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

GB 9816.1-2013

Replacing GB/T 9816.1-2013

Thermal-links - Part 1: Requirements and application guide

热熔断体 第1部分：要求和应用导则

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting:

This document is Part 1 of GB/T 9816 "Thermal Links": GB/T 9816 has issued the following parts:

- Part 1: Requirements and application guidelines;
- Part 2: Special requirements for organic temperature-sensitive thermal fuses;
- Part 3: Special requirements for fusible metal temperature-sensitive thermal-links:

This document replaces GB/T 9816.1-2013 "Thermal links Part 1: Requirements and application guidelines", and GB/T 9816.1-2013 in comparison, except for structural adjustments and editorial changes, the main technical changes are as follows:

- a) The expression about Appendix H has been added in the scope (see Chapter 1);
- b) Changed the definition of "holding temperature" (see 3.3, 3:3 of the:2013 edition);
- c) Added the requirements for thermal link packaging components (see 4.4);
- d) Change the number of samples required for the type test, change the test sequence and sample groups in Table 1, and divide the suspension section;

Added the applicability description of each appendix (see Chapter 5, Chapter 5 of the:2013 edition);

- e) Added the terms of electrical conditions (see 6.1);
- f) The requirements for the tracking resistance index of materials have been changed (see 6.3, 6:3 of the:2013 edition);
- g) Added the position of the metal screen in the document, and some special thermal fuse installation application instructions (see Chapter 8);
- h) Changed the chapter title to "Structure Requirements" (see Chapter 9, Chapter 9 of the:2013 edition), and changed the structure of Chapters 9 and 10 and the sequence of test items (see Chapter 9 and Chapter 10, Chapter 9 and Chapter 10 of the:2013 edition);
- i) Added requirements for contacts used in current paths (see 9.3);
- j) Increased accessible mounting brackets or metal parts (see 9.4);

- k) Added requirements for insulating materials (see 9.5);
- l) Added minimum requirements for tracking resistance index (PTI) (see 9.6, 10:5 of the:2013 edition);
- m) Changed the title of the article as "Temperature and Humidity Cycle Treatment" and changed the test requirements (see 9.8, 10:2 of the:2013 edition);
- n) Added requirements for terminals and ends (see 9.9);
- o) Added the requirements for test parts of electric strength and insulation resistance (see 10.1:1 and 10:2:1, 10:3 and 10:4 of the:2013 edition);
- p) Increase the applied voltage part (see Table 4);
- q) Changed the grounding requirements for breaking current test [see 10.3:2:1 and 10:3:2:2, 10:6:2a), b) of the:2013 edition];
- r) Changed the open circuit voltage requirements of the breaking current test circuit [see 10.3:2:4, 10:6:2c) of the:2013 edition];
- s) Added tolerance requirements (see 10.3:2:5);
- t) Changed the requirements for the breaking current test and added the requirements for the thermal link after the test [see 10.3:2:9 and 10:3:2:12, :2013 version 10:6:2g)];
- u) Added the load type of the test current for the breaking current test (see Table 5);
- v) Added compliance requirements for limited short-circuit test (see 10.5:4);
- w) The requirements for the maximum operating temperature of thermal link packaging components have been added (see 11.1:9);
- x) Added the sample specifications for breaking current test (see 13.3, 13:2 of the:2013 edition);
- y) Changed the temperature coefficient requirements in the seal aging test (see Appendix E:2, Appendix E of the:2013 edition);
- z) Changed the attribute of Appendix G from informative to normative (see Appendix G, Appendix G of the:2013 edition);
- aa) The requirements for thermal link packaging components have been added (see Appendix H):

This document is modified to adopt IEC 60691:2023 "Guidelines for Requirements and Application of Thermal Links":

The technical differences between this document and IEC 60691:2023 and the reasons are as follows:

- a) Added "This document specifies the terms and definitions, classification, structural requirements, electrical requirements, temperature test, anti-rust technology of thermal links "Technical Requirements" to meet the requirements of GB/T 1.1 (see Chapter 1);
- b) Replaced IEC 61210:2010 with the normatively quoted GB/T 17196-2017 to adapt to my country's technical conditions and increase operability workability (see 9.1:2);
- c) Replaced IEC 60112:2020 with the normatively quoted GB/T 4207 to adapt to my country's technical conditions and increase operability (see 9.6:2);
- d) Replaced IEC 60127-2:2014 with the normatively quoted GB/T 9364.2-2018 to adapt to my country's technical conditions, increase Operability (see 10.3:2)
- e) Replaced IEC 60695-2-12:2021 with the normatively quoted GB/T 5169.12-2013 to adapt to my country's technical conditions, increase Add operability (see Appendix H);
- f) Replaced IEC 60695-2-13:2021 with the normatively quoted GB/T 5169.13-2013 to adapt to my country's technical conditions, increase Add operability (see Appendix H):

The following editorial changes have been made to this document:

- a) Replace IEC 60664-1:2007 with the informative referenced GB/T 16935.1-2008 (see Table 3);
- b) Replace IEC 60065:2014 (see Appendix A) with the informative reference of GB 8898:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

As a non-resettable one-time action thermal protection device, the thermal fuse is an irreplaceable and important over-temperature protection component:

Widely used in household appliances and industrial equipment; when the electrical equipment fails or is abnormal, the heat exceeds the set allowable temperature , rely on thermal fuses to actively cut off the circuit for protection, so as to avoid the danger of damaging the safety of electrical equipment: Therefore, the production of thermal fuses Product quality and performance are directly related to the safety of the whole machine and even the safety of people and the environment:

GB/T 9816 aims to standardize the technical requirements for thermal links, and is intended to be composed of three parts:

--- Part 1: Requirements and application guidelines: The purpose is to specify the general requirements, structural requirements, electrical requirements and other technical requirements of thermal fuses Require:

--- Part 2: Special requirements for organic temperature-sensitive thermal links: The