

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electricity metering data exchange – The DLMS/COSEM suite –
Part 6-1: Object Identification System (OBIS)**

**Échange des données de comptage de l'électricité – La suite DLMS/COSEM –
Partie 6-1: Système d'identification des objets (OBIS)**

<https://standards.iteh.ai/catalog/standards/sist/6299bd6b5-bd40-4e4d-9cb4-40dafa9fdd96/iec-62056-6-1-2015>



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2015 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 15 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

Plus de 60 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: csc@iec.ch.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electricity metering data exchange – The DLMS/COSEM suite –
Part 6-1: Object Identification System (OBIS)

Échange des données de comptage de l'électricité – La suite DLMS/COSEM –
Partie 6-1: Système d'identification des objets (OBIS)

<https://standards.iteh.ai/catalog/standards/sist/62056-6-1-2015>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 17.220; 35.110; 91.140.50

ISBN 978-2-8322-3011-4

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

| | |
|---|----|
| FOREWORD..... | 5 |
| INTRODUCTION..... | 7 |
| 1 Scope..... | 8 |
| 2 Normative references | 8 |
| 3 Terms, definitions and abbreviations | 9 |
| 4 OBIS code structure | 9 |
| 4.1 Value groups and their use..... | 9 |
| 4.2 Manufacturer specific codes | 10 |
| 4.3 Reserved ranges..... | 10 |
| 4.4 Summary of rules for manufacturer, utility, consortia and country specific codes..... | 10 |
| 4.5 Standard object codes..... | 11 |
| 5 Value group definitions – overview | 11 |
| 5.1 Value group A..... | 11 |
| 5.2 Value group B..... | 12 |
| 5.3 Value group C..... | 12 |
| 5.3.1 General | 12 |
| 5.3.2 Abstract objects | 13 |
| 5.4 Value group D..... | 13 |
| 5.4.1 General | 13 |
| 5.4.2 Consortia specific identifiers..... | 13 |
| 5.4.3 Country specific identifiers | 14 |
| 5.4.4 Identification of general and service entry objects..... | 15 |
| 5.5 Value group E..... | 15 |
| 5.6 Value group F..... | 15 |
| 5.6.1 General..... | 15 |
| 5.6.2 Identification of billing periods | 16 |
| 6 Abstract objects (Value group A = 0)..... | 16 |
| 6.1 General and service entry objects – Abstract | 16 |
| 6.2 Error registers, alarm registers / filters / descriptor objects – Abstract | 20 |
| 6.3 List objects – Abstract..... | 20 |
| 6.4 Register table objects – Abstract | 20 |
| 6.5 Data profile objects – Abstract..... | 21 |
| 7 Electricity (Value group A = 1)..... | 21 |
| 7.1 Value group C codes – Electricity (see Table 12 and Figure 2)..... | 21 |
| 7.2 Value group D codes – Electricity | 23 |
| 7.2.1 Processing of measurement values (see Table 13) | 23 |
| 7.2.2 Use of value group D for identification of other objects..... | 25 |
| 7.3 Value group E codes – Electricity | 25 |
| 7.3.1 General | 25 |
| 7.3.2 Tariff rates | 25 |
| 7.3.3 Harmonics | 26 |
| 7.3.4 Phase angles..... | 26 |
| 7.3.5 Transformer and line loss quantities | 27 |
| 7.3.6 UNIPED voltage dips | 30 |
| 7.3.7 Use of value group E for the identification of other objects..... | 30 |

