

**C and tan δ Meter for Insulation Materials
Model DAC-IM-D6**

tan δ Calibrator Model DAC-Cs-100A

DAC-Cs-100A incorporates a reference capacitor for calibration of DAC-IM-D6 for measurement of tan δ

- Integrated reference capacitor: Gas filled capacitor of 100 pF
- Test voltage: Max. AC 2000 V
- tan δ calibration value: 0 to 8.0% at 50 Hz/0 to 9.6% at 60 Hz
- Dimensions & Weight: W160 × H180 × D260 (mm), Approx. 4 kg

	50Hz	60Hz
1	0.0000 %	0.0000 %
2	0.0020 %	0.0024 %
3	0.0080 %	0.0096 %
4	0.0800 %	0.0960 %
5	0.800 %	0.960 %
6	8.00 %	9.60 %



Electrode Heaters DAC-OBH Series

The DAC-OBH series provides a heater, High Purity Aluminum ware, for liquid electrodes (DAC-OBE-2) without use of thermal oil.

The uniform heat conductivity eliminates possible changes in temperature between electrodes.

Combining a controller, Nominal temperatures are maintained within ±1°C, ensuring conformity to JIS C2101.

- No thermal oil is required.
- splash-free and vaporization-free air pollution-free measurement
- Quick clean-up after use
- Eliminated local heating, Heat is distributed evenly.

Model	DAC-OBH-1	DAC-OBH-2	DAC-OBH-4
Number of electrodes	1	2	4
Allowable maximum setting temperature	Max. 100°C (Setting temp.±1°C)		
Input power	AC 100 V/200 V 50 Hz/60 Hz		
Power consumption	500 W	800 W	1500 W
Dimensions (mm)	W190*D190*H160	W360*D190*H160	W360*D360*H160
Weight (kg)	5	9	18
Controller	Dimensions: W210*D292*H250 (mm) Weight: 3.5 kg		



C and tan δ Meter for Insulation Materials

DAC-IM-D6



The set, DAC-IM-D6, measures capacitance and the dielectric loss tangent (tan δ) of electrical insulating materials with a resolution of 1 ppm (1 × 10⁻⁶).

It allows measurement of tan δ of liquid, film, paper, electric tape, insulating plate and other items with use of liquid, sheet or other appropriate electrodes for the sample materials under test in accordance with the IEC (60250, 60247, 60554-2) and JIS (C2101) Standards.

The set also allows measurement of capacitance simultaneously with tan δ and thus, it provides dielectric constant measurements of materials.

Test Materials: Electrical insulating oil, electrical insulating (ceramic, polymeric) materials, and other dielectric materials

- Features:**
- Best resolution for measurement of tan δ: 0.0001% (1 ppm)
 - Output voltage source, built-in power supply for testing:
AC 200 V to 2200 V (50/60 Hz)
 - Shows dielectric constant data available from capacitance measurements
 - Auto-range provided for capacitance and tan δ measurements with automatic step-up of voltages
 - USB interface provided as standard equipment



Head Office & Plants
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C and tan δ Meter for Insulation Materials Model DAC-IM-6

The set, DAC-IM-D6, is a measurement instrument developed for testing electrical characteristics of electrical insulating materials.

It also serves as testing equipment in the development of new and composite materials not only in testing in accordance with the JIS (C2101) and IEC (60247, 60554-2) standards. Recently, electrical insulating materials are required to offer increasingly higher dielectric strengths in which case, conventional testing methods with lower voltages may fail to provide accurate evaluation of insulating materials. DAC-IM-D6 is designed to provide testing at voltages of up to 2000V, allowing measurement of tan δ and capacitance with the actual voltages applied to samples, which helps identify the actual electrical characteristics.

It is designed to allow repeated measurement through simple operating steps, allowing simultaneous determination of the dielectric constant. In addition, the USB interface equipped as standard equipment allows data collection from external PCs.



Specifications

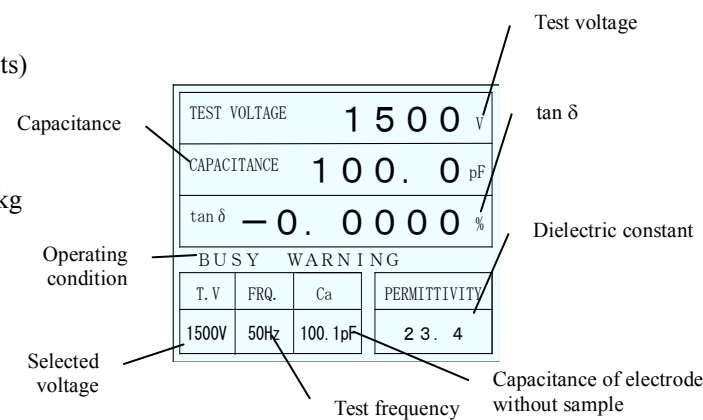
- Test voltage: AC 200 V to 2000 V
- Frequency: 50/60 Hz
- Test range:

