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

GB/T 17215.241-2025

**Electricity metering equipment - General requirements, tests
and test conditions - Part 41: Energy registration methods and
requirements for multi-energy and multi-rate meters**

电测量设备 通用要求、试验和试验条件 第41部分：多电能和多费率仪表的电能
计度方法和要求

(English Translation)

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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 for standardization documents" Drafting.

This document is part 41 of GB/T 17215.2. GB/T 17215.2 has been published in the following parts.

--- Electrical measuring equipment (AC) General requirements, tests and test conditions Part 11: Measuring equipment (GB/T 17215.211);

--- Electrical measuring equipment (AC) General requirements, tests and test conditions Part 21: Rate and load control equipment (GB/T 17215.221);

--- Electrical measuring equipment (AC) General requirements, tests and test conditions Part 31: Product safety requirements and tests (GB/T 17215.231);

--- General requirements, tests and test conditions for electrical measuring equipment Part 41: Energy measurement methods for multi-energy and multi-rate meters and requirements (GB/T 17215.241).

This document is equivalent to IEC 62052-41:2022 "General requirements, tests and test conditions for electrical measuring equipment Part 41: Multi-electrode measurement equipment "Electricity metering methods and requirements for energy and multi-rate meters".

The following minimal editorial changes were made to this document.

---3.3.2, deleted "Example. 15min, 30min";

--- Added footnote b to Table 2 to make the table applicable to active energy accuracy using Class A, Class B, Class C, Class D and Class E markings, etc.

Level electric energy meter;

---Added references.

Introduction

GB/T 17215.2 is intended to specify the general requirements, tests and test conditions for electrical energy measuring equipment. GB/T 17215.2 is intended to consist of the following parts Divided into components.

--- Electrical measuring equipment (AC) General requirements, tests and test conditions Part 11: Measuring equipment. The purpose is to specify AC General technical requirements and test conditions for type testing of electric energy meters.

--- Electrical measuring equipment (AC) General requirements, tests and test conditions
Part 21: Rate and load control equipment.

It specifies general requirements for type testing of newly manufactured rate and load control equipment.

--- Electrical measuring equipment (AC) General requirements, tests and test conditions
Part 31: Product safety requirements and tests.

Used to specify product safety requirements for electrical energy measuring equipment and control equipment.

--- General requirements, tests and test conditions for electrical measuring equipment Part 41: Energy measurement methods for multi-energy and multi-rate meters the purpose is to specify the type tests for newly manufactured multi-energy and/or multi-rate static energy meters.

This document is the standard for type testing of electric energy meters, and is intended to ensure the minimum test level of the meter under normal working conditions;

Other test levels in applicable cases are to be agreed upon between the user and the manufacturer.

This document is intended to be used in conjunction with relevant parts of GB/T 17215.2, GB/T 17215.3 and IEC 62055-31.

When any requirement of this document involves clauses already covered in GB/T 17215.2, GB/T 17215.3 and the relevant parts of IEC 62055-31, this document shall prevail.

The requirements shall prevail.

This document is to be used in conjunction with the relevant parts of the following electrical measuring equipment series of standards.

---GB/T 17215.211 Electrical measuring equipment (AC) General requirements, tests and test conditions Part 11: Measuring equipment;

---GB/T 17215.221 General requirements, tests and test conditions for electrical measuring equipment (AC) Part 21: Rate and load control Control equipment;

---GB/T 17215.231 General requirements, tests and test conditions for electrical measuring equipment (AC) Part 31: Product safety requirements and trials;

---GB/T 17215.311 Particular requirements for alternating current measuring equipment Part 11: Electromechanical active energy meters (Class 0.5, 1 and 2);

---GB/T 17215.321 Particular requirements for electrical measuring equipment (AC) Part 21: Static active energy meters (Class A, Class B, C, D and E);

---GB/T 17215.323 Particular requirements for electrical measuring equipment (AC) Part

23: Static reactive energy meters (level 2 and 3);

---GB/T 17215.324 Particular requirements for electrical measuring equipment (AC) Part

24: Static fundamental component reactive energy meter (0.5S, 1S, 1, 2 and 3);

---GB/T 17215.811 Acceptance inspection of alternating current measuring equipment Part 11: General acceptance inspection method;

---GB/T 17215.821 Acceptance test of alternating current measuring equipment Part 21: Particular requirements for electromechanical active energy meters (0.5 level, 1 level and 2 level);

---GB/T 17215.831 Acceptance test of AC measuring equipment Part 31: Special requirements for static active energy meters (0.2S level, 0.5S level, 1 level and 2 level);

--- GB/T 17215.911 Reliability of electrical measuring equipment Part 11: General concepts;

--- GB/T 17215.921 Reliability of electrical measuring equipment Part 21: Field instrument reliability data collection;

---GB/T 17215.9311 Reliability of electrical measuring equipment Part 311: Temperature and humidity accelerated reliability tests;

---GB/T 17215.9321 Reliability of electrical measuring equipment Part 321: Durability - Stability of metrological characteristics at high temperatures test.

General requirements, tests and test conditions for electrical measuring equipment Part 41: Multi-energy and multi-rate meters Energy metering methods and requirements

1 Scope

This document is only applicable to type testing of newly manufactured multi-energy and/or multi-rate static energy meters (hereinafter referred to as "meters").

Note 1: For other general requirements of instruments, such as electrical, mechanical, safety, identification, reliability, etc., see IEC 62052 (all parts) or IEC 62059 (all parts).

For the accuracy requirements of instruments and the special requirements for instruments of each accuracy class, see the relevant parts of IEC 62053 (all parts).

This document applies to the following electrical energy measuring equipment.

---Measure and control the electric energy in the power grid with AC voltage of 1000V or DC voltage of 1500V and below;

Note 2: For AC energy meters, the above voltage is the line-to-neutral voltage derived from the nominal voltage, see Table 7 in GB/T 17215.231-2021.

NOTE 3 For instruments designed for use with low power instrument transformers [LPIT, see IEC