

INTERNATIONAL STANDARD

IEC
62056-61

Second edition
2006-11

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

**Part 61:
Object identification system (OBIS)**

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IEC 62056-61:2006

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Reference number
IEC 62056-61:2006(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

W

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms, definitions and abbreviations	8
4 OBIS structure.....	8
4.1 General.....	8
4.2 Value group A	8
4.3 Value group B	8
4.4 Value group C	8
4.5 Value group D	9
4.6 Value group E	9
4.7 Value group F.....	9
4.8 Manufacturer specific codes	9
4.9 Reserved ranges	9
4.10 Summary of rules for manufacturer, utility, consortia and country specific codes	9
5 Value group definitions	11
5.1 Value group A	11
5.2 Value group B	11
5.3 Value group C	12
5.4 Value group D	15
5.5 Value group E	20
5.6 Value group F	25
5.7 Abstract objects	26
5.8 Electricity-related general purpose objects	29
5.9 List objects.....	32
5.10 Data profile objects	32
5.11 Register table objects.....	33
Annex A (normative) Code presentation.....	34
Bibliography.....	36
INDEX	37
Figure 1 – OBIS code structure.....	8
Figure 2 – Quadrant definitions for active and reactive power	15
Figure 3 – Model of the line and the transformer for calculation of loss quantities	22
Figure A.1 – Reduced ID code presentation.....	34
Table 1 – Rules for manufacturer, utility, consortia and country specific codes	10
Table 2 – Value group A codes	11
Table 3 – Value group B codes	11

Table 4 – Value group C codes – Abstract objects	12
Table 5 – Value group C codes – Electricity	13
Table 6 – Value group D codes – Electricity	15
Table 7 – Value group D codes – Consortia specific identifiers	18
Table 8 – Value group D codes – Country specific identifiers	19
Table 9 – Value group E codes – Tariff rates	20
Table 10 – Value group E codes – Harmonics	21
Table 11 – Value group E codes – Extended phase angle measurement	21
Table 12 – Value group E codes – Transformer and line loss quantities	23
Table 13 – Value group E codes – UNIPED voltage dip quantities	25
Table 14 – Abstract object codes	26
Table 15 – General error messages	28
Table 16 – General purpose codes – Electricity	29
Table 17 – Electricity related error messages	32
Table 18 – General list objects	32
Table 19 – Electricity related list objects	32
Table 20 – Profile codes – Abstract	32
Table 21 – Profile codes – Electricity	33
Table 22 – Register table object codes – Abstract	33
Table 23 – Register table object codes – Electricity	33
Table A.1 – Example of display code replacement	34
Table A.2 – Value group F – Billing periods	35

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 61: Object identification system (OBIS)

FOREWORD

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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 with applicants throughout the world. In this respect, the statement of the provider of the maintenance service is registered with the IEC. Information – see also 5.1 – may be obtained from:

DLMS¹ User Association

Geneva / Switzerland

www.dlms.ch

International Standard IEC 62056-61 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

¹ Device Language Message Specification

This second edition cancels and replaces the first edition published in 2002 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- some parts of the “Manufacturer specific” ranges have been changed to “Reserved” to open code space for future standard code purposes;
- “Utility specific” ranges have been allocated;
- “Consortia specific” codes similar to “Country specific” codes have been introduced;
- a table explaining the rules for “Manufacturer specific”, “Country specific” and “Consortia specific” codes has been added;
- new time integral types of quantities have been added, some definitions have been clarified;
- new OBIS codes to identify transformer and line loss quantities, voltage dips, power failures, statuses, etc. have been added;
- some list objects and profiles may be now abstract or electricity related;
- a second billing period counter mechanism has been added and the description of handling value group F has been amended.

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

FDIS	Report on voting
13/1388/FDIS	13/1399/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

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

INTRODUCTION

The competitive electricity market requires an ever-increasing amount of timely information concerning the usage of electrical energy. Recent technology developments enable to build intelligent static metering equipment, which is capable of capturing, processing and communicating this information to all parties involved.

For further analysis of this information, for the purposes of billing, load, customer and contract management, it is necessary to uniquely identify all data in a manufacturer independent way, collected manually or automatically, via local or remote data exchange.

The definition of identification codes is based on DIN 43863-3:1997.

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

Part 61: Object identification system (OBIS)

1 Scope

The Object Identification System (OBIS) defines the identification codes (ID-codes) for commonly used data items in electricity metering equipment. This part of IEC 62056 specifies the overall structure of the identification system and the mapping of all data items to their identification codes.

OBIS provides a unique identifier for all data within the metering equipment, including not only measurement values, but also abstract values used for configuration or obtaining information about the behaviour of the metering equipment. The ID codes defined in this standard are used for the identification of

- logical names of the various instances of the interface classes, or objects, as defined in IEC 62056-62;
- data transmitted through communication lines, see Clause A.1;
- data displayed on the metering equipment, see Clause A.2.

This standard applies to all types of electricity metering equipment, such as fully integrated meters, modular meters, tariff attachments, data concentrators, etc.

