

JABBALS

10KV, 12 KV & 15KV Surge Comparison Tester with DC Hi-Pot Test

Model 7010KHP, 7012KHP & 7015KHP

The latest Surge Comparison Tester is advanced and a comprehensive electrical winding tester for HT Motors.



Surge Test With High Pulse Energy

The Latest 7000 Series Surge Tester has added a new dimension to the testing of Insulation strength of large electric motors.

This Surge tester has high pulse energy that is required to test large electrical windings with low impedance and high capacitance. This Surge Tester is highly reliable, accurate and cost-effective. It is extremely versatile and a valuable tool to test the motors in the motor shop or field. As with a new enhanced feature of DSO interface it can easily store the test results that can be printed when required. This Tester has been widely appreciated by motor manufacturers and re-winders worldwide and has immensely improved the quality of the HT motors in the industry.

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Principle of Surge Comparison Tester

The Surge Comparison tester checks the strength of ground insulation that consists of enameled insulation. It detects the insulation failures such as turn-to-turn shorts, layer-to-layer shorts, coil-to-coil shorts, winding-to-winding shorts, and phase-to-phase shorts. Open circuit and ground detection are other benefits of surge testing.

The Surge tester uses the principle of impedance balance to test the quality of electrical windings. The Surge tester works as a capacitive-discharge system. A capacitor is charged with high voltage and then discharged into the winding, through a solid state assembly. This sequence is repeated thus stressing the insulation of the winding with high voltage pulses.

The resulting voltage decay pattern of two winding is then displayed on the CRT. The waveform pattern will be perfectly superimposed for good windings but in case of a defective winding a double wave pattern will appear on the screen as one wave pattern from the good winding plus the erratic pattern from the faulty winding.

$$\text{Surge Test Voltage} = \sqrt{2} \times (2 \times E + 1000)$$

where E is the operating voltage of the rotating machine

DC High Potential (Hi-Pot)

The DC Hi-Pot test checks the strength of ground insulation. This test is conducted at high voltages to measure the overall insulation dielectric strength. The DC high voltage is uniformly applied between the winding and ground. The leakage current, in micro amperes is displayed on 3½ digital displays. The test stops automatically if the leakage current goes over the trip level.

$$\text{DC Hi-Pot Test Voltage to be applied} = (2 \times E + 1000)$$

where E is the operating voltage of the rotating machine

Benefits

- User friendly front panel controls
- Zero state lock for operator safety
- Footswitch for hands free operation
- Highly sensitive fault detection capability - It detects even a single turn short in the coil
- Test leads insulated to 45KV rating
- Leads energized warning indicator
- Bright sharp CRT display to analyze the faults easily
- 1phase/3phase Test Select Switch
- 3½ Digits LED Display for DC Hi-Pot test voltage and Leakage current
- Leakage current trip indicator and buzzer

Applications

This tester has both high voltage and high pulse current that is required to test large AC and DC motors with low impedance and high capacitance. This tester is widely used in the motor shop and field to test the following :

- 1φ & 3φ windings
- LT,HT coils
- AC,DC motors
- Stators
- Transformer coils
- Solenoids & Chokes

Optional Features

- Open Input source Ground indicator
- PC Compatible to store, recall & print waveforms

| Test Specifications | 7010 KHP | 7012KHP | 7015KHP |
|-----------------------------|--|--|--|
| SURGE TEST | | | |
| Max Surge Voltage | 10,000V | 12,000V | 15,000V |
| Max Pulse Current | 660A | 800A | 1000A |
| Max Pulse Energy | 5.0J | 5.88J | 11.3J |
| Display | CRT (100x80mm) | CRT (100x80mm) | CRT (100x80mm) |
| CRT Vertical Sensitivity | ■ 500 V/DIV ■ 2000V/DIV ■ 1000V/DIV ■ 4000V/DIV | ■ 500 V/DIV ■ 2000V/DIV ■ 1000V/DIV ■ 4000V/DIV | ■ 500 V/DIV ■ 2000V/DIV ■ 1000V/DIV ■ 4000V/DIV |
| Sweep | Variable | Variable | Variable |
| Surge Frequency | 50Hz ± 3% | 50Hz ± 3% | 50Hz ± 3% |
| DC Hi-POT TEST | | | |
| Max Output Voltage | 10,000V | 12,000V | 15,000V |
| Max Leakage Current | 2000 micro amps | 2000 micro amps | 2000 micro amps |
| Max Trip Current | 2000 micro amps | 2000 micro amps | 2000 micro amps |
| Display | 3½ digital display | 3½ digital display | 3½ digital display |
| Operating Voltage | 230V ± 10% | 230V ± 10% | 230V ± 10% |
| Power Consumption | 300W | 330W | 400W |
| Weight | 70lbs | 70lbs | 70lbs |
| Physical Dimensions (WXHxD) | 440 X 290 X 530 (mm) | 440 X 290 X 530 (mm) | 440 X 290 X 530 (mm) |

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Plot No. 20A/14-15 Industrial Area, N.I.T Faridabad -121001, INDIA
Phone: +91 129 4021189, 4021190 • FAX: +91 129 2233295 • Email: jabbals2000@yahoo.com

