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

GB/T 17215.610-2018

**Electricity metering data exchange -- The DLMS/COSEM suite --
Part 10: Smart metering standardisation framework**

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Foreword

GB/T 17215 "AC measuring equipment" is divided into several parts, GB/T 17215.6 "Electrical measurement data exchange DLMS/COSEM

Components are divided into the following sections.

- Part 10. Intelligent Measurement Standardization Framework;
- Part 11. DLMS/COSEM communication configuration standard template;
- Part 31. Local area network use based on twisted pair carrier signals;
- Part 46. Data link layer using HDLC protocol;
- Part 47. DLMS/COSEM transmission layer based on IP network;
- Part 53. DLMS/COSEM application layer;
- Part 61. Object Identification System (OBIS);
- Part 62. COSEM interface class;
- Part 73. Wired and wireless M-Bus communication configurations for local and community networks;
- Part 76. HDLC-based connection-oriented three-layer communication configuration;
- Part 91. Communication configuration using the WEB service to access the COSEM server via CAS;
- Part 97. Communication configuration based on TCP-UDP/IP network.

This part is the 10th part of GB/T 17215.6.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the translation method equivalent to IEC 62056-1-0:2014 "Electrical Measurement Data Exchange DLMS/COSEM Component Part 1-0

Points. Standardization Framework for Intelligent Measurements.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

--- GB/T 17215.631-2018 Electrical measurement data exchange DLMS/COSEM components - Part 31. Based on twisted pair

Local area network use of carrier signals (IEC 62056-3-1..2013, IDT);

---GB/T 17215.646-2018 Electrical measurement data exchange DLMS/COSEM components - Part 46. Using HDLC

Data link layer of the protocol (IEC 62056-4-6.2007, IDT);

---GB/T 17215.653-2018 Electrical Measurement Data Exchange DLMS/COSEM Components Part 53. DLMS/CO-

SEM application layer (IEC 62056-5-3..2017, IDT);

--- GB/T 17215.661-2018 Electrical measurement data exchange DLMS/COSEM components - Part 61. Object identification

OBIS (IEC 62056-6-1..2017, IDT);

---GB/T 17215.662-2018 Electrical measurement data exchange DLMS/COSEM components - Part 62. COSEM

Mouth class (IEC 62056-6-2.2017, IDT);

---GB/T 17215.676-2018 Electrical measurement data exchange DLMS/COSEM components - Part 76. Based on HDLC

Connection-oriented Layer 3 communication configuration (IEC 62056-7-6.2013, IDT);

--- GB/T 17215.697-2018 Electrical measurement data exchange DLMS/COSEM components - Part 97. Based on TCP-

Communication configuration of UDP/IP network (IEC 62056-9-7..2013, IDT);

--- GB/T 19897.4-2005 Automatic meter reading system - Low-level communication protocol - Part 2. s.

Domain network use (IEC 62056-31.1999, IDT);

---DL/T 790.432-2004 Distribution automation using distribution line carriers - Part 4-32. Data communication protocol - Data link

Layer-Logic Link Control (IEC 61334-4-32.1996, IDT);

---DL/T 790.51-2002 Distribution automation using distribution line carrier Part 5. Low-level protocol set Part 1. Spreading

Type Frequency Shift Keying (S-FSK) protocol (IEC 61334-5-1..2001, IDT).

This section has made the following editorial changes.

---The standard name was changed from part 1-0 to part 10;

Introduction

As the number of smart metering deployments increases, secure and interoperable data exchange between different system components becomes critical. apart from

Supporting supplier-consumer contract execution and providing necessary billing data, smart meters have also become valuable letters for the effective operation of smart grids

Source of interest.

Increases in applications that rely on measurement data, resulting in more and more data in intelligent measurement systems and via interfaces and other systems

Exchange. In order to adapt to different communication channels, the intelligent measurement system does not generate any data incompatibility for the supported applications.

Taking into account the growth requirements of smart metering and smart grid applications, the standards in the IEC 62056 DLMS/COSEM components have continued

Improvements and expansions. In particular, the object-oriented COSEM data model has expanded to support new smart measurement and smart grid use cases.

Interface class. The application layer has been enhanced with advanced security features to provide scalable security for a wide range of applications over a wide range of communication channels.

all. With the introduction of the "communication configuration" concept, the IEC 62056 DLMS/COSEM component provides a way to connect different communication channel standards.

Method, these standards have a consistent DLMS/COSEM data model.

This section summarizes the principles established by the IEC 62056 standard and sets rules for future expansion to ensure consistency.

Intelligent measurement is an important part of smart grid and smart home. To ensure a letter between different applications and roles in the energy market

For efficiency and safety of information flow, it is necessary to coordinate and unify the standards set by the corresponding standardization committee. In particular, the intelligent measurement system

Provides interfaces to power and non-electrical meters, home automation, substation automation, and distribution management systems. Coordinated as a definition

Prerequisites for smart grid and smart home interfaces, the standardized concepts described in this section should ensure consistency within the scope of smart measurements.

The IEC 62056 DLMS/COSEM component standard has been developed by IEC /TC13 for electrical measurement purposes. Some standards

Quasi---especially the COSEM data model---is also used by other non-electricity measurement technical committees.

The IEC 62056-XY series of standards corresponds to the national standard GB/T 17215.6XY series.

Electrical measurement data exchange DLMS/COSEM component

Part 10. Smart Measurement Standardization Framework

1 Scope

This part of GB/T 17215.6 specifies the use cases for intelligent measurements and their systems. The system is based on IEC 62056.

The standard support of the DLMS/COSEM series stipulates the data exchange of the meter. The standardization framework described in this section includes.

- Formulate the relevant principles of these standards;
- Expand existing standards to facilitate support for new use cases and compatibility with new communication technologies while maintaining compliance with existing standards;
- Interoperability and information security related aspects.

This section also provides guidance on the selection of appropriate standards for specific interfaces within the intelligent measurement system.

Other measurement aspects covered by IEC TC13, such as metering requirements, testing, safety and credibility, are outside the scope of this section.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

IEC 61334-4-32 Distribution automation using distribution line carriers - Part 4-32. Data communication protocol

Link Control (LLC) [Distributionautomationusingdistributionlinecarriersystem-Part