
HTWJF-10/100 Partial Discharge Detection System Solution



I. Overview:

HTWJF-10/100 Partial Discharge Detection System can meet the AC withstand voltage test and partial discharge test for transformers. It is an ideal partial discharge detection equipment for high voltage test department of electric equipment manufacturing enterprises and electric power installation and repair engineering units.

The device is mainly composed of : power frequency voltage withstand device without partial discharge, partial discharge measuring instrument, coupling capacitor, protective resistance and isolated power supply.

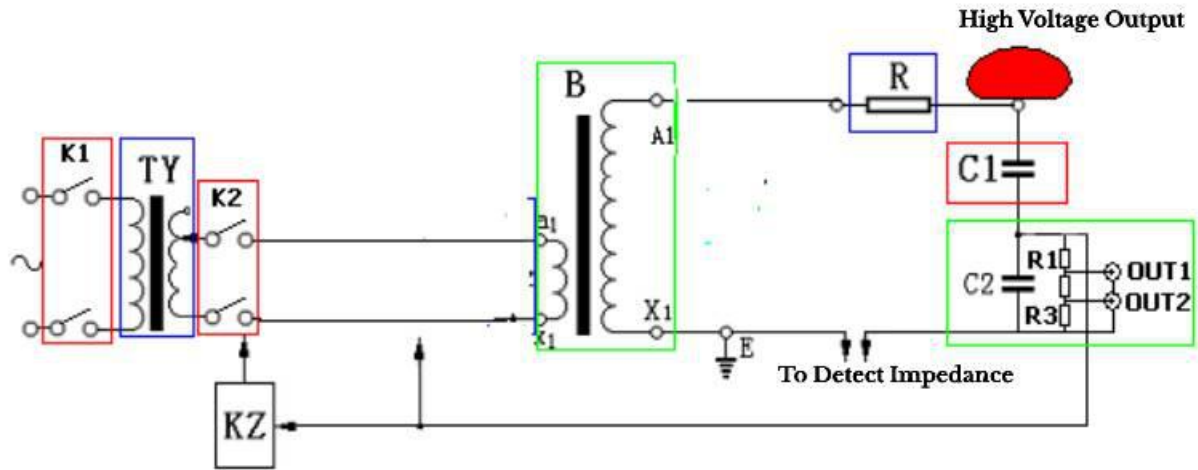
II. Power Frequency Partial Discharge Detector System Structure

No.	Item	Model	Unit	QTY	Remark
1	Partial Discharge Detector	JFD-2000A	pc	1	
2	Power Frequency Test Transformer (PD free)	YDQW-10kVA/100kV	pc	1	
3	Control Box (PD free)	XC-10KVA/220V	pc	1	
4	Isolation Filter Transformer (PD free)	GLB-10kVA/200V	pc	1	
5	Coupling Capacitor (PD free)	HTCW-100kV	pc	1	
6	Protection Impedance (PD free)	HT-R100kV	pc	1	
7	Accessories (including test cable, shielding cover etc.)		set	1	

III. Working Condition

1. Ambient Temperature: $-15^{\circ}\text{C} \sim +45^{\circ}\text{C}$
2. Relative Humidity: $\leq 90\% \text{RH}$;
3. Altitude: $\leq 2500 \text{ m}$

IV. Non-Partial Discharge Detector System Diagram



V. Description of main equipment configuration and technical parameters:

1. Product introduction:

JFD-2000 series partial discharge detection system is the main test item of power equipment insulation, and parameters such as partial discharge amount are important indicators to evaluate the quality of power equipment. JFD-2000 series partial discharge detection system developed according to the latest international and domestic technical progress is a new generation member of the successful HTJF series partial discharge instrument. In addition to inheriting the advantages of the previous generation of products, this product also has the functions of full process control, automatic calibration, automatic synchronization, automatic voltage recording, automatic measurement, storage and playback, etc. It can measure various partial discharge parameters specified in IEC-270, such as discharge repetition rate n , average discharge current I , square rate D , etc. It uses multiple view display modes such as sine, dot matrix, new digital filtering and interference suppression functions, combined with rich dynamic statistical analysis atlas, The field interference can be more effectively suppressed, and the user can operate and diagnose more easily. With the continuous development of the software, its functions are also expanding, such as pulse polarity identification and partial discharge measurement in balance circuit mode.

The JFD-2000 series partial discharge detection system fully complies with the latest GB7354 and IEC-270 "Partial Discharge Measurement" standards in terms of its detection method, measurement circuit and technical performance parameters. It is applicable to

the measurement of partial discharge of various high-voltage electrical equipment, covering the full voltage and capacity grade, representing the most advanced technology of domestic digital partial discharge instrument.

