SOKEN

PARTIAL DISCHARGE ANALYZER
DAC-PD-9

More and more diagnostic techniques for the predictive maintenance of high power equipment is required to contribute to its sustainable and economic operation. To meet the expectations for the electrical equipment diagnoses, Soken Electric Co., Ltd. has developed Digital Partial Discharge Analyzer DAC-PD-9 which incorporates the very latest digital technology. Partial Discharge Analysis can predict the time of critical condition on the equipment, which is essential to prevent the sudden failures of electrical equipment and to maintain its life as long

DAC-PD-9 is capable of various measurements specified in IEC standards. In addition to all functionalities of conventional frequency band (narrow band/wide-band) measuring devices and tuning type measuring devices, DAC-PD-9 provides ultra-wide-band measurement (up to 40MHz). The center and bandwidth of the frequency for measurement can be freely selected, which enables to select the appropriate frequency band for every specimen. All data will be sampled in time series, and statistical measurement can be performed. TFT liquid crystal touch screen enables simple and visual operation, and detailed analysis is possible by using the software provided with the analyzer.

Features

- Digital technology enables determination of the true polarity of partial discharges.
- All parameters such as cumulative frequency and net peak are displayed in real time.
- Discharge pulses of positive and negative electrodes can be counted simultaneously.
- Free center frequency and frequency bandwidth selection provide the optimum frequency band for each measurement.
- The large-capacity memory enables long-term data storage.
- Simple and visual operation with TFT Liquid crystal touch screen.
- Light weight and compact body (W320xD350xH150mm, 10kg).
- USB interface and LAN for communication.
- Independent operation without using PC is possible.

Test Specimen

●HV Transformer ●Power Cable ●Generator, Motor, Coil
●Capacitor, Bushing ●Circuit Breaker, Switch

SOKEN ELECTRIC CO., LTD.
http://www.soken-jp.com

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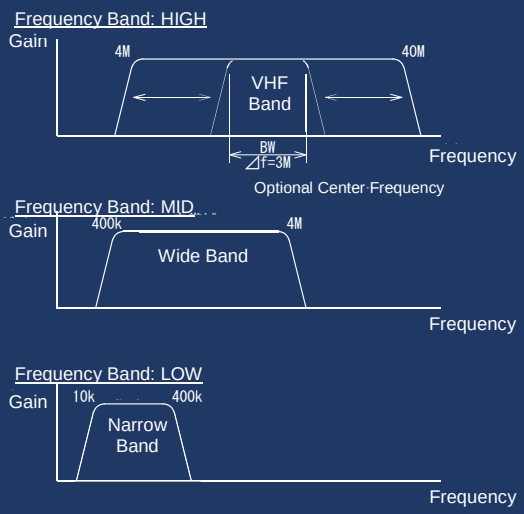
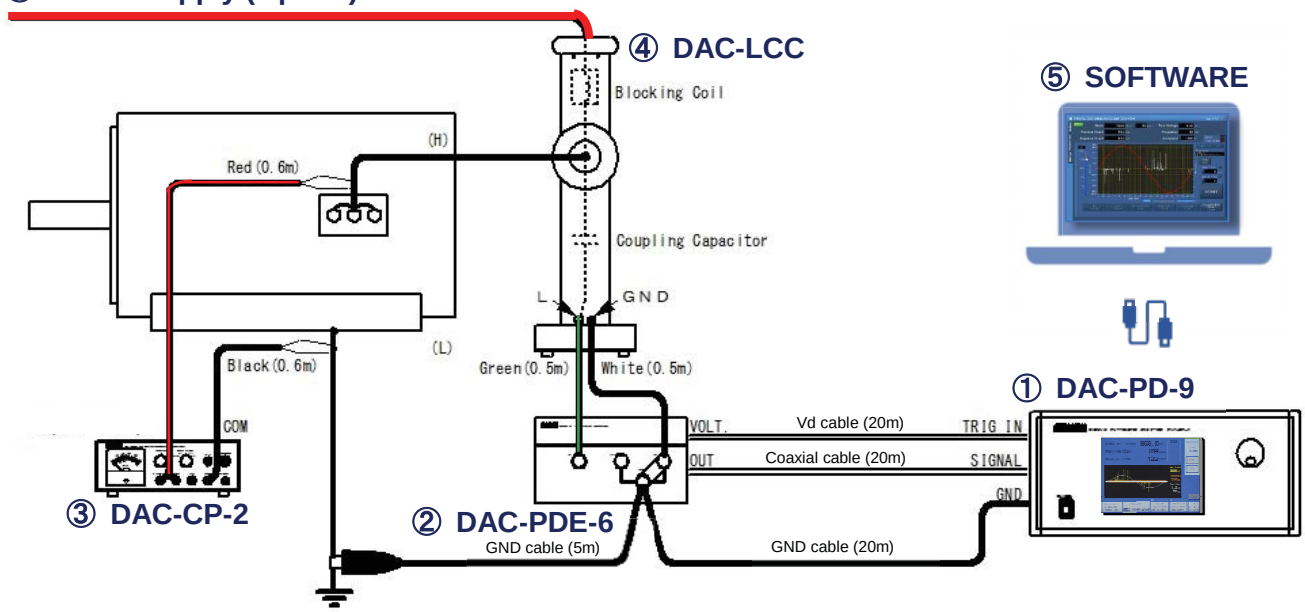
Variable Measuring Frequency Band

