

Three-Phase Surge Tester

ST-T Series

ST-T is an instrument designed for testing coil-type products such as transformers, motors, switches, generators, and inductors. It is capable of performing inter-turn short circuit detection to assess the self-insulation performance of the coil itself, identifying potential shortcomings in self-insulation caused by various factors during the manufacturing process.

ST-T features a unique ideal waveform display, enabling developers to gain a better understanding of the coil's characteristics. Moreover, it can measure inductance values during high-voltage testing, addressing the limitations of conventional inductance testers which can only operate at low voltages and require input frequencies.

Due to its utilization of instantaneous pulse characteristics for testing, the surge tester releases energy at extremely low levels, making it a form of non-destructive testing.

Built-in three switching to achieve comprehensive testing and evaluation of three-phase motors. Users only need to execute a single operation to complete a comprehensive comparative test of three-phase motors, saving time and effort. Additionally, other models are available to support multi-port output, allowing for integration with other external instruments.

Features

- Inductance range is above 10μH.
- Programmable pulse test voltage range, ranging from 200V to 10,000V depending on the model, employing non-destructive testing, without damaging the coil.
- Capable of testing partial discharge.
- Six discrimination criteria for comparison: area and comparison, area difference comparison, corona discharge amount, corona discharge count, inductance value percentage error comparison, and corona discharge waveform detection.
- Functionality for calculating and displaying ideal coil waveforms.
- Display of reference waveform, test waveform, and corona discharge waveform.
- Precise voltage measurement settings to enhance analysis sensitivity.
- Pass/Fail results displayed directly on the screen for easy, concise judgment.
- Measurement functions for voltage, frequency, time, etc., with data available for backend analysis and research.
- Internal storage for 20 sets of sample waveforms, with additional waveform storage via external USB (waveform capacity 4.2KB).
- 7-inch touchscreen human-machine interface selection form for easy operation.
- Equipped with RS-232, TCP/IP transmission interfaces for connection to PCs, facilitating data transmission and program writing to establish the required testing system.
- Equipped with external I/O via D-Sub 15PIN Connector for connection, allowing operators to link with in-house automatic or semi-automatic testing platforms.
- Suitable for electric vehicle motor testing, with a dedicated TPM mode for three-phase motors enabling self-comparison without samples.
- Can display the inductance value of the measured coil, and input inductance value for displaying ideal waveforms.
- One-click continuous discharge function.
- One-click automatic search for optimal DIV range function, with suggested range prompts.
- Capable of short circuit, leakage, and maximum voltage testing.



TPM-Three-Phase Motor Mode

1. Value : Text Display Result

From left to right, it displays the comparison results between T1 and T2, T2 and T3, and T3 and T1, respectively. Each section shows the following: A: area sum, D: area difference, N: corona discharge count, S: corona discharge level, L: inductance percentage error, P: corona discharge waveform detection, both inductance values, and the comparison result of the section.



If the results of each item fall within the threshold range, the text will be displayed in black, and the section background color will be green, indicating a pass. If the results exceed the threshold range, the text will be displayed in yellow, and the section background color will be red, indicating a fail.

2. Waveform : Graph Display Result

The screen will simultaneously display the waveform results and corona discharge results of T1, T2, and T3. T1 is represented by green, T2 by cyan, and T3 by magenta. By using the touchscreen cursor or shuttle keys, you can view the parameter values of specified points in the waveform.



The overall comparison result will be displayed in the bottom right corner of the screen, showing a green PASS if the comparison is successful, or a red FAIL if it is unsuccessful.

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Specifications

Model	ST-T-6K	ST-T-10K
Test Voltage	200V ~ 6,000V ($\pm 3\% \pm 10V$), 100V step	500V ~ 10,000V ($\pm 5\% \pm 20V$), 100V step
Output energy	0.4J (Max)	1.1J (Max)
Sampling Rate	600 × 12bits /5ns (200MHz)	
Input Resistance	10M Ω	
Display	800 x 480, 7" touch TFT-LCD	
Waveform Types	Reference waveform , Test waveform , Corona discharge waveform	
Waveform type and measurement	Area Size Comparison (AREA) , DiffZone Comparison, (DIF) Comparison Corona Number Comparison (CORON) , Corona Amount (COROS) Lenz Percent Error (LPE) , Corona Discharge Current Pulse (CDCP)	
Judgement Modes	[Test] Coil Mode、 [TPM] Three-Phase Motor Mode	
Storage Waveforms	Interanl 20 sets, external USB availabe for CSV format	
Comparison Output	Pass/Fail display , Buzzer	
Communication	RS-232, I/O, TCP/IP	
Operation Temperature	0°C ~ 40°C (32°F ~104°F)	
Voltage , Frequency	AC100V~240V,50/60 Hz	
DimensionL*W*H	340 × 328.4 × 270 mm	
Weight	14Kg	
Application	Electric vehicle motor power inductors, power chokes, transformers, inductors, coils, winding product manufacturers, winding component IQC	
Standard Accessories	Main unit x1,High voltage test line x3 ,AC power cord x1	
Optional Accessories	RS-232 to USB cable x1,Ethernet cable x1 ,foot switch x1	

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