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

GB/T 20840.15-2022

**Instrument transformers - Part 15: Additional requirements for
voltage transformers for DC applications**

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3.1 General Definitions

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 15 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 61869-15:2018 "Transformers Part

15. Supplementary Technical Requirements for DC Voltage Transformers".

Compared with IEC 61869-15:2018, this document has more structural adjustments. List of structural changes between the two files

See Appendix 15A.

Compared with IEC 61869-15:2018, this document has many technical differences. In the outer margins of the clauses involved, vertical

A straight single line (|) is marked. See Appendix 15B 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 paragraph 1 of Chapter 1 has been rewritten, and the content of paragraph 4 has been adjusted from the main text to a note;
- Adjust "Note 1" in 3.4.1501 to "Note";
- Adjusted the footnote form and symbol description form of T_{sr} and T_s in Figure 1502 of 3.5.1501;
- Adjust "Note 1" in 3.5.1502 and 3.5.1503 to "Note";
- Added the introduction to 5.2;
- Modified the punctuation between the values in 5.5.602, 5.5.1501, 5.6.1502 and 5.1501;
- The content of the note in 6.6.1 has been adjusted;
- Adjusted the header format of Table 7 in IEC 61869-15:2018, and added the number of notes in the table;
- Adjusted the headings of 6.13.1501 and 6.13.1503, and added a header to Table 1503;
- The order of the test items in Table 10 in IEC 61869-15:2018 has been adjusted;
- Added a symbol description to Figure 1504 in 7.2.601, added a sub-graph number to Figure 1505, and corrected the relative relationship between the two sub-graph titles mutual location;
- Adjusted the footnote form of T_{sr} and T_s in Figure 1507 of 7.2.1503;
- Numbered the table of 7.3.5.1502 in IEC 61869-15:2018, and adjusted the unit "VDC" in the table to "V".

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

Introduction

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 technology applicable to various types of combined transformers

Require.

--- 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 specifications applicable to various types of DC voltage current transformers.

Supplementary 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

Documents use the following numbering format.

--- The numbering of chapters, bars, figures, tables and notes starts from 1501;

---Appendix numbers are 15A, 15B, etc.