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

GB/T 30090-2013

**Standard guide for temperature electromotive force (emf) tables
for non-letter designated thermocouple combinations**

无字母代号热电偶分度表

(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

The Standard is a modified ASTM E1751 use the translation method 2000 No letter code combination of temperature thermocouple thermal emf table (Standard guide for temperature electromotive force (EMF) tables for non-letter designated thermo-couple combinations).

The standard in the development of the structure of the text made editorial changes.

This standard ASTM E1751 technical differences are.

--- Remove the gold - platinum and platinum - palladium two kinds of thermocouples, the remaining 7 kinds of thermocouple was no difference in the technical characteristics of the original standard;

--- Added "2 Normative references" to "Appendix A" "Appendix B";

--- Rewrite "3 Terms and Definitions";

--- Deleted the original "4 Significance and Use" "8 keywords";

--- Original standard "3 Data Sources" "5 thermocouple type" "6 thermal emf - temperature tolerance initial value" of the content of this standard moved Quasi "4 indexing table Information". Also delete the Fahrenheit indexing table indexing formulas and coefficients of each thermocouple. Detailed repair Change the contents of Appendix B.

The standard proposed by China Machinery Industry Federation.

This standard by the national industrial process measurement and control Standardization Technical Committee (SAC/TC124) centralized.

This standard was drafted. Shanghai Industrial Automation Instrument Research Institute, Chongqing Instrument Materials Research Institute, Shanghai Institute of Measurement and Testing Technology, the Sea Automation Instrumentation Co., Ltd., Zhejiang Lunte Electrical Co., Ltd., Zhaoqing Automation Instrumentation Co., Ltd. West Instrument Group Co., Ltd. Company SECRETARY instrument factory, Factory Yueqing City, east China, seventeen Chongqing Sichuan Instrument Co., Ltd., Anhui Rand (Group) Co., Ltd.

1 Scope

This standard specifies no letter code thermocouples special purpose - thermal electromotive force (emf) relationship.

This standard applies to special-purpose non-letter code thermocouple.

This standard does not apply to extend or compensating leads.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 25475 Industrial Automation Instrumentation term Thermometers

3 Terms and Definitions

GB/T 25475 and defined by the following terms and definitions apply to this document.

Matching matchedpairs One pairs of selected positive and negative thermal electrode, constituted by a thermocouple on first use can meet the required temperature - thermal emf relationship and a predetermined tolerance.

4.1 Thermocouple Types

This standard includes the following indexing table.

- 1) Platinel original EngelhardCorp.SpecialtyMetalsDiv. Trademarks.
- 2) KP positive hot electrode type K thermocouples.
- 3) alloy composition expressed as a percentage by mass, with the exception of gold 0.07 iron, which is an atomic percentage.

No. Thermocouple Type Temperature Range

Table 1 Tungsten - rhenium 26 0 °C ~ 2315 °C

Table 2 Platinel1) II 0 °C ~ 1395 °C

Table 3 KP2) - Gold and Iron 0.073) -273 °C ~ 7 °C

Table 5- 4 platinum molybdenum 0.1 0 °C ~ 1600 °C

Table 5 platinum and rhodium 40- platinum and rhodium 20 0 °C ~ 1888 °C

Table 6 nickel-cobalt-nickel-molybdenum 18- 0.8 -50 °C ~ 1410 °C

Table 7 Iridium Iridium rhodium 40- 0 °C ~ 2110 °C

Polynomial coefficients calculated in Table 8 Temperature (°C) thermocouple electromotive force as a function of the