2. Product feature:

1. Pure program control mode of partial discharge detection system.
2. Full English operation menu .
3. Automatic calibration, automatic synchronization, automatic voltage recording, automatic measurement, saving and playback.
4. Automatically generate test report.
5. 2D and 3D Partial Discharge Diagram Display.
6. Adopt digital windowing technology, with strong anti-interference ability.
7. The dual channel measurement and digital difference technology can simultaneously measure the partial discharge signals of two test objects or one test object and two measuring points, and can conveniently analyze the source of partial discharge signals.

3. Product standard:

JB/T9641-----<Test transformer>

GB 1094----- <Power transformer>

GB50150-91-2006 ---- <Standard for Hand over Test of Electrical Equipment in Electrical Equipment Installation Engineering>

DL/T 848 · 3-2004 ---- <General Specifications for High Voltage Test Equipment>

Part III: Transformer Non- partial discharge test

DL/T 596-1996 ---- <Preventive Test Code for Electric Power Equipment>

GB1094.1-GB1094.6-96 ---- <Degrees of Protection Provided by Enclosures>

GB2900 ---- <Electrical Terminology>

GB/T16927.1~2-1997 ---- <High Voltage Test Technology >

GB / T16927 -----<high voltage test technology>

IEC60270 -----<partial discharge measurement>

GB / T7354-----<partial discharge measurement>

GB 1094-----<Power transformer>

IEC6067.11-----<dry type transformer>

GB 1207 -----<Voltage transformer>

GB 1208 -----<Current transformer>

DL417:----- <Guide for on site partial discharge measurement of power equipment>

GB 12706.4----- <test requirements for power cable accessories>

IEC60885-3 ----- <partial discharge test of whole extruded cable>

GB / T3048.12 ----- <test methods for electrical properties of wires and cables - partial discharge test>

DL / T 846.4-2004 ----- <General specification for high voltage test equipment Part IV partial discharge measuring instrument>

4. Technical parameter

4.1 JFD-2000A Partial Discharge Detector

Measurement Channel	A & B, 2Channels (can collect the discharge signal at the same time)	
Detection sensitivity	0.1pC	
Measuring frequency band	3dB Bandwidth 10kHz ~ 300kHz	
Programmed filter setting gear	Low-end:	10, 20, 40kHz
	High-end:	100, 200, 300kHz
Gain dynamic range	120dB	
Sampling rate	Each channel 0.1 μ s/point	
Sampling accuracy	8 digit \pm 1/2LSB	
Test voltage frequency	30, 100, 150, 200, 250Hz or any Hz	
Calibration pulse generator	HTJF-301	
Calibration pulse voltage	10V, 5V, 2V, 1V, 0.5V, 0.2V, Six gear adjustable	
Calibration capacitance	50pF, 200pF (Two gear adjustable)	
Calibration pulse voltage rise time	< 60ns、 pulse width > 20 μ s	
Calibration pulse voltage fall time	> 100 μ s	
Calibrate the adjustable range of pulse phase Angle	0 ~ 360 degrees	
Partial discharge peak display	0 ~ 10000pC	
Packaging method of components	Durable packaging	
Working power	AC 220V \pm 10%, 50Hz、 power < 100VA、 fuse 0.5A	

4.2 YDQW-10kVA/100kV Power Frequency Test Transformer (PD

free)

Non- partial discharge test transformer. The special structure and precision process are adopted to control the local discharge in a small range. High shape process precision. Applicable to site and laboratory. Convenient and applicable.

Rated power	10kVA
Input voltage	220V±10%
Output voltage	AC 0-100kV, DC 0-140kV
Local discharge at rated voltage	≤5PC
Output current	100mA
Voltage precision	AC 1.5%
Power distortion	< 3%
Insulating medium	SF6 gas
Size	Diameter: 450mm, High: 1300mm
Net Weight	70kg

4.3 XC-10KVA/220V Control Box (PD free)

1. This console is a special high-voltage non partial discharge test voltage regulating and operating platform, equipped with start and stop buttons; Digital voltage, ammeter indication, time relay control time and alarm.
2. The operating voltage is continuously adjustable, and the waveform has no distortion and distortion.
3. It has zero position function, voltage upper limit, lower limit, over-current, over-voltage breakdown protection function.
4. The alarm has sound and light prompts
5. After the test, the voltage is reduced to zero.

Rated power	10kVA
Input voltage	220V±10%
Output voltage	0-250V

Output current	40A
Size	420mm x 300mm x 300mm
Net weight	55kg

4.4 GLB-10kVA/200V Isolation Filter Transformer (PD free)

The main structure is the isolation transformer and wave filter device, which can effectively eliminate the clutter and various interferences in the power supply.