| | | |
|--------------|--|----|
| 7.4 | Value group F codes – Electricity | 30 |
| 7.4.1 | Billing periods | 30 |
| 7.4.2 | Multiple thresholds | 31 |
| 7.5 | OBIS codes – Electricity | 31 |
| 7.5.1 | General and service entry objects – Electricity | 31 |
| 7.5.2 | Error register objects – Electricity | 34 |
| 7.5.3 | List objects – Electricity | 35 |
| 7.5.4 | Data profile objects – Electricity | 35 |
| 7.5.5 | Register table objects – Electricity | 35 |
| 8 | Other media (Value group A= 15) | 36 |
| 8.1 | General | 36 |
| 8.2 | Value group C codes – Other media | 36 |
| 8.3 | Value group D codes – Other media | 36 |
| 8.4 | Value group E codes – Other media | 36 |
| 8.5 | Value group F codes – Other media | 36 |
| Annex A | (normative) Code presentation | 37 |
| A.1 | Reduced ID codes (e.g. for IEC 62056-21) | 37 |
| A.2 | Display | 37 |
| A.3 | Special handling of value group F | 37 |
| A.4 | COSEM | 38 |
| Annex B | (informative) Significant technical changes with respect to IEC 62056-6-1:2013 | 39 |
| Bibliography | | 40 |
| Index | | 41 |
| Figure 1 | – OBIS code structure and use of value groups | 10 |
| Figure 2 | – Quadrant definitions for active and reactive power | 23 |
| Figure 3 | – Model of the line and the transformer for calculation of loss quantities | 27 |
| Figure A.1 | – Reduced ID code presentation | 37 |
| Table 1 | – Rules for manufacturer, utility, consortia and country specific codes | 11 |
| Table 2 | – Value group A codes | 12 |
| Table 3 | – Value group B codes | 12 |
| Table 4 | – Value group C codes – Abstract objects | 13 |
| Table 5 | – Value group D codes – Consortia specific identifiers | 13 |
| Table 6 | – Value group D codes – Country specific identifiers | 14 |
| Table 7 | – OBIS codes for general and service entry objects | 16 |
| Table 8 | – OBIS codes for error registers, alarm registers and alarm filters – Abstract | 20 |
| Table 9 | – OBIS codes for list objects – Abstract | 20 |
| Table 10 | – OBIS codes for register table objects – Abstract | 20 |
| Table 11 | – OBIS codes for data profile objects – Abstract | 21 |
| Table 12 | – Value group C codes – Electricity | 21 |
| Table 13 | – Value group D codes – Electricity | 23 |
| Table 14 | – Value group E codes – Electricity – Tariff rates | 26 |
| Table 15 | – Value group E codes – Electricity – Harmonics | 26 |
| Table 16 | – Value group E codes – Electricity – Extended phase angle measurement | 27 |

Table 17 – Value group E codes – Electricity – Transformer and line losses.....28

Table 18 – Value group E codes – Electricity – UNIPED voltage dips.....30

Table 19 – OBIS codes for general and service entry objects – Electricity.....31

Table 20 – OBIS codes for error register objects – Electricity.....34

Table 21 – OBIS codes for list objects – Electricity.....35

Table 22 – OBIS codes for data profile objects – Electricity.....35

Table 23 – OBIS codes for register table objects – Electricity.....35

Table 24 – Value group C codes – Other media.....36

Table A.1 – Example of display code replacement.....37

Table A.2 – Value group F – Billing periods.....38

Withhold

iTeh STANDARD PREVIEW
(standards.iteh.ai)

IEC 62056-6-1:2015

<https://standards.iteh.ai/catalog/standards/sist/629bd6b5-bd40-4e4d-9cb4-40d4fe9fdd96/iec-62056-6-1-2015>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING DATA EXCHANGE –
THE DLMS/COSEM SUITE –****Part 6-1: Object Identification System (OBIS)**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 62056-6-1 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 may be obtained from:

DLMS User Association
Zug/Switzerland
www.dlms.com

International Standard IEC 62056-6-1 has been prepared by IEC technical committee 13:
Electrical energy measurement and control.

This second edition cancels and replaces the first edition of IEC 62056-6-1, published in 2013. It constitutes a technical revision.

The main technical changes with respect to the previous edition are listed in Annex B (informative).

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

| FDIS | Report on voting |
|-------------|------------------|
| 13/1649FDIS | 13/1658/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.

A list of all the parts in the IEC 62056 series, published under the general title *Electricity metering data exchange – The DLMS/COSEM suite*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The numbering scheme has changed from IEC 62056-XY to IEC 62056-X-Y. For example IEC 62056-61 becomes IEC 62056-6-1.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

INTRODUCTION

This second edition of IEC 62056-6-1 has been prepared by IEC TC13 WG14 with a significant contribution of the DLMS User Association, its D-type liaison partner.

This edition is in line with the DLMS UA Blue Book Edition 11.0. This edition specifies new OBIS codes related to new applications and includes some editorial improvements.

In 2014, the DLMS UA has published Blue Book Edition 12.0 adding several new features regarding functionality, efficiency and security while keeping full backwards compatibility.

The intention of the DLMS UA is to bring also these latest developments to international standardization. Therefore, IEC TC13 WG14 launched a project to bring these new elements also to the IEC 62056 series that will lead to Edition 3.0 of the standard

Data identification

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.

