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

GB/T 47790.31-2026

**Electricity metering - Payment systems - Part 31: Particular
requirements - Static payment meters for active energy (classes
0.5, 1 and 2)**

电测量 付费系统 第31部分：特殊要求 静止式有功付费电能表（0.5级、1级和2级
）

(English Translation)

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Table of Contents

Foreword	
Introduction	
1 Scope	
2 Normative references	
3 Terms and Definitions	
3.1 General Paid Measurement Definition	
3.3 Token Carrier Definition	
3.4 Definitions of Tokens and Token Carriers	
3.5 Measuring equipment switch	
3.6 Definitions related to clock and rate control	
4 Electrical nominal values	
5 Structural Requirements	
5.1 General Requirements	
5.2 Creepage Distance and Clearance	
5.3 Dustproof and waterproof	
5.4 Display of measured values	
5.5 Storage of measured values	
5.6 Output Devices	
5.7 Electricity meter markings	
5.8 Token Carrier Interface	
6 Climate conditions	
6.1 General Requirements	
6.2 Temperature Range	
6.3 Relative humidity	
6.4 Prevents the penetration of dust and water	
7 Electrical Requirements	
7.1 General Requirements	
7.2 Influence of Power Supply Voltage	
7.3 Temperature rise	
7.4 Insulation	
7.5 Long-term overvoltage	
7.6 Electromagnetic Compatibility (EMC)	

- 7.7 Power Consumption
- 7.8 The effect of self-heating on accuracy
- 7.9 Electrical testing of power control switches and load control switches (SCS and LCS)
- 7.10 Auxiliary Control Switch (ACS)
- 7.11 Token Carrier Receiver Interface Test
- 8 Accuracy requirements
- 9 Functional Requirements
- 9.1 General Requirements
- 9.2 Robustness of the electricity meter billing process
- 10 Type testing
- Appendix A (Informative) Functional Characteristics
- A.1 Basic Functions -- Prepaid Mode
- A.3 System Compatibility Requirements
- Appendix B (Informative) Reference Model for Paid Electricity Meters
- B.1 Overview
- B.2 Example of a general-purpose prepaid electricity meter
- B.3 Functions of Single-Component Paid Electricity Meters
- Appendix C (Normative) Requirements for Paid Electricity Meters with Power Control Switches
- Appendix D (Normative) Timing Requirements
- D.1 General Requirements
- D.2 Synchronous Clock
- D.3 Crystal Clock
- D.4 Timing Accuracy Test
- D.5 The impact of interference on timing
- References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 31 of GB/T (Z) 47790 "Electrical Measurement Payment System". GB/T 47790 has already published the following parts.

--Part 21: Standardization Framework;

--Part 31: Special requirements for static active charge meters (Class 0.5, Class 1 and Class 2).

Energy meters (Class 0.5, Class 1, and Class 2).

The following minimal editorial changes have been made to this document.

--Delete items a) and b) from terminology 3.4.3.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Electrical Instruments and Meters (SAC/TC 104).

Introduction

GB/T (Z) 47790 "Payment System for Electrical Measurement Equipment" provides standardization for payment systems for electrical measurement equipment and is proposed to consist of the following 6 parts.

constitute.

--Part 21: Standardization Framework. The aim is to define a standardized architecture for electrical measurement payment systems, providing guidance for manufacturers and users.

Comparison and evaluation provide interoperability.

Available credits are reduced based on the amount of electricity consumed or the operating time.

--Part 41: Standard Transport Specification (STS) - Application Layer Protocol for One-Way Token Carrier Systems. Its purpose is to determine billing and metering.

The system's one-way token carrier system application layer protocol provides standard transmission specifications to clearly define the relationship between the point of sale (POS) device and the payment system.

Requirements and formats for information transmitted between fee tables.

--Part 42: Transaction Reference Number (TRN). Its purpose is to define encoding rules, interface protocols, and security mechanisms for electrical measurement payments.

The fee system provides a unified transaction identification solution.

--Part 51: Standard Transport Specification (STS) Physical layer protocol for one-way digital and magnetic card token media. The purpose is to standardize...

Equipment coding ensures that encryption keys used within the electricity sales system can

be securely generated, stored, retrieved, and transmitted.

--Part 52: Standard Transport Specification (STS) A physical layer protocol for direct-local, two-way virtual token carriers. Its purpose is to...

The protocol specifies the communication protocol for transmitting electricity sales revenue and other management information between the client and server.

Pay-per-use electricity meters are applicable when users and suppliers reach an agreement on a payment price, and the pay-per-use electricity meter controls the power supply.

Interruption or recovery. The prepaid electricity meter is part of the payment system, which uses a token carrier to transmit payment information as a token to the electricity grid.

The process of transmitting data between billing meters also includes meter billing.

The function of a pay-per-use electricity meter is to measure energy consumption and reduce available credit based on the amount of electricity consumed or the duration of operation. Payment is made to the electricity company.

After the transaction, the available credit value increases, and the electricity meter continuously calculates the user's available credit balance. When the available credit value decreases to a certain level, the payment...

When the preset values related to the billing mode are met, the load switch will trip to cut off the power supply. However, billed electricity meters have some other features, such as preventing or delaying...

Delaying the disconnection of switches limits subsequent power consumption to a low-load state. This "social" characteristic includes providing emergency credit arrangements, work...

It is designed for fixed-payment models and uninterrupted power supply during designated periods.

Through payment (usually in cash) and relying on a specific type of system, users obtain payment and access via a single token carrier.

(i.e., the so-called virtual token carrier). This utilizes both "one-way" and "two-way" data transmission systems, and the token carrier is, for example, a smart card or other...

The physical device of an electronic device or magnetic card, a virtual token carrier that transmits token information using a remote communication system, is issued and communicated in written form.

A digital token carrier in which a sequence of numbers is entered via buttons on the table.

Chapter 17 of IEC TR 62051:1999 provides some detailed terminology for payable electricity meters.

Electrical Measurement Payment System Part 31: Special Requires a static active power