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JJG

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JJG 1072-2011

Replacing JJG 166-1993

**Verification Regulation of High Voltage and Value D.C.Resistors
(English Translation)**

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Introduction

JJF1002-2010 "national verification procedures to write rules" rules of order preparation is based.

JJG 1072-2011 "DC high voltage high value resistor" is JJG 166-1993 "DC resistance" for the group Foundation, on which the DC high voltage high value resistor (hereinafter referred to as high-pressure high-impedance device) amended section and separate developed Test procedures. Compared with JJG 166-1993, the main technical changes are as follows.

--- The order applies to the use of a nominal voltage greater than 1kV, the total resistance is greater than 10Mohm the high-pressure high-impedance detection Set (see 1);

--- Zero switching device block at high-pressure high-impedance device, when all the switches are set to zero, the output of the residual power Direct resistance shall not be greater than 1ohm (see 4.3);

--- High-voltage switching device with a high impedance device, the resistance caused by the deterioration of the contact switch contacts shall not be greater than the direct 0.1ohm (we see 4.4);

- Clear nominal operating voltage (or current) (see 5.1);
- Emphasized the high voltage high impedance device should be placed at least 24 hours at reference conditions, so that the internal temperature and humidity Consistent with the environment (see 6.1.2);
- Simplifies the residual resistance measurement and switch contact resistance variation calculation (see 6.2.2.4,6.2.2.5);
- Basic error of measurement is given using op amps partial pressure method, the partial pressure method and bridge method three measurement principle (see Annex Record A);
- Resistance value rounding interval regulations have been simplified (see 6.3.2);
- Increasing the "verification original record format" (see Appendix B), and "verification certificate and test results notice the inside pages Format "(see Appendix C).

DC high voltage high value resistor test procedures

1 Scope

DC high voltage electrical high value of the order applies to the use of the maximum nominal voltage greater than 1kV, the total resistance is greater than 10Mohm Resistor (hereinafter referred to as high-pressure high-impedance device) initial verification, use and subsequent verification check.

This procedure does not apply to active and passive analog resistor in the circuit is not suitable for installation as a permanent element Resistor.

2. References

This procedure refers to the following documents.

JJF1001 common measurement terms and definitions JJF1059 Evaluation and Expression of Uncertainty in Measurement JJF1094 measuring instrument characteristics evaluation JB/T 8225-1999 Laboratory DC resistor for dated references, only the dated edition applies to this procedure; undated reference documents Member, the latest edition (including any amendments) applies to this procedure.

3 Overview

High voltage high impedance is high impedance and how the value of the high-pressure single-valued high-pressure high-impedance device, mainly used for insulation resistance meter (megger) Verification. Multi-value high-pressure high-impedance typically consists of several decade resistor pad series, each of the disc by the decimal equivalent resistance Single-value resistor and step switch composed of not less than the minimum step resistance 100ohm; part of a multi-valued uses high-pressure high-impedance end Button-type structure, or a combination of the above two forms.

4 metering performance requirements 4.1 accuracy class and the maximum permissible error at reference conditions, high voltage high impedance device each decade resistor pad or button on each side can have its own resistor accuracy, etc.

Level and the nominal operating voltage.

High voltage high impedance device each decade resistor pad or button on each end resistance corresponding accuracy class and the maximum permissible errors shall be Specified in Table 1.

Table 1 Accuracy class and maximum permissible error

Accuracy class 0.2 0.5 Level 1 Level 2 510 the maximum permissible error $\pm 0.2\%$ $\pm 0.5\%$ $\pm 1\%$ $\pm 2\%$ $\pm 5\%$ $\pm 10\%$ High voltage high impedance indication error by the relative error, said.

$\Delta = \frac{R_n - R_x}{R_x} \times 100\%$ (1)