Capacitance	20 pF to 1000 pF/2-range (Auto-range)
tan δ	0 to 50%/4-range/(Auto/Manual range)
Dielectric constant	1 to 50
- Minimum resolution:

Capacitance	0.1 pF
tan δ	0.0001% (1 ppm)
Dielectric constant	0.01
- Accuracy of measurement:

Test voltage	±(0.5% rdg + 2 digits)
Capacitance	±(0.5% rdg + 2 digits)
tan δ	±(0.001% + 1% rdg + 2 digits)
Dielectric constant	±1% rdg
- Interface: USB
- Power supply: AC 100 to 240 V ±10%, 50/60 Hz
- Dimensions & Weight: W430 × H200 × D380 (mm) Approx. 15 kg
- Accessories:
 - 1) Measuring cable (with Connector/Clip) 1 set
 - 2) AC Power cable 1
 - 3) Ground wire 1
 - 4) Storage bag 1

LCD Panel



Liquid Electrode Model DAC-OBE-2

An electrode, DAC-OBE-2, for testing electrical insulating oil and other liquid insulating materials in accordance with the JIS (C2101) standard.

It is applicable to dielectric loss tangent tests and volume resistivity tests.

- Electrode spacing: 1 mm±0.1 mm
- Electrode area: 100 cm²
- Electrode constant: 1000±50 cm
- Capacitance: 88.5 pF±5 pF
- Sample volume used: 50 cc
- Dimensions & Weight: 89.5φ × 105 (mm) Approx. 1.3 kg



Electrical Insulating Materials Electrode, Model DAC-OBE-7

An electrode, DAC-OBE-7, for measuring the dielectric constant and the dielectric loss tangent of insulating paper, film and other insulating materials in accordance with JIS standard (C2111). The electrode is equipped with a cylinder to reserve insulating oil, and designed to withstand temperatures of up to 100°C.

- Electrode:

Main electrode	65.5φ
Guard electrode	66φ
High-voltage electrode	84φ
Material	Stainless steel
- Test voltage:

Max. 10 kV	
<1kV:	No insulating oil is necessary.
1kV<.. <lt;5kv:< td=""> <td>Fill insulating oil in the cylinder.</td> </lt;5kv:<>	Fill insulating oil in the cylinder.
5kV.<10kV:	Fill insulating oil in the cylinder and submerge the electrode entirely in oil bath.
- Test temperature: Max. 100°C
- Cylinder Capacity: Approx. 350 cc



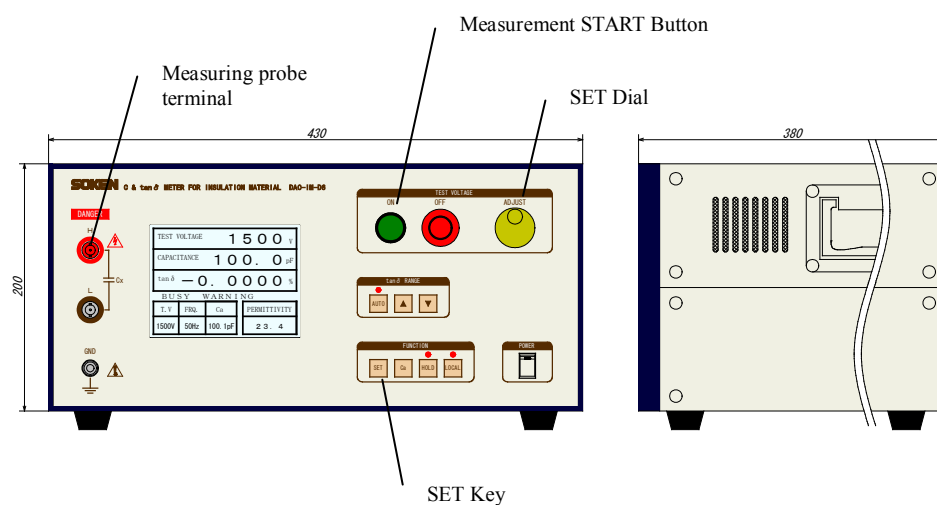
Sheet Electrode Box Model DAC-OBE-8

- Electrode:

Main electrode	78φ
Guard electrode	80φ
High-voltage electrode	100φ
Material	Stainless steel
- Test voltage: Max. 1 kV



Outline Drawing & Dimensions



Using the SET key

The SET key allows setting of the following three parameters.

- Test voltage (0 to 2000 V)
- Test frequency (50/60 Hz)
- Electrode without sample (20 to 1000 pF)

Press the **SET** key, select a parameter among those listed above and then, turn the SET dial to enter a value for the parameter.