

PARTIAL DISCHARGE TESTER DAC - PD - 7



02

All functions of partial discharge measurement are introduced to simplify partial discharge measurement.

“Certainty” was pursued in “uncertain” partial discharge measurement, and quantitative measurement has become possible!

New proposal for partial discharge measurement

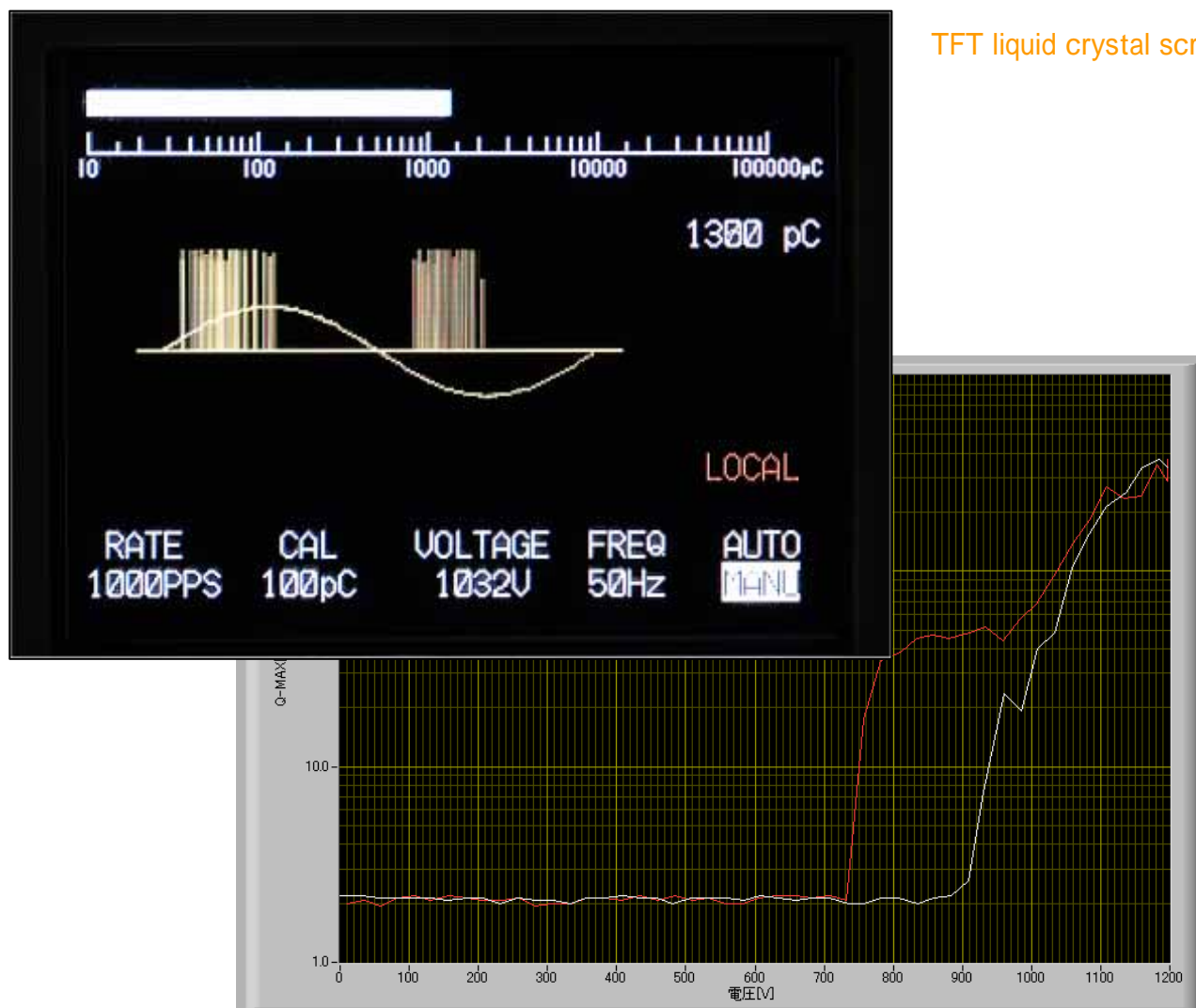
Conventional partial discharge measurement sets required coupling capacitors, detectors and calibrators beside the set itself, and a special high voltage power source was also necessary.

