Huazheng®

# HZ-9002C
# Handheld Partial Discharge Tester

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZ-9002C Handheld Partial Discharge Tester.

We hope that this instrument can make your work easier and more enjoyable, so that you can get the feeling of office automation in the test and analysis work.

Before using the instrument, please read this manual, and operate and maintain the instrument according to the manual to prolong its service life. "Just a light press, the test will be completed automatically" is the operating characteristics of this instrument.

If you are satisfied with this instrument, please tell your colleagues; if you are not satisfied with this instrument, please call (0312) 6775656 to tell you to serve you at all times-Baoding Huazheng Electric Manufacturing Co., Ltd., our company will definitely make you satisfied !

# Contents

# I. Adopting standards

The design of this partial live comprehensive tester adopts the following standards:

GB/T 7354-2003 Partial discharge measurement;

GB 4793.1-2007 Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements;

GB/T 2423.8-1995 Basic environmental test procedures for electrical and electronic products;

GB 2900 Electrical technical terminology;

GB/T 16927 high voltage test technology;

DL/T 356-2010 Partial discharge measuring instrument calibration specification;

DL/T 417-2006 Local discharge measurement guidelines for power equipment;

IEC1000 electromagnetic compatibility.

# II. Overview

This local live comprehensive tester is suitable for partial discharge live inspection of high-voltage electrical equipment such as transformers, GIS, switch cabinets, cables, arresters, and transformers.

Locally charged integrated tester consists of a 2-channel handheld inspection tester host, partial discharge inspection software, high-frequency current transformer (open circular transformer), ultrasonic sensor, ultra-high frequency sensor, TEV sensor, and calibration pulse generator , Test cable composition.

# III. Introduction to the main features of the product

1. Strong anti-interference ability and accurate detection data;

2. The high-sensitivity sensor can sensitively reflect the partial discharge state inside the equipment:

1) Using a broadband partial discharge ultra-high frequency sensor, the detection frequency band can cover 300MHz-1.5GHz (any frequency band is optional), which can effectively collect the partial discharge signal inside the GIS equipment.

2) The ultrasonic sensor adopts the most advanced technology at present. It can be verified by actual application to detect the weak discharge signal, ensuring that the partial

discharge signal inside the high-voltage equipment can be effectively detected.

3) The contact part between the composite TEV sensor and the switch cabinet body is made of PTFE material with good dielectric constant, with a built-in receiving electrode, which forms a capacitor with the switch cabinet wall, which can couple the discharge signal in the cabinet to the sensor for signal processing , To ensure that the partial discharge signal inside the switchgear can be effectively detected.

4) The high-frequency current transformer adopts the design principle of active zero magnetic flux, which not only can meet the collection of mA current signal, but also has strong anti-interference ability.

5) The partial discharge positioning detector can detect the partial discharge signal of the high-voltage cable through the combined sensor, and has high-frequency electric field and ultrasonic detection methods. The sensor and the host are connected by a coaxial cable, which effectively avoids the detection of various electromagnetic interference on the spot. The impact of data. At the same time, personal safety is guaranteed.

3. Simple and convenient installation

The self-adsorption ultrasonic sensor can be directly adsorbed on the outer wall of the high-pressure equipment, and the operation is simple and safe. The high-frequency current transformer is of round or rectangular open design, which is convenient for clamping on different grounding wires.

The partial discharge positioning detector can be operated simply and conveniently. There is no connection between the detector and the tested product during detection, and the tested product does not need to be powered off, and the cable partial discharge signal can be detected in a non-contact manner.

4. Simple and convenient connection

The system can choose a variety of connection methods, and the sensor and the host can choose BNC and SMA interfaces for easy use (the default is BNC interface).

5. The device has a built-in large-capacity lithium battery, which can last for a long time

This device has two power supply modes: battery and external power supply. Using battery power supply can easily detect high-voltage equipment in a wide range. The

continuous working time of the battery is not less than 4 hours; if you need to use it continuously for a long time, you only need to provide AC220V± 10% AC power is sufficient.

# IV.Technical indicators

4.1 Scope of application

It has the function of conducting partial discharge live line inspection of high-voltage electrical equipment in operation, and is suitable for partial discharge live line inspection of high-voltage electrical equipment such as transformers, GIS, switch cabinets, and cables.

4.2 Product technical specifications and standards

1) IEC60270 "Partial Discharge Measurement"

2) GB/T7354 "Partial Discharge Measurement"

4.3 Operating environment

1) Ambient temperature: -10℃～50℃

2) Relative humidity: ≤95%.

3) Altitude: ≤1000m

**4.4 Main device technical parameters**

Measurement channels: 2 independent measurement channels

Sampling rate: 1.8MHz per channel

Non-linear error of this range: ≤±5%

Capacitance range of testable products: 6pF～250μF

Resistance to voltage shock: 2500V, signal terminal, power terminal, to ground (positive and negative)

Charging power supply: AC220V±10%; frequency 50Hz; power <50W

Built-in rechargeable battery: more than 4 hours of continuous work

**4.5 Sensor technical parameters**

**4.5.1 UHF sensor**

Detection frequency band: 300MHz～1.5GHz

Signal transmission method: 50Ω coaxial cable

Detection sensitivity: 1dB

Gain: ＞65dbm

**4.5.2 Ultrasonic sensor**

Detection frequency band: 20kHz～180kHz

Signal transmission method: 50Ω coaxial cable

Effective sensitivity: 10pC

**4.5.3 High frequency current transformer**

Detection frequency band: 10kHz～30MHz

Signal transmission method: 50Ω coaxial cable

Detection sensitivity: 10pC

**4.5.4 TEV sensor**

Measuring signal: transient ground voltage signal

Signal transmission method: 50Ω coaxial cable

TEV measurement frequency band: 3MHz-100MHz