The evaluation of partial discharge greatly depends on the frequency bands for measurement. The optimal frequency band must be selected in consideration of the propagation characteristics and electrical structure of the test specimen as well as the noise environment and data reproducibility.

- ●Frequency Band : Low Band : 20kHz - 400kHz
  MID Band : 400kHz - 4MHz
  HIGH Band : 4MHz - 40MHz
- ●Center Frequency : 50kHz - 40MHz
- ●Frequency Band Range
  LOW Band : 50kHz,100kHz,300kHz
  MID Band : 300kHz,500kHz,1MHz,3MHz
  HIGH Band : 300kHz,500kHz,1MHz,3MH



Product Composition



① Partial Discharge Analyzer(DAC-PD-9)
② Detector (DAC-PDE-6)
③ Calibrator (DAC-CP-2)
④ Coupling Capacitor DAC-LCC series
15kV/30kV/50kV/100kV
HV test power supply (Option)
- Control : Manual/Auto
- PD <10pC
- Max voltage 350kV

⑤ Software for PD analysis
(PC is not included)

<Other option items>
- PD detection box(DAC-PDB-2)
- High Frequency Clamp CT
- Noise cut transformer
- Test chamber
- System Rack
- Rack Mount bracket


High Frequency Clamp CT


DAC-PDB-2

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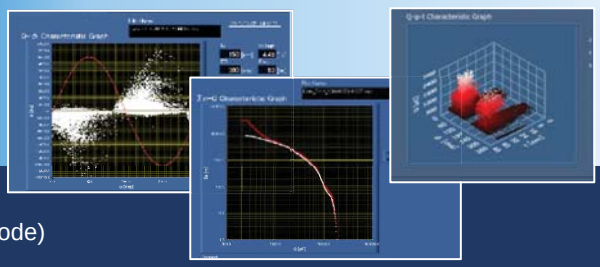
Partial Discharge Analysis Software

●Import data to PC while communicating with DAC-PD-9 in real time.
●The amount of charge for each phase can be measured. Max 18000 charges/sec at 50Hz can be acquired.

In wideband measurement, the polarity of partial discharge waveform is automatically determined and the number of positive and negative occurrences are displayed. You can create 2D and 3D graphs from saved data and use it for discharge analysis.



●V-Q mode
(Voltage-Discharge Quantity Measurement Mode)

When V-Q mode is selected, max PD charge amount (Qmax/pps) according to rise/fall of the test voltage is automatically acquired to see the voltage/charge amount characteristic.
The measurement data is saved in CSV format.

Specifications

■Calibrator DAC-CP-2

●Output Voltage : 5V、50V
●Lamp Time : <20nS
●Generating Pulses : 0 - 10000pC
●Repetition Frequency : 50Hz
●Power Source : Battery 7.2V
●Size : W170×H60×D110(mm)
●Weight : approx. 800g

■Detector DAC-PDE -6

●Applicable Frequency Band
: 10kHz – 400kHz
●Max. Applicable Current
: Balance Circuit 5A
: Un-balance Circuit 50mA
●Test Frequency : 50/60Hz
●Test Voltage Dividing Capacitor : 2μF
●Size : W180×H100×D120(mm)
●Weight : approx. 2.3kg

■Detection Box DAC-PDB-2

Consists of a detector and a coupling capacitor. Optimum for field testing.

