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

GB/T 20840.10-2025

**Instrument transformers - Part 10: Additional requirements for
low-power passive current transformers
(English Translation)**

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative references	
3 Terms and Definitions	
5 Rating	
6 Design and Structure	
7 Test	
601 Inquiry, Bidding and Ordering Notes	
Appendix 10A (Informative) Comparison of this document with IEC 61869-10:2017 structure number	
Appendix 10B (Informative) Technical differences between this document and IEC 61869-10:2017 and their causes	
Appendix 10C (Informative) Working Principle of Rogowski Coil	
Appendix 10D (Informative) Working Principle of Low Power Iron Core Current Transformer (Proportional LPCT)	
Appendix 10E (Informative) Nominal accuracy class using corrected ratio and ratio correction factor	
Appendix 10F (Normative) Accuracy test related to the position of the primary conductor	
Reference	
Figure 1001 General block diagram of single-phase low-power passive current transformer	
Figure 1002 Terminal marking	
Figure 1003 Test arrangement for the influence of adjacent phase magnetic field	
Figure 10C.1 Equivalent circuit of a Rogowski coil	
Figure 10C.2 Integral and non-integral output signals of a Rogowski coil	
Figure 10C.3 Frequency dependence test of Rogowski coil	
Figure 10D.1 Principle of iron core current transformer	
Figure 10D.2 Equivalent circuit of an iron core current transformer with voltage output	
Figure 10E.1 Improvement of nominal accuracy based on its own ratio correction factor CFI	
Figure 10E.2 Accuracy test of passive LPCT	
Figure 10E.3 Accuracy class 1 based on rated transformation ratio	

Figure 10E.4 Accuracy class 27 based on the ratio correction factor and the corrected ratio with a nominal value of 0.1

Figure 10F.1 Definition of the angle between the primary conductor and the passive LPCT

Figure 10F.2 Schematic diagram of primary conductor position corresponding to position factor

Figure 10F.3 Accuracy measurement test arrangement

Table 1001 Passive LPCT ratio difference and phase error limits for measurement

Table 1002 Ratio difference and phase error limits for passive LPCT protection

Table 1003 Pinout of RJ45 connector for passive LPCT

Table 11 Test Item

Table 1004 Items required to determine passive LPCT performance

Table 10A.1 Comparison of structure numbers between this document and IEC 61869-10:2017

Table 10B.1 Technical differences between this document and IEC 61869-10:2017 and their causes

Table 10E.1 Transformation ratios, ratio differences based on average values and corresponding primary currents

Table 10E.2 Ratio difference, ratio correction factor and ratio difference based on ratio correction factor

Table 10F.1 Passive LPCT primary conductor position factor limits

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 10 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: Ferroresistance in substations with electromagnetic voltage transformers;
- Part 103: Application of transformers in power quality measurements.

This document is modified to adopt IEC 61869-10:2017 "Transformers - Part 10: Supplementary technical requirements for low power passive current transformers" beg".

Compared with IEC 61869-10:2017, this document has many structural adjustments. Comparison table of structural changes between the two documents See Appendix 10A.

This document has many technical differences compared with IEC 61869-10:2017.

A list of these technical differences and their reasons is given in Appendix 10B.

The following editorial changes were made to this document.

- The order of symbols has been adjusted (see 3.7);
- Change "phitdr is 0" to "the phase shift (phitdr) caused by the rated delay time is 0" (see 5.6.1001);
- The header format of Table 1001 and Table 1002 has been adjusted (see 5.6.1003.3 and 5.6.1004.4);
- Change the title of Table 1002 from "Error Limits" to "Protection Passive LPCT Ratio Difference and Phase Error Limits", Composite the error symbols "epsilon_{nc}, epsilon_{ncorl}" are corrected to "epsilon_{nc}, epsilon_{ncorl}" (see 5.6.1004.4);
- Added "Note. Derivative type LPCT preferably uses 150mV" (see 5.1004);
- Change "Example 2.5P31000A of passive LPCT for protection, Example 3.0.2/5P31000A of multi-purpose passive LPCT" to Change to "Example 2.5P31500A of passive LPCT for protection, Example 3.0.2(5P 31500A)" (see 6.13.1005);
- Added the introductory sentence of Table 1003. "Table 1003 gives the pin assignment of

passive LPCT using RJ45 type connector" (see 6.602.1);

--- Correct (I_{2t} x 1s) to (I_{2t} x t_{th}) and add "where t_{th} is the specified duration of the rated short-time thermal current (I_{th})" (see 7.2.1001);

--- The format of Table 1004 was adjusted, and the definition item number corresponding to CFI was corrected from "3.4.1003" to "3.4.1001";

--- Adjust the text content in the upper part of Figure 10A.1 of IEC 61869-10:2017 to the title of the sub-figure, and correct "LPPC" to "LPCT";

---Correct "1%" and "0.1%" in the titles of Figures 10A.3 and 10A.4 of IEC 61869-10:2017 to "1" and "0.1%" respectively "0.1", and the curve position was corrected;

--- The format of Table 10A.2 of IEC 61869-10:2017 was adjusted and some data were corrected;

--- Correct the symbol "RB" for high impedance load in Figure 10B.1 of IEC 61869-10:2017 to "R_b";

--- The winding symbol in Figure 10C.1 and the inductance symbol in Figure 10C.2 of IEC 61869-10:2017 have been adjusted;

--- Replace the "low power passive current transformer" that appears repeatedly in the text with the abbreviation "passive LPCT";

---The formulas in the whole text are numbered;

--- Replaced IEC 61869-8 with the informative reference GB/T 20840.8 (see Chapter 1, Table 1003);

--- Replaced IEC 61869-6:2016 with the informative reference GB/T 20840.6-2017 (see 5.6.1001, 5.6.1003.3,

--- Replaced IEC 61869-2 with the informative reference GB/T 20840.2 (see Note to Table 1002);

--- Replaced IEC 61869-7 with the informative reference GB/T 20840.7 (see Table 1003);

--- Replaced IEC 60028 with the informative reference GB/T 5585.1 (see 7.2.1001);

--- Replaced IEC 60121 with the informative reference GB/T 3954 (see 7.2.1001).

Introduction

The purpose of formulating the transformer standard is to establish a set of optimal evaluation criteria for the transformer, and to provide a reference for the selection of raw materials, design, production and GB/T 20840 aims to specify the precautions applicable to transformers.