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**Standard measurement method of refrigeration basic
parameters - Part 1: Temperature measurement**

制冷基本参数标准测量方法 第1部分：温度测量

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document is Part 1 of GB/T 46120 "Standard Measurement Methods for Basic Parameters of Refrigeration". GB/T 46120 has published the following... part.

- Part 1: Temperature Measurement Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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Introduction

GB/T 46120, "Standard Measurement Methods for Basic Refrigeration Parameters," mainly covers the measurement of basic refrigeration parameters. GB/T 46120 aims to provide...

Standard measurement methods for basic refrigeration parameters, to improve the accuracy of measurement and data analysis, GB/T 46120 is proposed to consist of the following 11 parts.

- Part 1: Temperature Measurement. The purpose is to provide methods for measuring the temperature of various parts of a refrigeration system.
- Part 2: Wind Speed and Airflow Measurement. The purpose is to provide a method for measuring wind speed and airflow in refrigeration systems.

- Part 3: Pressure Measurement. The purpose is to provide methods for measuring pressure in various parts of a refrigeration system.
- Part 4: Measurement of Oil Content in Liquid Refrigerants. The purpose is to provide a method for measuring the oil content of liquid refrigerants in refrigeration systems.
- Part 5: Engineering Analysis of Experimental Data. The aim is to provide methods for analyzing measurement data from refrigeration systems.
- Part 6: Humidity Measurement. The purpose is to provide a method for measuring humidity in refrigeration systems.
- Part 7: Gas Flow Measurement. The purpose is to provide a method for measuring gas flow in refrigeration systems.
- Part 8: Liquid Flow Measurement. The purpose is to provide a method for measuring liquid flow in refrigeration systems.
- Part 9: Calorimetric Method for Refrigerant Mass Flow Measurement. The purpose is to provide a method for measuring refrigerant mass flow in refrigeration systems using calorimeters.

Methods for refrigerant mass flow rate.

- Part 10. Flowmeter Method for Refrigerant Flow Measurement. The purpose is to provide a method for measuring refrigerant flow using flowmeters in refrigeration systems.

Methods for determining agent flow rate.

- Part 11. Power Measurement. The purpose is to provide a method for measuring power in refrigeration systems.

Standard Measurement Methods for Basic Refrigeration Parameters Part 1: Temperature Measurement

1 Scope

This document specifies the general rules, requirements, instruments, temperature measurement methods, and uncertainty classification for the standard temperature measurement method in the basic parameters of refrigeration. Analysis and test reports.

This document applies to temperature measurement for testing refrigeration, heat pump, and air conditioning equipment and components.

2 Normative references

GB/T 6379.1

GB/T 11605-2005

GB/T 16839.1-2018

GB/T 18517

3 Terms and Definitions

The terms and definitions defined in GB/T 6379.1 and GB/T 18517, as well as the following terms and definitions, apply to this document.

3.1 truevalue

Unknown, error-free values in the test results.

3.2 accuracy

The degree of agreement between the test results (characteristic values determined by the specified test methods) and the true values.

Note. The term accuracy, when used for a set of test results, consists of random error components and systematic error, i.e., bias components.

3.3 Precision

Under specified conditions, the degree of consistency between independent test results.

Note 1. Precision depends only on the distribution of random errors and is independent of the true or specified values.

Note 2. Precision is usually measured as imprecision, which is expressed as the standard deviation of the test results. The lower the precision, the larger the standard deviation.

Note 3. "Independent test results" refers to results obtained on the same or similar test subjects that are not affected by any previous results. Precision is a quantitative measurement.

The degree of repeatability depends strictly on the specified conditions, with repeatability and reproducibility being two extreme cases.

3.4 error

The difference between the test result and the true value.

Note. All errors in the experimental data were categorized into two types. systematic errors (fixed errors) and random errors (precision errors). Accuracy and precision