

ICS 29.180
CCS K 41



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

GB/T 20840.99-2025

Instrument transformers - Part 99: Glossary

互感器第99部分：术语

(English Translation)

Issued on: February 28, 2025

Implemented on: September 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
3.1 Basic terms and definitions
3.2 Transformer types, components and details
3.3 Definition of current
3.4 Definition of voltage
3.5 Definitions related to accuracy
3.6 Other definitions
Index
Chinese Pinyin Index
English equivalents, abbreviations or symbols index
References

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 99 of GB/T 20840 "Transformers". GB/T 20840 has published 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 capacitor voltage transformers;
- Part 6: Supplementary general technical requirements for low power transformers;
- Part 7: Electronic voltage transformer;

- Part 8: Electronic current transformer;
- Part 9: Digital interface for transformers;
- Part 10: Supplementary technical requirements for low power passive current transformers
- Part 11: Supplementary technical requirements for low power passive voltage transformers
- Part 14: Supplementary technical requirements for DC current transformers;
- Part 15: Supplementary technical requirements for DC voltage transformers;
- Part 99: Terminology;
- Part 100: Application Guidelines for Current Transformers for Power System Protection;
- Part 102: Ferroresonance in substations with electromagnetic voltage transformers;
- Part 103: Application of transformers in power quality measurements.

This document is modified to adopt IEC 61869-99:2022 "Transformers - Part 99: Terminology".

The technical differences between this document and IEC 61869-99:2022 and their reasons are as follows.

- Added the term and definition of "3.1.3 Voltage sensor" to conform to the actual situation in my country;
- Change "transformers are designed to" to "transformers for DC applications having at least one of the following functions.", in "measuring DC Add "(including significant harmonics)" after "current and/or DC voltage", change "with or without AC component" to "withstand DC voltage" Pressure" to make the definition more precise (see 3.2.1);
- Add the term and definition of "3.2.11 Electromagnetic voltage transformer" to conform to the actual situation in my country;
- Adjust the definition to "winding to which the measured current or voltage is applied" (see 3.2.27);
- The Chinese name of the term adds "measuring current transformer" and the English name adds "formeasuringCT" (see 3.5.27).

In line with my country's actual situation;

- The Chinese name of the term has been added with "protective current transformer", the English name has been added with "forprotectiveCT", and the definition of "accurate the symbol "KALF" is added after "Limit coefficient" (see 3.5.28) to conform to the actual situation in my country;

--- The Chinese name of the term adds "(for transformer)" and the English name adds "(for IT)" (see 3.5.42) to conform to the actual situation in my country Condition;

Actual situation;

--- "relative to the rated primary short-circuit current peak" (see 3.5.51) has been added to the definition to conform to the actual situation in my country;

The following editorial changes were made to this document.

--- Replace the international documents in the "Source" and "Note" of some terms and definitions with Chinese standards;

--- Deleted "Note 2. In some countries (such as the United States), a conductor is used instead of the neutral point (grounding system corner) for grounding" (see 3.1.7);

--- In Note 1, adjust "(e.g., calculated neutral point current)" to "e.g., calculated neutral point current (self-generated zero-sequence current)" (see 3.1.12);

--- Adjust the "LPCT" in the note to "single-phase LPCT" (see 3.1.16);

--- Adjust the "LPVT" in the note to "single-phase LPVT" (see 3.1.17);

--- Adjust "between two points" to "output terminal" (see 3.1.21);

--- Deleted "temperature sensor" in the example (see 3.2.23);

--- Adjust the source of the term (see 3.4.10);

--- Delete "Note 1. For digital signals, the rated transformation ratio is 1" (see 3.5.5);

--- Adjust "expressed as a percentage (%)" in Note 1 to "expressed as a percentage of the root mean square value of the primary current (%)" (see 3.5.9);

--- The expression " $\epsilon = k_{rx} i_s - i_p$ " is added to the definition (see 3.5.50);

--- Correct "primary current" in Note 3 to the symbol U_n to "primary voltage" (see 3.5.56);

--- Correct "ysrmng" in the symbol description of item b) in Note 1 to "ysrmng(n)" (see 3.5.59);

--- Add Note 2 and adjust the square root in the expression in 3.5.68 to extend to the entire expression (see 3.5.67 and 3.5.68);

--- Correct "a) and b)" in the diagram symbol description in Note 1 to "a and b" (see 3.5.80);

--- A Chinese index arranged in phonetic notation has been added to the appendix.

Introduction

The purpose of formulating the transformer standard is to establish a set of optimal evaluation criteria for the transformer, from raw material selection, design, production, etc.

GB/T 20840 aims to establish the requirements for transformers.

The principles and relevant rules to be followed in design, manufacturing, testing, operation and maintenance are planned to consist of 17 parts.

--- Part 1: General technical requirements. The purpose is to establish the requirements for the design, manufacture and production testing of various types of transformers.

General technical requirements to be followed.

--- Part 2: Supplementary technical requirements for current transformers. The purpose is to establish supplementary technical requirements applicable to various types of current transformers.

Require.

--- Part 3: Supplementary technical requirements for electromagnetic voltage transformers. The purpose is to establish the requirements applicable to various types of electromagnetic voltage transformers.

Supplementary technical requirements.

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

Require.

--- Part 5: Supplementary technical requirements for capacitor voltage transformers. The purpose is to establish the requirements applicable to various types of capacitor voltage transformers.

Supplementary technical requirements.

--- Part 6: Supplementary general technical requirements for low power transformers. The purpose is to establish supplementary general technical requirements applicable to various types of low power transformers.

Fill in the general technical requirements.

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

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

--- Part 9: Digital interfaces for transformers. The purpose is to establish technical requirements for digital interfaces applicable to various types of electronic transformers.

--- Part 10: Supplementary technical requirements for low power passive current