To facilitate the analysis of metering information, for the purposes of billing, load, customer and contract management, it is necessary to uniquely identify data items, whether collected manually or automatically, via local or remote data exchange, in a manufacturer-independent way. The definition of identification codes to achieve this – the OBIS codes – is based on DIN 43863-3:1997, *Electricity meters – Part 3: Tariff metering device as additional equipment for electricity meters – EDIS – Energy Data Identification System*.

IEC 62056-6-1:2015

<https://standards.ieh.ch/catalogue/standards/sst/62056-6-1-2015>

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 6-1: Object Identification System (OBIS)

1 Scope

This part of IEC 62056 specifies the overall structure of the Object Identification System (OBIS) and the mapping of all commonly used data items in metering equipment 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 ICs, or objects, as defined in IEC 62056-6-2;
- data transmitted through communication lines;
- data displayed on the metering equipment, see Clause A.2.

This standard applies to all types of 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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC TR 62051-1:2004, *Electricity metering – Data exchange for meter reading, tariff and load control – 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 62056-6-2:—, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes*¹

EN 13757-1:2002, *Communication system for meters and remote reading of meters – Part 1: Data exchange*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms and definitions given in IEC TR 62051:1999 and IEC TR 62051-1:2004 as well as the following apply.

| | |
|--------------|--|
| COSEM | Companion Specification for Energy Metering |
| COSEM object | An instance of a COSEM interface class |
| DLMS | Device Language Message Specification |
| DLMS UA | DLMS User Association |
| GSM | Global System for Mobile Communications |
| IC | Interface Class |
| IEC | International Electrotechnical Commission |
| ISO | International Organization for Standardization |
| OBIS | OBject Identification System |
| VZ | Billing period counter |

4 OBIS code structure

4.1 Value groups and their use

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

¹ To be published.

| Value group | Use of the value group |
|-------------|---|
| A | Identifies the media (energy type) to which the metering is related. Non-media related information is handled as abstract data. |
| B | Generally, identifies the measurement 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 (for example in data concentrators, registration units). Data from different sources can thus be identified. It may also identify the communication channel, and in some cases it may identify other elements. The definitions for this value group are independent from the value group A. |
| C | Identifies abstract or physical data items related to the information source concerned, for example current, voltage, power, volume, temperature. The definitions depend on the value in 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. |
| D | Identifies types, or the result of the processing of physical quantities identified by values in value groups A and C, according to various specific algorithms. The algorithms can deliver energy and demand quantities as well as other physical quantities. |
| E | Identifies further processing or classification of quantities identified by values in value groups A to D. |
| F | Identifies historical values of data, identified by values in value groups A to E, according to different billing periods. Where this is not relevant, this value group can be used for further classification. |

IEC

Figure 1 – OBIS code structure and use of value groups

4.2 Manufacturer specific codes

In value groups B to 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 62056-6-2.

In addition, manufacturer specific ranges are defined in Table 7 with A = 0, C = 96 and in Table 19 with A = 1, C = 96.

4.3 Reserved ranges

By default, all codes not allocated are reserved. ²

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

Table 1 summarizes the rules for manufacturer specific codes specified in 4.2, utility specific codes specified in 5.2, consortia specific codes specified in 5.4.2 and country specific codes specified in 5.4.3.

² Administered by the DLMS User Association.

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

| Code type | Value group | | | | | |
|--|----------------|-----------|----------------|--------------|-----------|-----------|
| | A | B | C | D | E | F |
| Manufacturer specific ¹ | 0, 1, 4...9, F | 128...199 | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
| | | <i>b</i> | 128...199, 240 | <i>d</i> | <i>e</i> | <i>f</i> |
| | | <i>b</i> | <i>c</i> | 128...254 | <i>e</i> | <i>f</i> |
| | | <i>b</i> | <i>c</i> | <i>d</i> | 128...254 | <i>f</i> |
| | | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | 128...254 |
| Manufacturer specific abstract ² | 0 | 0...64 | 96 | 50...99 | 0...255 | 0...255 |
| Manufacturer specific, media related general purpose ² | 1, 4...9, F | 0...64 | 96 | 50...99 | 0...255 | 0...255 |
| Utility specific ³ | 0, 1, 4...9, F | 65...127 | 0...255 | 0...255 | 0...255 | 0...255 |
| Consortia specific ⁴ | 0, 1, 4...9, F | 0...64 | 93 | See Table 5. | | |
| Country specific ⁵ | | 0...64 | 94 | See Table 6. | | |
| ¹ " <i>b</i> ", " <i>c</i> ", " <i>d</i> ", " <i>e</i> ", " <i>f</i> " means any value in the relevant value group. | | | | | | |
| 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. | | | | | | |
| ³ If the value in value group 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 this standard nor in IEC 62056-6-2. | | | | | | |
| ⁴ The usage of value groups E and F are defined in consortia specific documents. | | | | | | |
| ⁵ The usage of value groups E and F are defined in country specific documents. | | | | | | |

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.

