

# INTERNATIONAL STANDARD

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**Electricity metering –  
Data exchange for meter reading,  
tariff and load control –**

**Part 42:  
Physical layer services and procedures  
for connection-oriented asynchronous  
data exchange**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING – DATA EXCHANGE  
FOR METER READING, TARIFF AND LOAD CONTROL –**

**Part 42: Physical layer services and procedures for  
connection-oriented asynchronous data exchange**

## FOREWORD

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- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this International Standard may involve the use of a maintenance service concerning the stack of protocols on which the present standard IEC 62056-42 is based.

The IEC takes no position concerning the evidence, validity and scope of this maintenance service.

The provider of the maintenance service has assured the IEC that he is willing to provide services under reasonable and non-discriminatory terms and conditions for applicants throughout the world. In this respect, the statement of the provider of the maintenance service is registered with the IEC. Information (see also 6.3.3) may be obtained from:

DLMS<sup>1</sup> User Association  
Geneva / Switzerland  
www.dlms.ch

International Standard IEC 62056-42 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

The text of this standard is based on the following documents:

FDIS	Report on voting
13/1266/FDIS	13/1272/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

<sup>1</sup> Device Language Message Specification.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A and B are for information only.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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## ELECTRICITY METERING – DATA EXCHANGE FOR METER READING, TARIFF AND LOAD CONTROL –

### Part 42: Physical layer services and procedures for connection-oriented asynchronous data exchange

#### 1 Scope

This part of IEC 62056 specifies the physical layer services and protocols within the Companion Specification for Energy Metering (COSEM) three-layer connection-oriented profile for asynchronous data communication. The document does not specify physical layer signals and mechanical aspects. Local, implementation-specific issues are also not specified.

In annex A, an example of how this physical layer can be used for data exchange through the Public Switched Telephone Network (PSTN) using intelligent Hayes modems is given.

The use of the physical layer for the purposes of direct local data exchange using an optical port or a current loop physical interface is specified in IEC 62056-21.

Annex B gives an explanation of the role of data models and protocols in electricity meter data exchange.

#### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-300:2001, *International Electrotechnical Vocabulary – Electrical and electronic measurements and measuring instruments – Part 311: General terms relating to measurements – Part 312: General terms relating to electrical measurements – Part 313: Types of electrical measuring instruments – Part 314: Specific terms according to the type of instrument*

IEC/TR 62051:1999, *Electricity metering – Glossary of terms*

IEC 62056-21, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*<sup>1</sup>

IEC 62056-46, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 46: Data link layer using HDLC protocol*<sup>1</sup>

IEC 62056-53, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 53: COSEM application layer*<sup>1</sup>

IEC 62056-61, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 61: OBIS Object identification system*<sup>1</sup>

IEC 62056-62, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 62: Interface objects*<sup>1</sup>

NEMA C12.21:1999, *Protocol Specification for Telephone Modem Communication*

<sup>1</sup> To be published.