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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/Z 17215.652-2022

Electricity metering data exchange - The DLMS/COSEM suite - Part 52: Communication protocols management distribution line message specification (DLMS) server

电测量数据交换 DLMS/COSEM组件 第52部分：通信协议管理配电线报文规范（DLMS）服务器

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Standardization Administration of the PRC

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Foreword

This document was issued on 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 July 2023.

It is a GB/Z guiding technical document: it does not oblige, it guides.

It is classified under ICS 17.220.20, Chinese classification N22.

Introduction

At present, energy conservation, emission reduction, low-carbon, environmental protection and the establishment of a sustainable society have become a global consensus. Countries are actively building regional energy

management system to promote the efficient and scientific use of energy. On this basis, IEC /TC57, TC13 and EN/TC294 jointly established

DLMS/COSEM energy measurement system transmission protocol, in which the electric energy part is defined by IEC 62056 "Electrical measurement data exchange DLMS/

COSEM Components" was completed, and the non-electric part was completed by EN13757 "Instrument Communication System". In order to establish a global unified and open interoperability

As a result, countries around the world have successively transformed IEC 62056 into their

own national standards. my country converts IEC 62056-XY into

GB/T 17215.6XY.

GB/T 17215 "Alternating Current Measuring Equipment" is divided into several parts, GB/T 17215.6 "Electrical Measurement Data Exchange DLMS/

COSEM Components is proposed to be composed of the following 25 parts.

--- Part 10.Intelligent measurement standardization framework. The purpose is to understand the relevant aspects of this series of standard architecture, interoperability, information security, etc.

information.

--- Part 11.DLMS/COSEM communication configuration standard template. The purpose is to establish communication configuration standards to follow

template.

--- Part 31.Use of local area network based on twisted pair carrier signal. The purpose is to use the twisted pair carrier signal of the local area network to follow

specification.

--- Part 41.Data exchange using WAN. Public Switched Telephone Network (PSTN) with LINK protocol. intended to use

A specification followed by the Public Switched Telephone Network with the LINK protocol.

--- Part 42.Physical layer service process for connection-oriented asynchronous data exchange. The purpose is to establish a physical

The specification that the layer join process should follow.

--- Part 46.Data link layer using HDLC protocol. The purpose is to use the HDLC asynchronous communication protocol set to follow the data

Link layer specification.

--- Part 47.DLMS/COSEM transport layer based on IP network. DLMS/

The specification followed by the COSEM transport layer.

--- Part 51.Application layer protocol. The purpose is to give the communication architecture between the transport layer and metering equipment described in DL/T 790.441

application layer.

--- Part 52.Communication Protocol Management Distribution Line Message Specification (DLMS) server. The purpose is to provide IEC 62056-31,

The protocol management DLMS server of IEC 62056-41 and IEC 62056-51 is consistent

and different from DL/T 790.441.

--- Part 53.DLMS/COSEM application layer. The purpose is to give the application of DLMS/COSEM client and server

Layer structure, services and protocols.

--- Part 58.Smart Message Language (SML). The purpose is to give the structure of SML based on XML grammar for use in TCP/IP

internet language.

--- Part 61.Object Identification System (OBIS). The purpose is to specify a unique identifier for data in electrical measuring equipment.

--- Part 62.COSEM interface class. The purpose is to specify the instrument model and construct the instrument function in the form of interface class.

--- Part 69.Common information model message set (IEC 61968-9) and DLMS/COSEM (IEC 62056) data model and agreement

Mapping between sessions. The purpose is to provide the mapping between CIM and DLMS/COSEM required for ERP information exchange of the main station.

--- Part 73.Wired and wireless M-Bus communication configurations for local and community networks. Intended to use wired and wireless M-

The specification that the mode of the bus follows.

--- Part 75.Local data transmission configuration of the local network (LN). The intent is to use the specification followed by the local networking mode.

--- Part 76.HDLC-based connection-oriented three-layer communication configuration. The purpose is to use HDLC's connection-oriented

The specification followed by the DLMS/COSEM three-tier model.

--- Part 82.Mesh communication configuration for community networks. The purpose is to use the specifications followed by the wireless mesh mode.

--- Part 83.Community network PLCS-FSK communication configuration. The purpose is to use the specification followed by the PLCS-FSK model.

--- Part 84.Narrowband OFDMPRIMEPLC communication configuration for community networks. The purpose is to use OFDMPRIME

The specification that the PLC mode follows.

--- Part 85.Community network narrowband OFDMG3-PLC network communication configuration. The purpose is to use OFDMG3-PLC mode

The specification to follow.

--- Part 86.Community network high-speed PLCISO /IEC 12139-1 configuration. Intended to use PLCISO /IEC 12139-1

The specification that the pattern follows.

--- Part 88.Communication configuration of ISO /IEC 14908 series network. The intent is to use the ISO /IEC 14908 schema following the

specification.

--- Part 91.Communication configuration for accessing DLMS/COSEM server via COSEM Access Service (CAS) using Web services

place. The intent is to adopt the specification that the Web server pattern follows.

--- Part 97.Communication configuration based on TCP-UDP/IP network. The purpose is to use the TCP-UDP/IP mode to follow

specification.

Electrical Measurement Data Exchange DLMS/COSEM Components

Part 52.Communication protocol management distribution line message

Specification (DLMS) server

1 Scope

GB/Z 17215.652-2022 describes the server side of the DLMS protocol used to exchange electricity metering data - the consistency block, the DLMS objects a server carries, and the remaining parameters. The object clauses are taken one at a time: VDE management, DS management, VAA management, and the variable objects that hold the readings and settings. The document places this server against the DLMS model of DL/T 790.441-2004 and records where it departs from it, and it works together with GB/T 17215.631-2018, IEC TS 62056-41:1998 and GB/Z 17215.651-2022. A meter and the head-end system that interrogates it are normally built by different companies, sometimes in different countries, and they meet only over the wire; if the two sides disagree about which objects exist and how they are named, the meter is simply unreadable, and a utility finds this out after the units are already on customers' walls. Being a GB/Z guiding technical document rather than a mandatory one, it is reference material rather than a compliance test: meter firmware developers, head-end and data collection vendors, and the test houses that check interoperability before a rollout are the people who need it.

This document provides the requirements for GB/T 17215.631-2018, IEC TS62056-41.1998 and GB /Z 17215.651-2022

The protocol manages all specific information for the DLMS server. The server is in all