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

GB/T 20840.14-2022

**Instrument transformers - Part 14: Additional requirements for
current transformers for DC applications**

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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 of Standardization Documents" drafted.

This document is part 14 of GB/T 20840 "Transformer". GB/T 20840 has released the following parts.

- Part 1. General technical requirements;
- Part 2. Supplementary technical requirements for current transformers;
- Part 3. Supplementary technical requirements for electromagnetic voltage transformers;
- Part 4. Supplementary technical requirements for combined transformers;
- Part 5. Supplementary technical requirements for capacitive voltage transformers;
- Part 6. Supplementary general technical requirements for low-power transformers;
- Part 7. Electronic voltage transformers;
- Part 8. Electronic current transformers;
- Part 9. Digital interface of transformers;
- Part 14. Supplementary technical requirements for DC current transformers;
- Part 15. Supplementary technical requirements for DC voltage transformers;
- Part 102. Ferromagnetic resonance in substations with electromagnetic voltage transformers;

--- Part 103. The application of transformers in power quality measurement.

This document is revised and adopted IEC 61869-14:2018 "Transformers - Part 14. Supplementary technical requirements for DC current transformers".

Compared with IEC 61869-14:2018, this document has more structural adjustments. List of structural changes between the two files

See Appendix 14A.

Compared with IEC 61869-14:2018, this document has many technical differences. In the outer margins of the clauses involved, vertical

A straight single line (|) is marked. See Appendix 14B for a list of these technical differences and their reasons.

The following editorial changes have been made to this document.

--- The content of the introduction has been adjusted;

--- The content of paragraphs 1 and 4 of Chapter 1 has been rewritten, and the content of paragraph 3 and the last sentence of paragraph 4 have been replaced by the text.

Adjusted to Note;

--- Adjust "Note 1" in 3.1.1402, 3.3.1401, 3.3.1403, 3.4.1401, 3.5.1402, 3.5.1403 to "Note";

--- Adjusted the footnote form and symbol description form of T_{sr} and T_s in Figure 1404 of 3.5.1401;

--- The order of symbols in 3.7 has been adjusted;

--- Modified the punctuation between the values in 5.5.602, 5.5.1401, 5.6.1402 and 5.6.1403;

--- Adjusted the content of Note 5.5.1401;

--- Added numbers to the two notes in 5.6.1404.1 and 5.6.1404.2 respectively;

--- The content of the note in 6.6.1 has been adjusted;

--- Adjusted the header format of Table 7 of IEC 61869-14:2018;

--- Adjusted the headings of 6.13.1401 and 6.13.1403, and added a header to Table 1404;

--- Adjusted the item serial number in 6.13.1404;

--- The order of the test items in Table 10 of IEC 61869-14:2018 has been adjusted;

--- Change the unit of resistivity in the symbol description of the "penetration depth" calculation formula in Appendix 14A of IEC 61869-14:2018 by

"ohm/m" is corrected to "ohm.m";

--- The formulas in the full text are numbered uniformly, and the capitalization of formula symbols and the writing form of formulas have been revised;

--- References have been adjusted.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

0.1 Overview

The establishment of transformer standards is to establish a set of optimal evaluation criteria for transformers, and to provide transformers from raw material selection, design, production, etc.

Provide guidance on matters needing attention in production, inspection, selection, operation and maintenance. GB/T 20840 aims to specify the

The principles and related rules for design, manufacture, test, operation and maintenance are planned to be composed of 13 parts.

--- Part 1. General technical requirements. The purpose is to specify the requirements applicable to the design, manufacture and production test of various types of transformers.

General technical requirements to follow.

--- Part 2. Supplementary technical requirements for current transformers. The purpose is to specify complementary technologies applicable to various types of current transformers

Require.

--- Part 3. Supplementary technical requirements for electromagnetic voltage transformers. The purpose is to specify the application to various types of electromagnetic voltage transformers

supplementary technical requirements.

--- Part 4. Supplementary technical requirements for combined transformers. The purpose is to specify supplementary techniques applicable to various types of combined transformers.

technical requirements.

--- Part 5. Supplementary technical requirements for capacitive voltage transformers. The purpose is to stipulate that it is suitable for all kinds of capacitive voltage transformers

supplementary technical requirements.

--- Part 6. Supplementary general technical requirements for low-power transformers. The purpose is to specify the compensation applicable to various types of low-power transformers.

charging technical requirements.

--- Part 7. Electronic voltage transformers. The purpose is to specify supplementary technical requirements applicable to various types of electronic voltage transformers.

--- Part 8. Electronic current transformers. The purpose is to specify supplementary technical requirements applicable to various types of electronic current transformers.

--- Part 9. The digital interface of the transformer. The purpose is to specify the technical requirements applicable to the digital interface of various electronic transformers.

--- Part 14. Supplementary technical requirements for DC current transformers. The purpose is to specify the compensation applicable to various types of DC current transformers.

charging technical requirements.

--- Part 15. Supplementary technical requirements for DC voltage transformers. The purpose is to specify the compensation applicable to various types of DC voltage transformers.

charging technical requirements.

--- Part 102. Ferromagnetic resonance in substations with electromagnetic voltage transformers. The purpose is to

Provide guidance on the generation mechanism and suppression of ferromagnetic resonance in transformer substations.

--- Part 103. The application of transformers in power quality measurement. The purpose is to analyze the application of various transformers in power quality measurement.

Provide guidance on usage.

This document is consistent with GB/T 20840.1-2010 "Transformer Part 1. General Technical Requirements" and GB/T 20840.6-2017 "Mutual Inductance"

Part 6. Supplementary general technical requirements for low-power transformers. This document follows GB/T 20840.1-2010 and

The writing structure of GB/T 20840.6-2017 is an addition and modification to its corresponding clauses. When GB/T 20840.1-2010 or

When the terms of GB/T 20840.6-2017 are not mentioned in this document, as long as they are reasonable, these terms also apply to this document. Dangben

When the document indicates "addition", "modification" or "replacement", it means the relevant

The terms have been adapted accordingly in this document.

For the chapters, clauses, figures, tables, notes and appendices supplemented on the basis of GB/T 20840.1-2010 and GB/T 20840.6-2017, this