

PRECISION C & TAN δ METER

DAC-PSC-UA



DAC-PSC-UA is a high precision measuring instrument having minimum resolution 0.0001% in $\tan\delta$. By selecting a standard capacitor, capacitance range from small to large and voltage range from low to ultra-high are available. The measuring range can be expanded further by using an expanding CT (model DAC-CT-1, CT-2 or CT-10) with the meter. DAC-PSC-UA can measure small dielectric losses of specimens at high voltage, and applicable to tests for high voltage cables, insulation materials and bushings, etc. The meter will provide great help to research and development of dielectrics and insulation materials.

Application

- High-Voltage Cable
- Capacitors
- Insulation Materials

Features

- Precise measurement of Capacitance and $\tan\delta$.
- Wide measurement range:

Capacitance	50pF - 1 μ F* (*1000 μ F when with expanding CT 100:1, Cs 10000pF range)
Testing Voltage	AC 3kV - 600kV
- Minimum Resolution of $\tan\delta$: 1 $\times 10^{-6}$ (1ppm)

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Specifications

1) Measuring Ranges

		Standard Capacitor (Option) *4			
		50pF	100pF	1000pF	10000pF
Testing Voltage *1		6kV – 600kV	3kV – 300kV	0.3kV – 30kV	30V – 3000V
accuracy guarantee voltage	tan δ range 10%	6kV – 600kV	3kV – 300kV	0.3kV – 30kV	30V – 3000V
	tan δ range 0.2, 2%	60kV – 600kV	30kV – 300kV	3kV – 30kV	300V – 3000V
Capacitance*2		50pF – 50nF	100pF – 100nF	1000pF – 1 μ F	0.01 μ F–10 μ F
with CT-1 (100:1)*3		5nF - 5 μ F	10nF - 10 μ F	100nF - 100 μ F	1 μ F - 1000 μ F
with CT-2 (200:1)*3		10nF - 10 μ F	20nF - 20 μ F	200nF - 200 μ F	2 μ F - 2000 μ F
with CT-10 (1000:1)*3		50nF - 50 μ F	100nF - 100 μ F	1 μ F - 1000 μ F	10 μ F - 10000 μ F
tan δ		0 - 10% (3 ranges, 0-0.2%, 0-2%, 0-10%)			

*1: 50/60Hz

*2: Capacitance ranges are subject to be limited by measurable current capacity 8A.

*3: Max Current of Expanding CT is 400A.

*4: Standard capacitors are not included.

3 kinds of standard capacitor can be registered in the meter. (Specify before shipment.)

2) Minimum Resolution:

Capacitance: 0.01pF 6 digits.
Tan δ : 0.0001%(1ppm) 4 digits

3) Measurement Accuracy

Capacitance: $\pm(0.1\%rdg+2digits)$
Tan δ : $\pm(0.003\%+1\%rdg+2digits)$

4) Interface: USB (2.0/1.1, B type connector) and GP-IB

5) AC source: AC100V~240V \pm 10% 50/60Hz

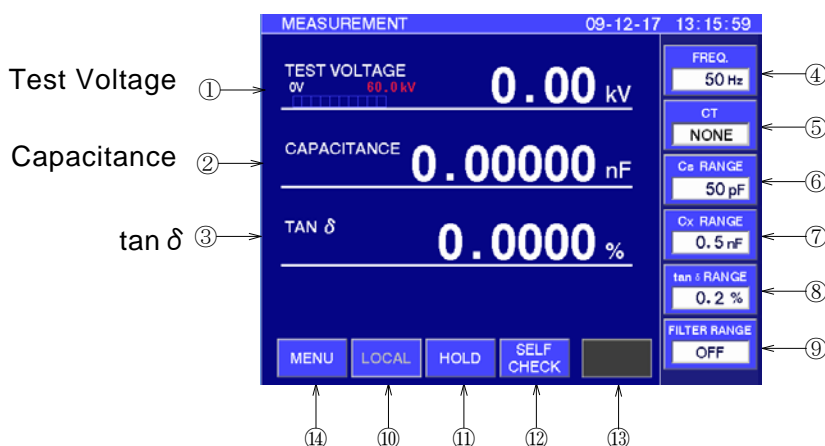
6) Size and Weight: W430xH250xD450 (mm) approx. 25kg

7) Environment:

Operating: 15 - 35 degree C
Storage: 0 - 40 Degree C
Humidity: less than 80%, no dew.