To cover metering equipment measuring energy types other than electricity, combined metering equipment measuring more than one type of energy or metering equipment with several physical measurement channels, the concepts of medium and channels are introduced. This allows meter data originating from different sources to be identified. While this standard fully defines the structure of the identification system for other media, the mapping of non-electrical energy related data items to ID codes needs to be completed separately.

NOTE EN 13757-1 defines identifiers for metering equipment other than electricity: heat cost allocators, cooling, heating, gas, cold water and hot water.

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 (IEV) – 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 instrument – Part 314: Specific terms according to the type of instrument*

IEC 61000-2-8:2002: *Electromagnetic compatibility (EMC) – Part 2-8: Environment – Voltage dips and short interruptions on public electric power supply systems with statistical measurement results*

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

IEC 62051-1:2004, *Electricity metering – Glossary of terms – Part 1: Terms related to data exchange with metering equipment using DLMS/COSEM*

IEC 62053-23:2003, *Electricity metering equipment (a.c.) – Particular requirements – Part 23: Static meters for reactive energy (classes 2 and 3)*

IEC 62056-21:2002, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*

IEC 62056-62 Ed. 2:2006, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 62: Interface classes*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-300, IEC 62051 and IEC 62051-1 apply.

3.2 Abbreviations

COSEM	COmpanion Specification for Energy Metering
IC	Interface Class
OBIS	OBject Identification System
VZ	Billing period counter

4 OBIS structure

4.1 General

OBIS codes identify data items used in energy metering equipment, in a hierarchical structure using six value groups A to F, see Figure 1.



Figure 1 – OBIS code structure

IEC 302/02

4.2 Value group A

The value group A defines the media (energy type) to which the metering is related. Non-media related information is handled as abstract data.

4.3 Value group B

The value group B defines the channel number, i.e. the number of the input of a metering equipment having several inputs for the measurement of energy of the same or different types (e.g. in data concentrators, registration units). Data from different sources can thus be identified. The definitions for this value group are independent from the value group A.

4.4 Value group C

The value group C defines the abstract or physical data items related to the information source concerned, for example current, voltage, power, volume, temperature. The definitions depend on the value of the value group A.

Further processing, classification and storage methods are defined by value groups D, E and F.

For abstract data, value groups D to F provide further classification of data identified by value groups A to C.

4.5 Value group D

The value group D defines types, or the result of the processing of physical quantities identified with the value groups A and C, according to various specific algorithms. The algorithms can deliver energy and demand quantities as well as other physical quantities.

4.6 Value group E

The value group E defines further processing or classification of quantities identified by value groups A to D.

4.7 Value group F

The value group F defines the storage of data, identified by value groups A to E, according to different billing periods. Where this is not relevant, this value group can be used for further classification.

4.8 Manufacturer specific codes

In value groups B, C, D, E and F the following ranges are available for manufacturer-specific purposes:

- group B: 128...199;
- group C: 128...199, 240;
- group D: 128...254;
- group E: 128...254;
- group F: 128...254.

If any of these value groups contain a value in the manufacturer specific range, then the whole OBIS code shall be considered as manufacturer specific, and the value of the other groups does not necessarily carry a meaning defined in this standard or in IEC 62056-62.

In addition, manufacturer specific ranges are defined in Table 14 with A = 0, C = 96 and Table 16 with A = 1, C = 96.

4.9 Reserved ranges

By default, all codes not allocated are reserved. ²

4.10 Summary of rules for manufacturer, utility, consortia and country specific codes

Table 1 summarizes the rules for handling manufacturer specific codes defined in 4.8, utility specific codes defined in 5.2, consortia specific codes defined in Table 7 and country specific codes defined in Table 8.

² Administered by the DLMS User Association (see Foreword).

Table 1 – Rules for manufacturer, utility, consortia and country specific codes

Code type	Value group						Note
	A	B	C	D	E	F	
Manufacturer specific	0, 1, 4..9	128...199	x	x	x	x	See Note 1
		x	128...199, 240	x	x	x	
		x	x	128...254	x	x	
		x	x	x	128...254	x	
		x	x	x	x	128...254	
Manufacturer specific abstract	0	0...64	96	50...99	0...255	0...255	See Note 2
Manufacturer specific, media related general purpose	1, 4..9	0...64	96	50...99	0...255	0...255	See Note 2
Utility specific		65...127					See Note 3
Consortia specific	0, 1, 4..9	1...64	93	See Table 7			See Note 4
Country specific		1...64	94	See Table 8			See Note 5
<p>NOTE 1 "x" means any value.</p> <p>NOTE 2 The range D = 50...99 is available for identifying objects, which are not represented by another defined code, but need representation on the display as well. If this is not required, the range D = 128...254 should be used.</p> <p>NOTE 3 If the value of B is 65...127, the whole OBIS code should be considered as utility specific and the value of other groups does not necessarily carry a meaning defined neither in IEC 62056-62 nor in this standard.</p> <p>NOTE 4 The usage of value group E and F are defined in consortia specific documents.</p> <p>NOTE 5 The usage of value group E and F are defined in country specific documents.</p>							

Objects for which this standard defines standard identifiers shall not be re-identified by manufacturer, utility, consortia or country specific identifiers.

On the other hand, an object previously identified by a manufacturer, utility, consortia or country specific identifier may receive a standard identifier in the future, if its use is of common interest for the users of this standard.