

ICS 17.200
CCS A 54

JJG

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

JJG 131-2004

Replacing JJG 131-1991

**Verification Regulation of the Electric Contact Mercury-in-Glass
Thermometers
(English Translation)**

Issued on: March 2, 2004

Implemented on: September 2, 2004

**Issued by: The General Administration of Quality Supervision, Inspection
and Quarantine issued, This regulation was approved by the General
Administration of Quality Supervision, Inspection and Quarantine on
March 2, 2004, and**

Table of Contents

1 Scope (1)	
2 Citations (1)	
3 Terms (1)	
4 Overview (1)	
4.1 Principles (1)	
4.2 Construction (1)	
5 Metrological performance requirements (2)	
5.1 Indication stability (2)	
5.2 Indication error (4)	
5.3 Motion Error (4)	
5.4 Insensitive area (4)	
6 General technical requirements (4)	
6.1 Scales and signs (4)	
6.2 Glass casing, temperature sensitive bulbs and capillary tubes (5)	
6.3 Temperature and temperature sensitive liquid column (5)	
6.4 Adjusting device (5)	
7 Measuring instrument control (5)	
7.1 Verification conditions (5)	
7.2 Verification project (5)	
7.3 Verification method (5)	
7.4 Processing of verification results (8)	
7.5 Verification cycle (8)	
Appendix A Electric Contact Glass Mercury Thermometer Verification Certificate (inside page) format (9)	
Appendix B Electric Contact Glass Mercury Thermometer Verification Result Notification (inside page) format (10)	
Appendix C Evaluation of Uncertainty in Measurement Results of Temperature Correction Value of Electrical Contact Glass Mercury Thermometer (11)	

7.5 Verification cycle (8)

Appendix A Electric Contact Glass Mercury Thermometer Verification Certificate (inside page) format (9)

Appendix B Electric Contact Glass Mercury Thermometer Verification Result Notification (inside page) format (10)

Appendix C Evaluation of Uncertainty in Measurement Results of Temperature Correction Value of Electrical Contact Glass Mercury Thermometer (11)

Electric contact glass mercury thermometer verification procedures

1 Scope

This procedure is applicable to electrical contact glass mercury thermometers with various ranges ranging from -30 °C to 300 °C.

The first verification, subsequent verification and in-use inspection of the thermometer are referred to below. Fixed-point thermometer without scale can refer to this procedure is calibrated or tested.

2 Citations

Citations to this procedure JB/T 9264-1999 "Electrical Contact Glass Thermometer" Use of this procedure should take care to use the current valid version of the above cited documents.

3 terms

Scale. A combination of a set of lines, numbers, and unit of measure (°C) on a thermometer to indicate temperature values.

Scale plate. The internal standard glass thermometer is printed with a flat, colored (such as milky white) sheet.

Scale line. A line imprinted on a glass rod or scale to indicate temperature values.

Scale value. A number imprinted on a glass rod or scale to indicate the temperature value.

Master scale. The scale of the measurement range section.

Auxiliary scale. The scale set for measuring the zero indication.

Excavation line. scale line other than the upper and lower limits.

Immersion line. A rod-type immersion thermometer is used to indicate the marking line of the immersion position.

Exposing the liquid column. The thermometer is exposed to the liquid column outside the measured medium during the measurement.

Intermediate bubble. an enlarged part of the inner diameter of the capillary, which functions to accommodate part of the temperature sensitive liquid in order to shorten the length of the capillary degree.

Safety bubble. the enlarged part of the top of the capillary, the role is when the measured temperature exceeds the upper limit of the thermometer when protecting the thermometer, it will not be damaged.

4 Overview

4.1 Principle

The electric contact glass mercury thermometer is used to change the temperature of the mercury in the transparent glass bulb and the capillary.

The effect of thermal expansion and contraction is to measure the temperature. There are two contacts in the thermometer, one on the temperature-sensitive mercury column.

The end face, the other is at any set position of the scale plate. When the ambient temperature changes, the temperature of the mercury column rises or falls.

Drop, causing the two contacts to turn on or off. The electrical equipment can be controlled by the supporting control device.

4.2 Construction

The thermometer is divided into two types. adjustable and fixed. Commonly adjustable and fixed construction diagrams are shown in Figure 1 and

Figure 2 shows.