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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

GB/T 26831.1-2011

Social energy metering for reading system specification-

Part 1: Data exchange

社区能源计量抄收系统规范

第一部分：数据交换

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Contents

Foreword

GB/T 26831 *Society energy metering for reading system specification* includes four parts:

Part 1: Data exchange

Part 2: Physical layer and link layer

Part 3: Dedicated application layer

Part 4: Super-reading of instrument

This standard is formulated by referring to EN 13757, in which part 1, 2 and 3 refer to respectively the parts corresponding to EN 13757-1, EN 13757-2 and EN 13757-3 and part 4 has been largely revised by combination of current technical status of domestic wireless meter reading and national wireless communications standards.

This Part is GB/T 26831.1—2011 *Society energy metering for reading system specification Part 1: Data exchange.*

Annex A and C are normative annexes and annex B is informative annex.

This part is proposed by China Machinery Industry Federation.

This part shall be under jurisdiction of National Electrical Instrument Standardization Technical Committee (SAC/TC 104).

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Society energy metering for reading system specification

Part 1: Data exchange

1 Scope

This part specifies the data exchange and communication used for instrument and remote meter reading with a general method.

This part is part 1 of Society energy metering for reading system specification.

The part 1 mainly plays a role in providing a protocol specification for application layer of instrument.

Note: As the standard for remote meter reading of electric energy meter is included in IEC/CENELEC, this part does not include electric energy meter.

2 Normative References

The following standards contain provisions which, through reference of this part in GB/T 26831, constitute provisions of this standard. At time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

GB/T 7421-2008 Information technology - Telecommunications and information exchange between systems-High-level data link control (HDLC) procedures（ISO/IEC 13239:2002, IDT）

GB/T 9387.1-1998 Information Technology-Open Systems Interconnection-Basic Reference Model-Part1: The Basic Model (ISO/IEC 7498-1:1994, IDT)

GB/T 15629.2-2008 Information technology- Telecommunications and information exchange between systems-Local and metropolitan area networks - Specific requirements-Part 2: Logical link control（ISO/IEC 8802-2:1998, IDT）

GB/T 16262.1-2006 Information technology - Abstract Syntax Notation One (ASN.1) - Part 1: Specification of basic notation (ISO/IEC 8824-1:2002, IDT)

GB/T 16687.1-2008 Information technology - Open systems interconnection - Connection-oriented protocol for the association control service element - Part 1: Protocol specification（ISO 8650-1:1996, IDT）

GB/T 16688-2008 Information technology - Open systems interconnection - Service

definition for the association control service element（ISO/ IEC 8649 :1996, IDT)

GB/T 16720.1-2005 Industrial automation systems--Manufacturing message specification--Part 1:Service definition（ ISO 9506-1: 2003, IDT)

GB/T 18657.2 2002 Telecontrol equipment and systems--Part 5:Transmission protocols--Section 2:Link transmission procedures(IEC 60870-5-2 :1992, IDT)

GB/T 19882.31-2007 Automatic meter reading system—Part 3-1:Application layer data exchange protocols—Object identification system (IEC 62056-61:2002, IDT)

GB/T 19882.32-2007 Automatic meter reading system—Part 3-2:Application layer data exchange protocols—Interface clasess（IEC 62056-62 :200 2, IDT)

GB/T 19882.33-2007 Automatic meter reading system—Part 3-3:Application layer data exchange protocol—COSEM application layer (IEC 62056-53 :2002, IDT)

GB/T 19897.1-2005 Automatic meter reading system lower layer communication protocol-Part 1:direct local data exchange（IEC6205 6-21 :2002, IDT)

GB/T 19897.2-2005 Automatic meter reading system lower layer communication protocol—Part 2:Use of area networks on twisted pair with carrier signalling (IEC 62056-31:1999,IDT)

GB/ T 19897.3-2005 Automatic Meter Reading System Lower Layer Communication Protocol Part 3:Physical layer services and procedures for connection oriented asynchronous data exchange(EC 62056-42 :2002, IDT)

GB/T 19897. 4-2005 Automatic meter reading system lower communication protocol—Part 4:Data link layer using HDLC protocol(IEC 62056-46 :2002, IDT)

DL/T790.41-2002 Distribution automation using distribution line carrier systems -- Part 4: Data communication protocols -- Section 1: Reference model of communication system （EC 61334-4-1:1996, IDT)

DL/T 790. 441-2004 Distribution automation using distribution line carrier systems -- Part 4: Data communication protocols -- Section 41: Application protocols -- Distribution line message specification（IEC 61334-4-41:1996, IDT)

DL/T 790.6-200X Distribution automation using distribution line carrier system – Part 6:A-XDR encoding rule（IEC 61334-6:2000, IDT)

ISO 1155 Information processing -- Use of longitudinal parity to detect errors in

information messages

ISO 1177 Information processing -- Character structure for start/stop and synchronous character oriented transmission

ISO 1745 Information processing -- Basic mode control procedures for data communication systems

ISO/ IEC 646 Information technology -- ISO 7-bit coded character set for information interchange

EN 834 Heat cost allocators for the determination of the consumption of room heating radiators. Appliances with electrical energy supply

EN 1434-1 Heat meters. General requirements

EN 1434-2 Heat meters. Constructional requirements

EN 12405 Gas meters - Conversion devices

EN 13757-2 :2002 Communication systems for and remote reading of meters Part2: Physical and link layer, twisted pair baseband(M-Bus)

3 Terms and Definitions

The terms and definitions established in annex C are applicable to this part.

4 Overview

The environment which is applicable to this part, namely is to use non-routing method metering units in a network to implement remote meter reading.

4.1 Basic vocabulary

All communications include two types of devices, which are presented by terms Caller and Called. The caller is a system which decides to communicate with a remote system named Called. The two terms are continuously effective during the continuous communication.

One communication contains a certain number of transactions. Each transaction is presented by a transmission from Transmitter to Receiver. During continuous transactions, the Caller system and the Called system takes turn to act as Transmitter and Receiver.

The term Client and Server has the same meaning with DLMS model in DL/T 790.441. Server is a system (instrument), which acts as a VDE submitting all special service requests. The Client is a system (sampling system) and use the Server by one or several

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