problems such as reverse or wrong internal connections, wrong turn counts and open coils.

HT TEST: This test is carried out to know the insulation quality between the coils or coil to body. High voltage is applied between coil to coil or coil to body for defined time, during that the leakage current is measured. The sample is declared as 'PASS' if the leakage current value is lower than the permitted (set) value; i.e. the sample withstood the voltage stress. Otherwise if the leakage current is more than the permitted value, the HT voltage trips automatically and the sample is declared as 'FAIL'.

SURGE TEST: This test is carried out to identify any insulation defect within the same coil. Two 'high voltage capacitor blocks' are charged with the 'set high dc voltage' and then applied to two identical coils simultaneously, one is UUT (Unit Under Test) the other is Reference (Master Unit). The discharging waveforms are compared and displayed on the inbuilt DSO. If the deviation is more than the permitted (set) value, the sample is declared as 'FAIL' and if the deviation is less than the permitted value, declared as 'PASS'.

The Surge Tester can be operated in two basic modes 'AUTO' or 'MANUAL'.

AUTO MODE: To start the test sequence in AUTO, Rotary Switch is set at AUTO position. The slider of the testing Jig is to be moved to the side where the sample is connected. Test will start automatically in the defined sequences (i.e. HT, A, B, C and D). If all individual tests are passed then machine will beep twice and PASS indicator will be glow. Otherwise if the machine detects failure in any sequence, the testing will stop at that same sequence and FAIL indicator will glow with continuous beep. The failed waveform is displayed on the DSO screen until the RESET button is pressed or the slider is moved towards center position.

MANUAL MODE: To start the test sequence in MANUAL Modes the Rotary Switch is to be moved to the desired test point, i.e. anyone of the position (HT / A / B / C / D). The slider of the testing Jig is to be moved to the side where the sample is connected and then the TEST switch has to be pressed to conduct the testing. The testing will be continued as long as the TEST switch is pressed. If the sample is OK then PASS indicator will be glow otherwise, if FAULT is detected in that sample then FAIL indicator will be glow with continuous beep.

Main Features of Comparison Surge Tester

100V – 3.4kV (Peak) Surge Testing
100V – 2.5kV (RMS) HT Testing
Open, Short, Reverse with Single turn short detection capability
Auto/Manual Test mode

Dual station jig, L/R, to save time
Designed with safety features
Very fast operation, 0.6 second per step
Suitable for high speed production lines

Standard Accessories:

EHT cable leads for connecting surge outputs
Power input cable with 5A plug
Dual station jig

Optional Accessories:

On-Line UPS for low distortion and tight voltage control
Battery Simulator for On-Line UPS

Application:

The Surge Comparison Tester is useful for conducting Surge Test on:

1 ϕ & 3 ϕ windings
AC, DC motors
Stators

Solenoids & Chokes
LT coils
Transformer coils

Technical Specification:

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A. Surge Test Section:

Surge Test Voltage: 100V to 3.4kV (Peak)
Maximum Surge Test Energy: 0.0675 J
PASS/FAIL decision with Reference coil
Four testing modes: A,B,C,D (Starting & Running coil in forward & reverse)
Sensitivity Adjustment for better discrimination

Automatic Test Sequence – HT- 1sec, A, B, C, D, in steps, each for 0.6 sec.
Digital Surge Test Voltage Display on Screen
Monitoring of both reference and test waveforms in different colours through inbuilt DSO

B. HT Section

Test Voltage Setting: 100V to 2.5kV (RMS)
Trip Current Adjust: 0.5mA to 30mA

Digital Display of HT test voltage (RMS)
Digital display of Leakage Current

C. Left/Right Operation, with Safety Switch

D. Standard Test Jig

E. Input Power: 230V \pm 5% AC (230V \pm 1% AC for best accuracy)

F. Dimension: 485 x 315 x 550mm

G. Weight: 22kg (approx)

For any further query please contact:



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