

JJF

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**Calibration Specification for Lock-in Amplifiers
(English Translation)**

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8 Recalibration interval (11)

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Appendix C Examples of uncertainty assessment for calibration of major items (18)

Introduction

JJF 1071-2010 "Rules for the Preparation of National Metrology and Calibration Specifications" and JJF 1059.1-2012 "Measurement Uncertainty "Degree Assessment and Representation" together constitute the basic series of standards supporting the preparation of this standard.

This specification is published for the first time.

Lock-in Amplifier Calibration Specifications

1 Scope

This specification applies to the calibration of lock-in amplifiers with a frequency range below 600MHz.

For reference.

2 References

This specification has no referenced documents.

3 Overview

The phase-locked amplifier is used to detect weak AC signals. In order to avoid the influence of noise on the measurement, the core technology used it is a phase-sensitive detection technology that uses a reference signal with the same frequency and fixed phase relationship as the signal to be measured as a reference.

The lock-in amplifier is composed of signal channel module, the reference channel module provides a reference signal as a benchmark for the phase-sensitive detector.

The reference signal can be an external source or an internal source, and the internal source is generally used by default.

Auxiliary input and output channels are used for DC output and DC measurement. The schematic diagram is shown in Figure 1.

Figure 1 Schematic diagram of the lock-in amplifier

4. Metering characteristics

4.1 Time base output frequency Maximum allowable error. $\pm 1 \times 10^{-6}$.

4.2 Internal reference source output frequency Frequency range. 1mHz~600MHz;
Maximum allowable error. $\pm 1 \times 10^{-6}$.