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JJG

NATIONAL METROLOGY VERIFICATION REGULATION OF THE PEOPLE'S REPUBLIC OF CHINA

JJG 1168-2019

AC Peak Voltmeters

交流峰值电压表检定规程

(English Translation)

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Introduction

This regulation was written in accordance with JJF1002-2010 "Rules for Compiling National Measurement Verification Regulations".

This regulation is issued for the first time.

Verification Regulation of AC Peak Voltmeter

1 Scope

This regulation is applicable to AC with a measurement frequency of 10Hz~500Hz and a measurement voltage range of 1V~1.4kV the first verification, subsequent verification and in-use inspection of the peak voltage meter.

2 Reference documents this regulation refers to the following documents.

GB/T 13978-2008 digital multimeter GB/T 16927.3-2010 (IEC 60060-3.2006MOD) high voltage test technology part 3 Definition and requirements of field test for dated reference documents, only the dated version applies to the Regulations; for non-date quoted documents the latest version (including all amendments) is applicable to this regulation.

3 Terms and units of measurement

3.1 Peak value of AC voltage the maximum value of the AC voltage. But it does not count the small high-frequency oscillations caused by destructive discharge.

[GB/T 16927.3-2010, definition 7.2.2]

3.2 Input impedance inputimpendence the equivalent impedance between the input terminals under operating conditions.

[Rewrite the definition 3.2.12 of GB/T 13978-2008]

4 Overview

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The AC peak voltage meter (hereinafter referred to as the peak table) is used to measure the 10 Hz ~ 500 Hz sinusoidal AC voltage peak the voltage measurement device of the value can be used alone or together with the voltage divider to realize the measurement function according to the voltage level, which is widely used Measurement of AC test voltage of electrical equipment.

Peak table usually adopts peak detection method or real-time sampling method.

4.1 Peak detection method the principle and circuit of the peak detection method are shown in Figure 1.

The peak meter is mainly composed of voltage follower, discrete diode, holding capacitor and control switch. Voltage signal passing After the voltage follower charges the holding capacitor C, the control switches s1 and s2 are used to control the sampling time, when the diode D conducts when on, the voltage on the holding capacitor C increases as the input signal voltage increases; when the input signal drops, two the diode D is cut off, and the holding capacitor C will keep the amplitude of the maximum input voltage signal unchanged, thereby achieving peak detection Features.

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