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

GB/T 17215.631-2018

Replacing GB/T 19897.2-2005

**Electricity metering data exchange -- The DLMS/COSEM suite --
Part 31: Use of local area networks on twisted pair with carrier
signalling**

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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 31st part of GB/T 17215.6.

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

This part replaces GB/T 19897.2-2005 "Automated meter reading system low-level communication protocol Part 2. Based on twisted pair carrier signal

The use of LAN, the main technical changes compared with GB/T 19897.2-2005 are as follows.

--- Added a protocol structure that uses the DLMS/COSEM application layer of IEC 62056 and the COSEM object model;

--- Redefine the data link layer, which is divided into two parts.

* pure data link layer;

* Management support entities that manage the media.

--- Negotiate the transmission rate, you can increase the baud rate to 9600 baud.

This section uses the translation method equivalent to IEC 62056-3-1.2013 "Electrical Measurement Data Exchange DLMS/COSEM Components Section 3-1

Part. LAN Usage Based on Twisted Pair Carrier Signals.

The documents of our country that have a consistent correspondence with this section are as follows.

---GB/T 15127-2008 Telecommunication and information exchange between information technology systems Twisted pair multi-point interconnection (ISO /IEC 8482.1993, 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);

---DL/T 790.441-2004 Distribution automation using distribution line carriers - Part 4-41. Data communication protocol application layer

Protocol - Distribution Line Message Specification (IEC 61334-4-41.1996, IDT).

This section has made the following editorial changes.

--- The standard name was changed from Section 3-1 to Part 31;

1 Scope

This part of GB/T 17215.6 specifies three protocol structures for local bus data exchange between active stations or passive stations. Which for none

The source station will be powered by the bus for data exchange.

Support for three different structures.

---Basic structure. This three-layer protocol structure provides remote transmission services;

Note 1. This protocol structure has been published in the basic protocol IEC 61142.1993 and has become the famous Euridis standard.

---With DLMS structure. This structure allows the use of DLMS services, as described in detail in IEC 61334-4-41;

Note 2. This protocol structure has been published in IEC 62056-31.1999.

--- with DLMS/COSEM structure. this structure allows the use of DLMS/COSEM application layer and COSEM object model,

Each is described in detail in IEC 62056-5-3.2013 and IEC 62056-6-2.2013.

The three protocol structures use the same physical layer and are fully compatible, which means that devices implementing these protocol structures can be in the same

Run on a bus.

The transmission medium is a twisted pair using a carrier signal, which is called an Euridis bus.

2 Normative references

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

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

IEC 61334-4-41.1996 Distribution automation using distribution line carrier systems Part 4. Data communication protocols Section 41.

Application Protocol Distribution Line Message Specification
(Distributionautomationusingdistributionlinecarriersystems-Part

4 Datacommunicationprotocols-Section41. Applicationprotocols-Distributionlinemessagespec-

Identification)

IEC 62056-51.1998 Electrical measurement data exchange, meter reading, rate and load control - Part 51. Application layer protocol

(Electricitymeteringdataexchangeformeterreading,tariffandloadcontrol-Part 51.Application Layerprotocols)

IEC 62056-5-3.2013 Electrical Measurement Data Exchange DLMS/COSEM Components Part 5-3. DLMS/COSEM

Use layer (Electricity metering data exchange - The DLMS/COSEM suite - Part 5-3.
DLMS/COSE Map -

Protocol layer)

ISO / IEC 8482.1993 Telematics and information exchange between information technology
systems - Twisted pair multi-point interconnection (Information
technology - Telecommunications and information exchange between systems - Twisted pair
Multipoint interconnections)

EIA485 Standard for balancing the electrical characteristics of transmitters and receivers of
digital multipoint systems (Standard for electrical

Characteristics of generators and receivers for use in balanced digital multipoint systems)