●Rated Voltage : 12kV
●Max Current : 3A
●Ck : 2nF

■High Frequency Clamp CT

●Measuring Frequency Band
: 10kHz - 100MHz
●Max Current : 39.3A
●Aperture : 31Φ

DACLCC-50

■Blocking Coil & Coupling Capacitor DAC-LCC series

	DAC-LCC-15	DAC-LCC-30	DAC-LCC-50	DAC-LCC-100
Rated Voltage	15kV	30kV	50kV	100kV
Rated Current	3A	3A	3A	3A
Capacitance	1000pF	1000pF	600pF	1000pF
Height	512mm	702mm	912mm	109mm
Weight	8kg	13kg	15kg	38kg

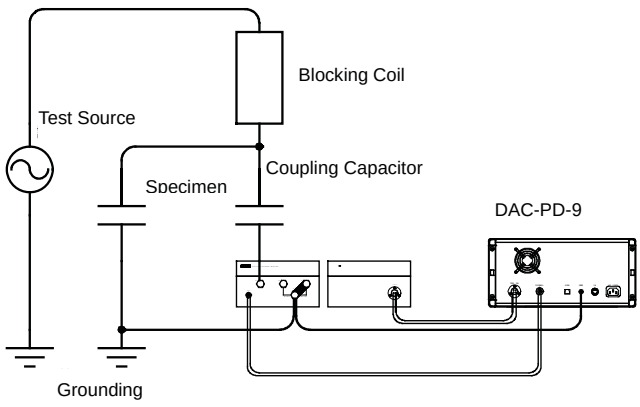
PARTIAL DISCHARGE ANALYZER DAC-PD-9

■Specifications

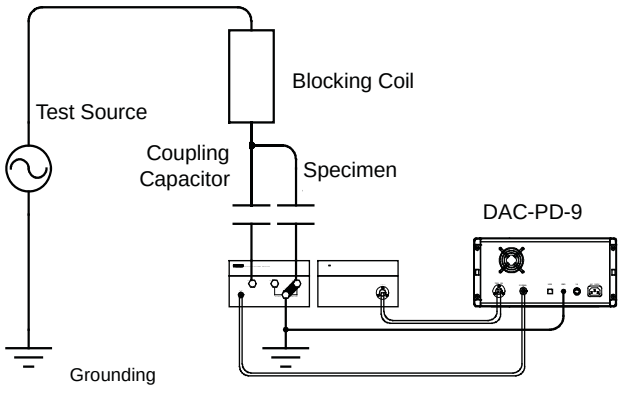
Partial Discharge Measuring Unit			
Maximum Partial Discharge	Measuring Range	1 -100000pC	
	Phase Resolution	1 deg.	
	Evaluted Inception Frequency	10 - 400pps	
Allowable Repetition Frequency Rate	Measuring Range	0 - 9999pps	
	Polarity	Auto Judgement	
Frequency Range Low Band : 20kHz-400kHz MID Band : 400kHz-4MHz HIGH Band : 4MHz-40MHz	Center Frequency	50kHz - 40MHz	
	Frequency Range Width	LOW	50kHz,100kHz,300kHz
		MID	300kHz,500kHz,1MHz,3MHz
		HIGH	300kHz,500kHz,1MHz,3MHz
	Gain	LOW	-40dB to 74dB
		MID	-40dB to 74dB
		HIGH	-40dB to 104dB
Input Characteristic	Input Impedance	50Ω	
	Input Voltage Range	0 - 2 Vp-p	
Memory	Max.3000 Cycles (Number of sycles Power Source Frequency)		
Voltage Detection(Torigger source)			
Input Characteristic	Input Impedance	2MΩ	
	Input Voltage Range	0 - 20Vrms	
	Input Frequency Range	50 - 400Hz (10Hz step)	
Interface/Power Source			
Interface	USB 2.0/1.1 or equivalent B type、LAN		
External Memory Function	USB A type		
Size and Weight	W320×D350×H150(mm) Approx. 10kg		
Power Source	AC100V-240V ±10% 50/60Hz		
Ambient Temperature/Humidity	0 - 40℃ / 20 - 85%(No Dew)		
Partial Discharge Analysing Software			
System Requirements	OS Windows 7, 10		

■Connection Diagrams

●GST (Grounded Specimen Test)



●UST (Un-grounded Specimen Test)



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