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

JJF 1667-2017

**Calibration Specification for Harmonics Analyzing Instruments
at Power Frequency
(English Translation)**

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Introduction

This specification is based on JJF 1071-2010 "Rules for the preparation of national metrological calibration specifications", JJF 1059.1-2012 "Evaluation and Expression of Measurement Uncertainty" was compiled.

This specification refers to the following documents.

JJG1106-2015 Verification Standard for Static Harmonic Active Energy Meters for Work Use;

GB/T 17626.7-2008 "Electromagnetic compatibility test and measurement technology power supply system and connected equipment harmonics, Harmonic wave measurement and measurement instrument guidelines";

IEC 61000-4-30:2008 "Electromagnetic Compatibility Part 4-30 Test and Measurement Technology Power Quality Measurement Method (Electromagnetic compatibility (EMC)-Part 4-30. Testing and measurement techniques-Power quality measurement methods).

This specification is the first release.

Frequency harmonic measuring instrument calibration specification

1 Scope

This specification applies to the calibration of power frequency harmonic measuring instruments (including harmonic analyzers and standard harmonic power sources). This the instrument works under laboratory conditions, with a fundamental frequency in the range of 45Hz to 65Hz, with harmonic voltage, harmonics Wave current and harmonic power measurements, or some of them.

For the calibration of the harmonic measurement function of the standard power meter and the standard power meter, refer to this specification.

This specification does not apply to the calibration of interharmonic waves.

2 references

This specification refers to the following documents.

JJF 1245.3-2010 Installed energy meter type evaluation outline special requirements static active energy meter (0.2S, 0.5S, 1 and 2) GB/T 17215.302-2013 Particular requirements for alternating current measuring equipment Part 2. Static harmonics Energy meter GB/T 17215.321-2008 Particular requirements for alternating current measuring equipment Part 21. Static active power Energy Meter (Level 1 and Level 2) OIMLR46Edition2012(E). Active Electrical Energy Meters for dated references, only dated editions apply to this specification; all undated references the latest version (including all amendments) applies to this specification.

3 Terms and units of measure

3.1 Harmonics [component] harmonic (component) the number of periods in the Fourier series is a component of an integer greater than one.

Note:

1 In this specification, DC [component] is considered as a harmonic of the order 0.

2 See Annex A for formulae for expressions related to harmonic voltages, harmonic currents, and harmonic powers formed by them.

3 Rewrite GB/T 17215.302-2013, definition 3.4.

3.2 Harmonic Absolute Error HARMONIC INDICATORS MEASUREMENT OF HARMONIC INDICATORS AND REFERENCE VALUES (THE SAME HARMONIC INDICATIONS PROVIDED BY MEASUREMENT STANDARD DEVICES) the difference between. V, mV, μ V (harmonic voltage); A, mA, μ A (harmonic current); or W, mW, μ W (Harmonic power) is expressed.

3.3 Harmonic Relative Error the ratio of harmonic absolute error to the reference value. With mV/V, μ V/V (harmonic voltage); mA/A, μ A/A (harmonic) Wave current); or mW/W, μ W/W (harmonic power), can also be expressed as a percentage.

3.4 Harmonic reference error harmonicfiducialerror