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

GB/T 24297-2009

**The test method for thermal deflection rate of spiral and helix
coils of thermostat bimetal**

热双金属螺旋形元件热偏转率试验方法

(English Translation)

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Foreword

This revised standard adopts ASTM B389. 1981 "Thermal bimetallic spiral element heat deflection test method" (2004 review confirm).

This standard is based on ASTM B389. redraft 1981 (2004 review confirm). The standard lists the reg number and in Appendix B ASTM B389. 1981 List of control clauses numbered.

This standard and ASTM standards are used by major technical differences, see Appendix C.

--- Within our industry requirements applicable test equipment, canceled the ASTM standard pointer angle at each test temperature location Accuracy requirement of 0.25 °;

--- Is coordinated with the relevant standards, temperatures T1, T2 when the angle indicated by the symbols A1, A2 to 1, 2.

The Standard Appendix A, Appendix B and Appendix C are informative appendices.

The standard proposed by China Electrical Equipment Industrial Association.

This standard by the National Standardization Technical Committee for Electrotechnical alloy (SAC/TC228) centralized.

This standard was drafted. Baoshan Iron & Steel Co., Ltd., Shanghai Electric Division electrician Material Co., Ltd., Shanghai Electric Co., Ltd., and Yun, Gui Lin Electric Institute of Science, Foshan Electrical Precision Alloy Co., Ltd.

1 Scope

This standard specifies the principle of thermal bimetal spiral element heat deflection measurement, methods and equipment requirements.

This standard applies to the determination of thermal bimetal thermal deflection rate flat spiral element and straight helical element also applies to the thickness of less than Metal temperature measuring 0.3mm hot double curvature.

This standard is to determine the number of thermal bimetal spiral element of acceptance or rejection of quality inspection instruments.

This standard helps determine the amount of deflection in a spiral element material of optimal thickness and length.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2900.4 Electrotechnical terminology - Electrical Alloy GB/T 4461 heat the bimetal strip

3 Terms and Definitions

GB/T 2900.4 and established the following terms and definitions apply to this standard.

Thermal bimetal narrow along its longitudinal direction to the side to keep the plane perpendicular to the axis formed by spirally wound member. Low production Expansion of the outer layer may also be included. One end of the fixed member and the other end is a free end, when the temperature changes, the free end with a change in temperature into Line deflection. Appendix A in Figure A. 1 is mounted on the sample holder of the flat spiral element.

Thermal bimetal narrowband wound tubular helix (or coils). The production of low expansion outer layer may also be included, it can be made into a left spiral or right spiral. Appendix A in Figure A. 2 is installed in a straight helical elements of sample holder.

4 Measuring principle

The end of the spiral-shaped element fixed sample, measuring the angle of rotation of the other end of the sample at a certain temperature difference.

5.1 Bath temperature

One kind of energy or stirred tank thermostat uniform heating cabinet, the bath can be placed on the sample holder and adjustable heating source. Use adjustable heating Source, the sample can be maintained at the required temperature throughout the test in the bath temperature should be controlled within ± 0.3 °C of.

5.2 Angle measuring device

One kind of test can measure the temperature at different locations protractor, the minimum scale of 0.5 °.

5.3 Temperature measuring device

By the precision mercury thermometers or other temperature measurement instrument composed of accuracy should not be less than 0.3 °C.