

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

JJF 1075-2015

Replacing JJF 1075-2001

**Calibration Specification for Clamp Ammeters
(English Translation)**

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Introduction

This specification is based on JJF 1071-2010 "National Metrological Calibration Rules", JJF 1059.1-2012 "Measurement Uncertainty Assessment and Representation", JJF 1001-2011 "Generic Metrological Terms and Definitions".

This specification is a revision of the JJF 1075-2001 "Clamp Ammeter Calibration Specification".

Compared with JJF 1075-2001, the main amendments are.

- the preparation of the format in line with JJF 1071-2010 "national measurement calibration rules to prepare the rules" requirements;

- The scope of application has been adjusted. The operating frequency range of the clamp ammeter is adjusted to DC or (45 ~

- 400) Hz;

- to expand the current measurement range, from the original (0.1 ~ 1000) A expanded to (0.1 ~ 2000) A;

- to calibrate the accuracy of the school level to 0.2;

- for the expansion of the uncertainty of the k value of the re-provision, provides $k = 2$;

- The calibration method is re-divided into four methods. 1) standard current source method; 2) standard table ratio More law; 3) standard transformer method; 4) standard resistance method;

- Appendix A adds an example of the uncertainty of the current measurement of the clamp ammeter;

- Appendix B to increase the clamp ammeter calibration methods introduced and error analysis;

- Appendix C increases the maximum allowable error representation of the clamp ammeter current;

- Appendix D, E Added Clamp Ammeter Calibration Original Record/Calibration Certificate Inside Page Format.

The previous release of this specification is.

- JJF 1075-2001.

Clamp ammeter calibration specification

1 Scope

This specification applies to line voltage not exceeding 650V, DC or AC frequency is (45 ~ 400) Hz, current (0.1 ~ 2000) A clamp ammeter calibration, but also for multi-function clamp meter current function calibration. Not applicable Calibration of the clamp leakage ammeter.

2 reference file

This specification refers to the following documents.

Current Meter, Voltmeter, Power Meter and Resistance Meter JB/T 9285-1999 Clamp ammeter for dated references, only the dated edition applies to this specification; references that are not dated, The latest version (including all modifications) applies to this specification.

3 Overview

Clamp ammeter (including digital, pointer) is a way to open and close the magnetic circuit in the current conductor to measure its electrical Flow of the instrument. It is characterized by no need to disconnect the loop, you can measure the current measured circuit. In accordance with the principle of measurement clamp Ammeter can be divided into transformer, Hall effect and magnetic balance and so on.

The principle of the transformer clamp ammeter can only measure the AC current, Hall effect principle and the principle of magnetic balance of the clamp Flow meter can measure AC and DC current.

4 measurement characteristics Current.

Measuring range. (0.1 ~.2000) A;

Operating frequency. DC or AC frequency (45 ~ 400) Hz;

The maximum allowable error is shown in Table 1, where the error of the digital clamp ammeter is expressed by relative error, the pointer clamp the ammeter error is expressed as a reference error. The error representation is given in Appendix C.

Table 1 clamp ammeter maximum allowable error

Accuracy class 0.2 grade 0.5 grade 1.0 grade 2.0 grade 5.0 Maximum permissible error $\pm 0.2\% \pm 0.5\% \pm 1.0\% \pm 2.0\% \pm 5.0\%$ Note. The above indicators are not used for qualifying, for reference only.

5 calibration conditions

5.1 Environmental conditions Ambient temperature. $(20 \pm 5) ^\circ\text{C}$;