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

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**DC current transformer use technical conditions
(English Translation)**

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Foreword

This standard is compiled in accordance with the requirements of GB/T 1.1-2009 "Guidelines for Standardization Part 1: Standard Structure and Compilation".

This standard was proposed by the China Electricity Council.

This standard is under the jurisdiction of the Power Transformer Standardization Technical Committee (DL/T C 02) of the power industry.

The main drafting organizations of this standard. China Electric Power Research Institute Co., Ltd., Power Industry Electrical Equipment Quality Inspection and Testing Center, State Grid Operation Branch Yibin Management Office, State Grid Operation Branch Yibin Management Office, State Grid Jilin Province Electric Power Co., Ltd. Electric Power Research Institute, South Fang Power Grid Scientific Research Institute Co., Ltd., China Southern Power Grid EHV Transmission Company, China Southern Power Grid Co., Ltd.

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1 Scope

This standard specifies the terms and definitions, use conditions, technical requirements, structure and selection requirements, tests, markings, and Use period, packaging, transportation and storage, etc.

This standard applies to the ordering, handover, acceptance, and transportation of DC current transformers for DC transmission systems with voltage levels of $\pm 1100\text{kV}$ and below.

Line and maintenance.

2 Normative references

The following documents are indispensable for the application of this standard. For dated reference documents, only the dated version applies to this standard quasi. For undated reference documents, the latest version (including all amendments) is applicable to this standard.

GB 311.1 Insulation coordination Part 1: Definitions, principles and rules GB/T 2900.50 Electrotechnical terminology Generic terminology for power generation, transmission and distribution GB/T 2900.57 Electrician Terminology Power Generation, Transmission and Distribution Operation GB/T 2900.94 Electrical terminology transformer GB/T 4798.3 Environmental conditions for the application of electrical and electronic products Part 3: Stationary use in places with climate protection GB/T 4798.4 Environmental conditions for the application of electrical and electronic products Part 4: Stationary use in non-climate protected places GB 4824 Industrial science and medical (ISM) radio frequency equipment electromagnetic disturbance characteristic measurement method and limit GB/T 13540 Seismic requirements for high-voltage switchgear and control equipment GB/T 16927.2-2013 High Voltage Test Technology Part 2: Measurement System GB/T 17626.2 Electromagnetic compatibility test and measurement technology Electrostatic discharge immunity test GB/T 17626.3 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test GB/T 17626.4 Electromagnetic compatibility test and measurement technology Electrical fast transient pulse group immunity test GB/T 17626.5 Electromagnetic compatibility test and measurement technology surge (impact) immunity test GB/T 17626.8 Electromagnetic compatibility test and measurement technology Power frequency magnetic field immunity test GB/T 17626.9 Electromagnetic compatibility test and measurement technology Pulse magnetic field immunity test GB/T 17626.10 Electromagnetic compatibility test and measurement technology Damped oscillation magnetic field immunity test GB/T 17626.11 Electromagnetic compatibility test and measurement technology Voltage sag, short-term interruption and voltage change immunity test GB/T 17626.12 Electromagnetic compatibility test and measurement technology oscillating wave immunity test GB/T 17626.13

Electromagnetic compatibility test and measurement technology AC power port harmonics, interharmonic waves and low frequency immunity test of power grid signals GB/T 17626.29
 Electromagnetic compatibility test and measurement technology DC power input port voltage sag, short-term interruption and voltage change immunity Degree test GB 20840.1
 Transformer Part 1: General technical requirements GB 20840.2 Transformers Part 2: Supplementary technical requirements for current transformers GB/T 20840.8-2007
 Transformer Part 8: Electronic Current Transformer GB/T 21429 Definition, test methods, acceptance criteria and design recommendations of hollow composite insulators for outdoor and indoor electrical equipment GB/T 26216.1 DC current measuring device for high voltage direct current transmission system Part 1: Electronic DC current measuring device GB/T 26216.2 Direct current measuring device for high voltage direct current transmission system Part 2: Electromagnetic direct current measuring device GB/T 26218.1 Selection and size determination of high-voltage insulators used under dirty conditions Part 1: Definitions, information and general principles GB 50260 Code for seismic design of power facilities DL/T 1000.3 Guidelines for the use of insulators for overhead lines with a nominal voltage higher than 1000V. Part 3: Rod suspension composites for AC systems insulator

3 Terms and definitions

As defined by GB/T 2900.94, GB/T 2900.50, GB/T 2900.57, GB 20840.1, GB 20840.2 and GB/T 20840.8 and the following terms and definitions apply to this standard.

DC current transformer A device that provides information signals corresponding to the direct current of the primary loop, which can provide information for measuring instruments, meters, and protection or control equipment Information signal.

Electronic DC current transformer A DC current transformer, which is composed of one or more current sensors connected to a transmission system and a secondary converter to transmit positive Compared to the measured quantity, under normal use conditions, the output of the secondary converter is proportional to the primary loop DC current.

Electromagnetic DC current transformer the primary sensor uses the principle of electromagnetic induction to provide a signal corresponding to the primary DC current, and the signal is directly sent to itself through the cable in electronic equipment.

Maximum continuous voltage of equipment the highest DC voltage that the equipment can withstand for long-term operation.

Step response

When the input is a step wave signal, the relationship between the output of the system and time is shown in Figure 1.

Note 1: Rewrite GB/T 16927.2-2013, definition 3.5.3

Figure 1 Step response