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PEOPLE'S REPUBLIC OF CHINA**

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**Calibration Specification for Temperature Indicators
(English Translation)**

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Table of Contents

Introduction (II)	
1 Scope (1)	
2 References (1)	
3 Overview (1)	
4 Metrological characteristics (2)	
4.1 Error indication (2)	
4.2 Safety Performance (2)	
5 Calibration Conditions (2)	
5.1 Standard Equipment and Other Equipment (2)	
5.2 Environmental Conditions (3)	
6 Calibration Items and Calibration Methods (3)	
6.1 Calibration and Inspection Items (3)	
6.2 Calibration Methods (3)	
6.3 Data Processing Principles (7)	
7 Expression of Calibration Results (7)	
8 Re-school interval (8)	
Annex A Digital Meter Representation Value Error Calibration Uncertainty Evaluation Example (9)	
Appendix B Simulator Value Error Calibration Uncertainty Evaluation Example (12)	
Appendix C Original Record Form (Reference) (15)	
Appendix D Deviation Indicator Meter Measurement Record (Example) (18)	
Appendix E The differential resistance of the thermal resistance and the Seebeck coefficient of the thermocouple (informative) (19)	
Appendix F Internal Format of Calibration Certificate (21)	

8 Re-school interval (8)

Annex A Digital Meter Representation Value Error Calibration Uncertainty Evaluation Example (9)	
Appendix B Simulator Value Error Calibration Uncertainty Evaluation Example (12)	
Appendix C Original Record Form (Reference) (15)	
Appendix D Deviation Indicator Meter Measurement Record (Example) (18)	

Appendix E The differential resistance of the thermal resistance and the Seebeck coefficient of the thermocouple (informative) (19)

Appendix F Internal Format of Calibration Certificate (21)

Introduction

This specification was drafted in accordance with JJF 1071-2010 "Rules for the preparation of national metrological calibration specifications", in which measurement uncertainty the degree of assessment was conducted in accordance with JJF 1059.1-2012 Evaluation and Expression of Measurement Uncertainty. There is no temperature the publication of relevant international recommendations for display instruments, only the European Union's.2007 calibration guide EURAMET/cg-11/V.01 "Guideline calibration standards for temperature indicators" And simulators by electrical simulation and measurement) for reference, this specification is equivalent to the temperature display instrument part of the calibration principle, calibration requirements and uncertainty assessment.

This specification is the first release.

Temperature Indicator Calibration Specifications

1 Scope

This specification applies to the temperature of a temperature sensor signal such as a thermocouple, a thermal resistor, or a temperature transmitter output signal Display instrumentation, including calibration of the temperature display part of the process measurement control system. Accepts DC voltage or current process information the secondary instrument shown on the number can be calibrated with reference to this specification.

2 references

This specification refers to the following documents.

JJG617-1996 Digital Temperature Indicating Controller JJG951-2000 Analog Temperature Indicating Controller Thermocouples Part 1. Indexing Tables GB/T 16839.1-1997 JB/T 8622-1997 Technical conditions and indexing table for platinum resistance resistors JB/T 8623-1997 Technical conditions and index table for industrial copper thermal resistance for dated references, only the dated edition applies this specification; for undated references, the latest version (including all amendments) applies to this specification.

3 Overview

Temperature display instrument is an industrial process measurement instrument, also known as temperature secondary instrument. The meter itself cannot be alone to measure the temperature, it must match the temperature sensor and accept its signal to measure the temperature. Instrument input signal is a standard Qualified and normative signals usually

include compliance with International Electrotechnical Commission (IEC) standards, national standards, industry standards Qualified thermal resistance, thermocouple signals, and standardized (current, voltage) signals, and recognized standardization in specific fields signal. When the instrument is connected to the thermocouple to measure the temperature, it usually has the function of automatic compensation of the reference temperature.

The external cold junction compensator is directly connected to the thermocouple.

The types of thermal resistors commonly used today include Pt100, Pt500, Pt1000, Cu50, Cu100, etc.

The corresponding relationship of resistance (referred to as the index table, the same below) follows the JB/T 8622-1997 and JB/T 8623-1997 standards.

Quasi-required; common types of thermocouples are B, S, R, K, N, E, J, T, etc., and their temperature and potential values correspond to each other.

The relationship follows the requirements of the GB/T 16839.1-1997 standard; the instrument accepts a standardized DC signal as current 4mA~20mA, voltage 1V~5V and so on.

The characteristics of the instrument according to the temperature display can be divided into two major categories of digital instruments and analog instruments. Digital display meter press Classification of resolution, common resolution 0.1 °C and 1 °C. Analog display methods include pointer indications, ribbon indications, and There are three types of beam indicators, full scale indication and deviation indication combined with the set value.

The input signal of the instrument can be single, it can be compound, or it can be operated according to the specification.

Key settings.

Instrumentation block diagram shown in Figure 1.