8) Accessory: Cs Connecting Cable (3M) x1, Cx Connecting Cable (3M) x1, AC code x1, Grounding cable x1, Accessory bag x1, Sample software

LCD Display



4. Frequency

5. Condition of Extension CT

6. Cs value

7. Cx range

8. tan δ range

9. Filter

10. LOCAL or REMOTE

11. Hold the values

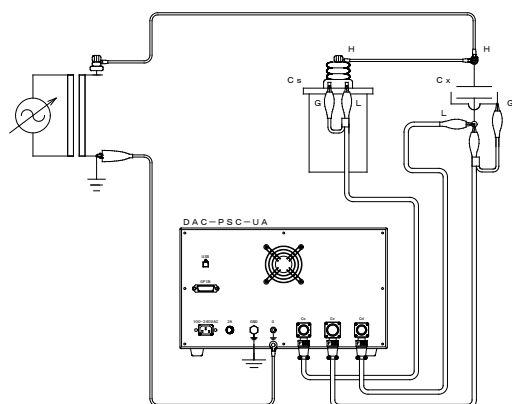
12. Self Check

13. Work lamp

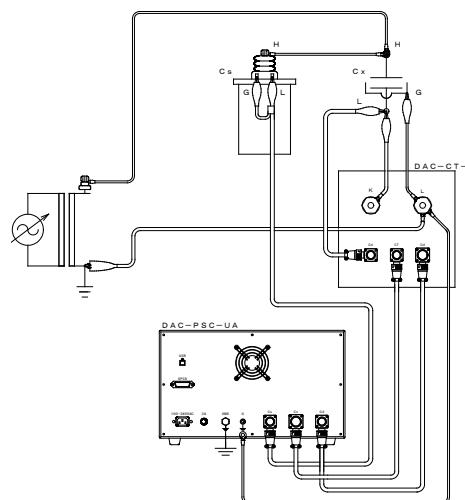
14. Menu button

Connecting Diagrams

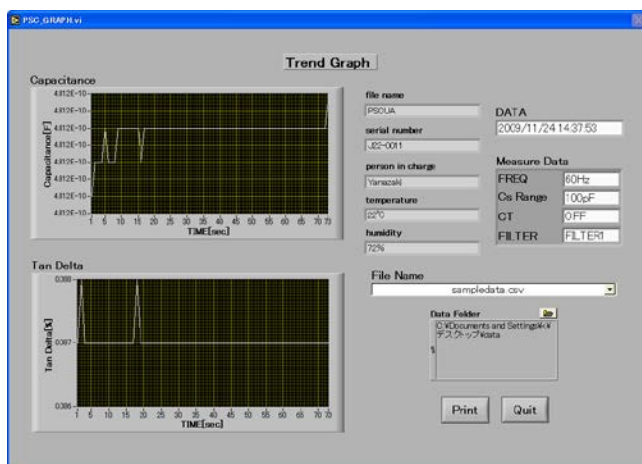
Measurement without expanding CT



Measurement with expanding CT



Software



- Data acquisition is available with a sample program through USB interface. The program comes as standard accessory.
- Remote execution from a PC is possible by setting Test Frequency, Cs, Cx range, tan δ range into the PC previously.
- The measuring date of tan δ and capacitance are graph out in a display, and those data in a txt format can be saved in an optional folder.

Option Accessories

■ EXPANDING CURRENT TRANSFORMER Model DAC-CT-1 / DAC-CT-2 / DAC-CT-10

Measuring Capacitance range can be expanded by 100 times with DAC-CT-1, 200 times with DAC-CT-2 and 1000 times with DAC-CT-10.



Model	DAC-CT-1	DAC-CT-2	DAC-CT-10
Primary Current	Max 400A	Max 400A	Max 400A
Class	0.1	0.1	0.1
Current Ratio	100:0	200:1	1000:1
Size	W270xH365xD270 (mm)		
Weight	Approx. 7kg		

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Option Standard Capacitors

DAC-Cs-101A and DAC-Cs-102A are three-terminal capacitors filled with SF6 gas, and suitable to use as the standards of capacitance & tan δ for dielectric loss tangent tests.

Those can be used as a capacitive divider and a coupling capacitor as well.

■ Model DAC-Cs-101A

Specification

Rated Voltage	: AC40kV 50/60Hz
Nominal Capacitance	: 100pF \pm 1%
tan δ	: <0.001%
Filled Gas	: SF6 gas 0.5Mpa(20°C)
Size and Weight	: W428xH812(mm) Approx.45kg



■ Model DAC-Cs-102A

Specification

Rated Voltage	: AC20kV 50/60Hz
Nominal Capacitance	: 1000pF \pm 1%
tan δ	: <0.001%
Filled Gas	: SF6 gas 0.2Mpa(20°C)
Size and Weight	: W315xH708(mm) Approx. 31kg



■ Model DAC-Cs-103B

DAC-Cs-103B is a 10000pF standard capacitor for dielectric loss tangent tests.

Introducing an electric controlled current feed-forward compensation method, it became possible to multiply a 1000pF high-accuracy air capacitor as the standard.

DAC-Cs-103B is a very stable standard capacitor with tan δ less than 0.002%.

Specification

Max Voltage	: AC1000V
Nominal Capacitance	: 10000pF
tan δ	: >0.002%
Size and Weight	: W280xH320xD280 (mm) Approx 15kg
Driving power source	: AC100V 50/60Hz



Specifications are subject to be changed without prior notice.

2016/03/24