Rated power	10kVA
Input voltage	220V \pm 10%
Output voltage	220V \pm 10%
No load loss	\leq 5%
Impedance voltage	\leq 5%
Attenuation effect	10kHz-100kHz \geq 20db
	100kHz-30MKz \geq 60db
Size	400mm x 300mm x 450mm
Weight	45kg

4.5 HTCW-100kV Coupling Capacitor (PD free)

Rated power	120kV
High	800mm
Capacitance	500-1000PF
Partial Discharge level	\leq 5PC

4.6 HT-R100kV Protection Impedance (PD free)

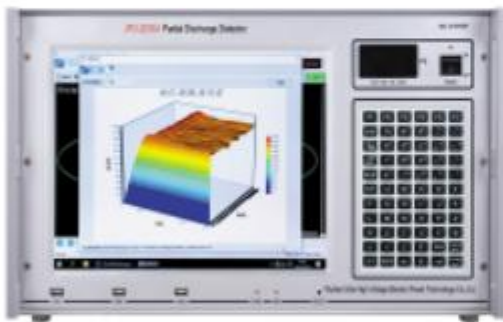
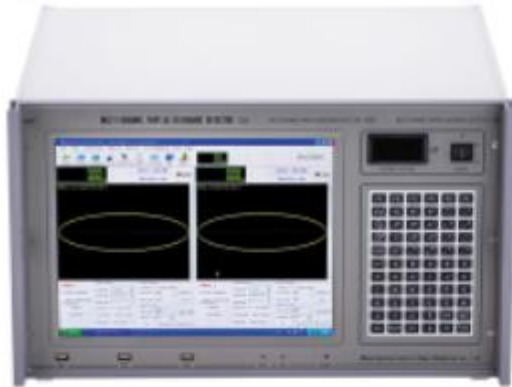
Size	Diameter 60mm x Length 600mm
Weight	3kg
Partial Discharge level	\leq 5PC

VI. Example pictures of main components :

1. HTWJF Partial Discharge Detection System



2. JFD-2000A Partial Discharge Detector



3. YDQW-10kVA/100kV Power Frequency Test Transformer (PD free)



4. XC-10kVA/100kV Control Box (PD free)



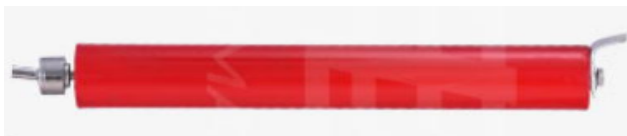
5. GLB-10KVA/200V 隔离滤波变压器



6. HTCW-100kV 耦合电容器



7. HT-R100KV保护电阻



VII. After-sale service

1. After sales maintenance service content, requirements and duration

1.1 The warranty period of the equipment is 12 months, starting from the date of customer received the goods.

1.2 During the warranty period, the Supplier shall be responsible for and bear the cost of the faults that are caused by the quality problems of equipment design, manufacturing, performance, etc. or the quality problems of installation and commissioning.

1.3 During the warranty period, if the system have got any problem, the Supplier shall respond within 4 hours after receiving the notice from the Demander and provide the solution for maintenance within 72 hours.

1.4 After the expiration of the warranty period, in case of major failure of the equipment, the Supplier shall respond within 4 hours after receiving the notice from the Demander, and send maintenance solution within 72 hours with preferential charges.

1.5 Instructions, wearing parts list and maintenance instructions shall be attached with the shipment box.

2. Acceptance, installation and commissioning of goods

2.1 The acceptance of goods is divided into the acceptance at the stage of equipment manufacturing and delivery (made in China), and the acceptance at the stage of equipment installation and commissioning. After installation and commissioning, it shall be submitted to the Demander for use as the final acceptance.

2.2 The installation and commissioning of goods shall be carried out and guided by technicians assigned by the Supplier at the installation site or at on-line videos. It is also responsible for guiding and training the demander's personnel, and important technical guidance shall be put forward in writing.

4. Training methods

1. The Supplier shall provide the clear manual, connection drawing or the operation and connection videos.

2. The Supplier shall provide the on/off-line video guide or email or message guide if the Demander required.

3. If Demander can send operators to company location.the Supplier shall provide free training until operators know well about the operation and connection before shipment.

4. The Supplier shall send technician to conduct on-site classified guidance and training for the Demander's operators and maintenance personnel if the demander required (Customer will pay technician everyday allowance and provide technician the Accommodation), until the Demander's personnel are proficient in the correct methods.