Measurement was complicated, and special care was needed.

In addition, partial discharge is very unstable and weak, and was strongly influenced by measurement environment, thus evaluation was very difficult.

Partial discharge measurement, which is a nondestructive means of testing, is a very good measurement method to grasp phenomena preceding insulation breakdown, but for the above reasons, was considered to be an unreliable and difficult to handle method.

DAC-PD-7 removed as many difficulties of partial discharge measurement and unreliabilities in the measurement results as possible, and realized easy partial discharge measurement.



TFT liquid crystal screen

Features

- The tester contains 3000V high voltage source, coupling capacitor, detector and calibrator.
- There is no need for cumbersome wiring. Just connect lead wires and measure right away.
- The calibration is automatically done while voltage is being applied.
- Automatic gain adjustment happens in designated intervals, so there is no need to switch measurement ranges.
- Measurement of a maximum discharge pulse Q-max is possible in each cycle.
- Measurement can be conducted while observing discharge wave shape. The applied voltage profile can be observed simultaneously.
- USB interface is attached. Automatic measurement with attached software is possible.

Measurement targets

Best for partial discharge measurement on small motors, relays, printed circuit boards, power semiconductors, high frequency transformers, insulating materials, etc.

What is partial discharge?

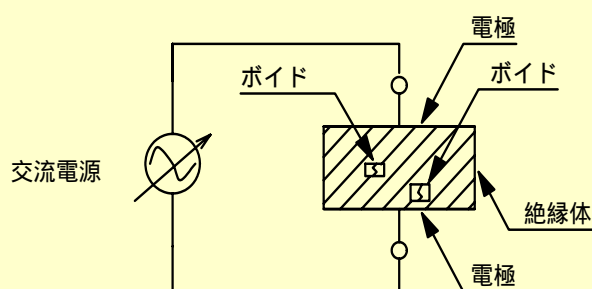
In insulators, there are voids (impurities) like air bubbles and impurities.

Insulators and voids have different dielectric constants, therefore when an alternating current is applied to this insulator, voltage applied to voids (impurities) become larger than on perfect insulators.

In general, dielectric constant of voids (impurities) is lower than insulators, thus voltage applied to voids (impurities) becomes higher and the voids (impurities) shorts.

However, the insulator itself does not short.

Partial shortening of voids (impurities) lead to small movement in charges, and this is called local discharge or partial discharge.



Points

- 1 Partial discharge in insulators occurs in voids (impurities) with low insulating strength.
- 2 Dielectric constant of impurities and voids are lower than that of good insulators around it, so the electric field concentrates on the impurity, and local insulator breakdown becomes easier to happen.
- 3 The insulator strength of voids depend on the type of gas in the void, gas pressure and void dimension.
- 5 Partial discharge precedes insulator breakdown.

Specification

Power Unit

Input Voltage	AC100V \pm 10% 50/60Hz
Output Voltage	AC 0 ~ 3000V
Voltage Increase Rate	25V/S, 50V/S
Partial discharge in device	<1pC at AC3000V
Frequency	50Hz, 60Hz
Wave Shape	Sine wave (does not depend on wave shape of Input Power)
Distortion of wave shape	<3%
Fluctuation of Voltage	<1%
Maximum Load Current	10mA
Maximum Capacitance Load	5000pF
Voltage Accuracy	\pm (1%+10digit) of readings
Voltage Setting Range	0 ~ 3000V in 1V Steps

Partial Discharge Measurement Part

Gain	0 ~ 80dB
Range	1000pC, 10000pC, 100000pC
Response Occurrence Frequency	10 ~ 9000PPS (Rate)
Calibrator Charge	100pC, 1000pC
Calibration Pulse Injection Capacitor	50pF
Calibration Pulse Voltage	2V, 20V
Calibration Pulse Generation Frequency	50PPS
Internal Coupling Capacitor	1000pF

Others

Interface	USB
Size	430*380*200(W*D*H)
Weight	15kG

Software Attached

Option

Shield Case

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