4.5 Standard object codes

Standard object codes are meaningful combinations of defined values of the six value groups.

In the following tables, in the various value groups, "*b*", "*c*", "*d*", "*e*", "*f*" signifies any value in the respective value group. If only one object is instantiated, the value shall be 0. If a value group is shaded, then this value group is not used.

NOTE The DLMS UA maintains a list of standard COSEM object definitions at www.dlms.com. The validity of the combination of OBIS codes and class_id-s as well as the data types of the attributes are tested during conformance testing.

5 Value group definitions – overview

5.1 Value group A

The range for value group A is 0 to 15; see Table 2.

Table 2 – Value group A codes

| Value group A | |
|---------------|-------------------------------------|
| 0 | Abstract objects |
| 1 | Electricity related objects |
| ... | |
| 4 | Heat cost allocator related objects |
| 5, 6 | Thermal energy related objects |
| 7 | Gas related objects |
| 8 | Cold water related objects |
| 9 | Hot water related objects |
| ... | |
| 15 | Other media |
| All other | Reserved |

The following subclauses contain value group definitions B to F common for all values of value group A.

5.2 Value group B

The range for value group B is 0 to 255; see Table 3.

Table 3 – Value group B codes

| Value group B | |
|---------------|-----------------------------|
| 0 | No channel specified |
| 1...64 | Channel 1..64 |
| 65...127 | Utility specific codes |
| 128...199 | Manufacturer specific codes |
| 200...255 | Reserved |

If channel information is not essential, the value 0 shall be assigned.

The range 65...127 is available for utility specific use. If the value of value group B is in this range, the whole OBIS code shall be considered as utility specific and the value of other groups does not necessarily carry a meaning defined neither in this standard nor in IEC 62056-6-2.

5.3 Value group C

5.3.1 General

The range for value group C is 0 to 255. The definitions depend on the value in value group A. The codes for abstract objects are specified in 5.3.2. See also:

- electricity related codes specified in 7.1;
- heat cost allocator, thermal energy, gas and water related codes specified in EN 13757-1;
- other media related codes specified in 8.2.

5.3.2 Abstract objects

Abstract objects are data items, which are not related to a certain type of physical quantity. See Table 4.

Table 4 – Value group C codes – Abstract objects

| Value group C Abstract objects (A = 0) | |
|---|--|
| 0...89 | Context specific identifiers ^a |
| 93 | Consortia specific identifiers (See 5.4.2). |
| 94 | Country specific identifiers (See 5.4.3) |
| 96 | General and service entry objects – Abstract (See 6.1) |
| 97 | Error register objects – Abstract (See 6.2) |
| 98 | List objects – Abstract (See 6.3, 6.4) |
| 99 | Data profile objects – Abstract (See 6.5) |
| ... | |
| 127 | Inactive objects ^b |
| 128...199, 240 | Manufacturer specific codes |
| All other | Reserved |
| ^a Context specific identifiers identify objects specific to a certain protocol and/or application. For the COSEM context, the identifiers are defined in IEC 62056-6-2:–, 6.2. | |
| ^b An inactive object is an object, which is defined and present in a meter, but which has no assigned functionality. | |

5.4 Value group D

5.4.1 General

The range for value group D is 0 to 255.

5.4.2 Consortia specific identifiers

Table 5 specifies the use of value group D for consortia specific applications. In this table, there are no reserved ranges for manufacturer specific codes. The usage of value group E and F are defined in consortia specific documents.

Objects that are already identified in this standard shall not be re-identified by consortia specific identifiers.

Table 5 – Value group D codes – Consortia specific identifiers

| Value group D Consortia specific identifiers (A = any, C = 93) | |
|--|----------|
| All values | Reserved |
| NOTE At the time of the publication of this standard, no consortia specific identifiers are allocated. | |