

>368,688789 12437,23 2933 977 56-203 55549<
>163,65546 67810,7 23867 911 56-203 88849<
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>458,11142 83417,73-2037 876 56-203 83339<
>145,523286 64486,22 2889 986 56-203 88849<
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DATA SHEET

MODEL 7010A



High Voltage Capacitance Bridge

- Automatic Balancing
- Current Comparator Technology
- 3-4 Terminal Measurements
- Lead Compensation Circuit
- Overall Accuracy 20 ppm
- Range Extension Option with 7020H
- Capacitance & Tan Delta

MODEL INFORMATION

The Model 7010A is a series of microprocessor controlled, metrology based, high voltage capacitance bridge. Its operation is fully automatic. A large vacuum florescent display presents relevant measuring quantities such as capacitance (Cx) and dissipation factor (Tanδ). Easy to use front panel keyboard menus allow the operator to select the number of readings for statistical analysis of uncertainty calculations at 95% (2 Sigma) level. All measured parameters can be transmitted over the IEEE 488 interface for storage to a computer.

The Model 7010A is a capacitance bridge with a ratio of 100:1. The minimum voltage level is 300 volts. The automatic self-balancing feature facilitates the use of the bridge for accurate load loss measurements of large high voltage inductive loads. The Model 7010A may also be used for calibration of precision standard capacitors, precision potential transformers and performing tan-delta measurements. Overall accuracy is <10 PPM in magnitude and phase.

The technology is based on the two-stage-current-comparator-principle. The 7010A has a capacitance ratio up to 100:1 and a dissipation (loss tangent) of 0 to 10% with a resolution of 1 ppm. To accommodate capacitance ratios larger than 100:1 an additional two stage range extender, Model 7020H, may be added to increase the ratio to 100,000:1. All connections are made on the rear of the instrument. The Model 7010A is fully protected against transients.

Elimination of the effect of lead and winding impedance's on the measurement accuracy has been reduced by means of a built-in lead compensation circuit.



Applications:

Shunt Reactor Loss Measurements	Power Transformer Measurements
Calibration of Potential Transformers	Calibration of Low Voltage Standard Capacitors
Calibration of High Voltage Dividers	Calibration of High Voltage Power Capacitors
Inductance Measurements	Measurement of Low Loss, High Voltage Power
Loss Tangent Measurements to 10%	Corona Loss Measurements
Insulator and Dielectric Testing	

Specifications:

Capacitance Range	Cs: 10 pF to 10,000 pF Cx: 10 pF to 1,000,000 pF (1uF)
Capacitive Ratio 1:1 to 100:1	Ns: 0 to 1.11110 in steps of 0.000001 Nx: 1 to 100 in steps of 1, 2, 5, 20, 50, 100
Primary Current	1 Amp Maximum
Secondary (Cs) Current Range	5uA to 10mA
Dissipation Factor Range	0 to 10% in steps of 0.000001
Inductance Range	7H to 700000H (Q factor > 10)
Test Frequencies	50 and 60 Hz
Accuracy	Ratio: ± 10 ppm for all Cx Ratios
Loss Angle	±1% of Reading ±10 ppm
Display	Large Vacuum Florescent
Reading Update	1 Second
Warm Up Time	< 5 Minutes to Full Rated Accuracy
Operating Environment	18 to 34°C, 10 to 80% RH
Operating Power	100, 120, 220, 240V - 50/60 Hz
Product Details	
Dimensions:	545 x 435 x 221 mm
Weight:	22 kg
Shipping Weight:	30 kg
Warranty	1 Year Parts & Labor

Revision 1

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