Irish Standard
I.S. EN 62056-1-0:2015

Electricity metering data exchange - The DLMS/COSEM suite - Part 1-0: Smart metering standardization framework

I.S. EN 62056-1-0:2015

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62056-1-0

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English Version

Electricity metering data exchange - The DLMS/COSEM suite - Part 1-0: Smart metering standardization framework (IEC 62056-1-0:2014)

Échange des données de comptage de l'électricité - La suite DLMS/COSEM - Partie 1-0: Cadre de normalisation du comptage intelligent (IEC 62056-1-0:2014)

Datenkommunikation der elektrischen Energiemessung - DLMS/COSEM - Teil 1-0: Normungsrahmen für die intelligente Messung (IEC 62056-1-0:2014)

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Ref. No. EN 62056-1-0:2015 E

Foreword

The text of document 13/1574/FDIS, future edition 1 of IEC 62056-1-0, prepared by IEC/TC 13 "Electrical energy measurement, tariff- and load control" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62056-1-0:2015.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2015-12-05
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-07-09

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Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 61334-4-32	-	Distribution automation using distribution line carrier systems -- Part 4: Data communication protocols -- Section 32: Data link layer - Logical link control (LLC)	EN 61334-4-32	-
IEC 61334-5-1	-	Distribution automation using distribution line carrier systems -- Part 5-1: Lower layer profiles - The spread frequency shift keying (S-FSK) profile	EN 61334-5-1	-
IEC 62056-3-1	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 3-1: Use of local area networks on twisted pair with carrier signalling	EN 62056-3-1	-
IEC 62056-4-7	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 4-7: DLMS/COSEM transport layer for IP networks	FprEN 62056-4-7	-
IEC 62056-5-3	2013	Electricity metering data exchange - The DLMS/COSEM suite -- Part 5-3: DLMS/COSEM application layer	EN 62056-5-3	2014
IEC 62056-6-1	2013	Electricity metering data exchange - The DLMS/COSEM suite -- Part 6-1: COSEM Object Identification System (OBIS)	EN 62056-6-1	2013
IEC 62056-6-2	2013	Electricity metering data exchange - The DLMS/COSEM suite -- Part 6-2: COSEM interface classes	EN 62056-6-2	2013
IEC 62056-7-6	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 7-6: The 3-layer, connection-oriented HDLC based communication profile	EN 62056-7-6	-
IEC 62056-8-3	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 8-3: Communication profile for PLC S-FSK neighbourhood networks	EN 62056-8-3	-
IEC 62056-9-7	-	Electricity metering data exchange - The DLMS/COSEM suite -- Part 9-7: Communication profile for TCP-UDP/IP networks	EN 62056-9-7	-
IEC 62056	series	Electricity metering - Data exchange for meter reading, tariff and load control	EN 62056	series
IEC 62056-42	-	Electricity metering - Data exchange for meter reading, tariff and load control -- Part 42: Physical layer services and procedures for connection-oriented asynchronous data exchange	EN 62056-42	-
IEC 62056-46	-	Electricity metering - Data exchange for meter reading, tariff and load control -- Part 46: Data link layer using HDLC protocol	EN 62056-46	-

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IEC 62056-1-0

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colour inside

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Échange des données de comptage de l'électricité – La suite DLMS/COSEM – Partie 1-0: Cadre de normalisation du comptage intelligent

IEC 62056-1-0:2014-06(en-fr)

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INTERNATIONAL STANDARD

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Electricity metering data exchange – The DLMS/COSEM suite – Part 1-0: Smart metering standardisation framework

Échange des données de comptage de l'électricité – La suite DLMS/COSEM – Partie 1-0: Cadre de normalisation du comptage intelligent

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 1-0: Smart metering standardisation framework

FOREWORD

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International Standard IEC 62056-1-0 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

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

FDIS	Report on voting
13/1574/FDIS	13/1580/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 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.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

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INTRODUCTION

With the growing number of smart metering deployments, secure and interoperable data exchange between the different system components becomes essential. Besides supporting the execution of the supplier-consumer contract and providing the necessary billing data the smart meter becomes also the source of valuable information for the efficient operation of the smart grid.

The increasing range of applications that depend on metering data leads to a growing amount of data to be exchanged within the smart metering system and via the interfaces to other systems. Smart metering systems must be adaptable to different communication channels without creating any data incompatibilities for the supported applications.

The standards in the IEC 62056 DLMS/COSEM suite have been constantly improved and extended considering the growing requirements of the smart metering and smart grid applications. In particular, the object oriented COSEM data model has been extended with new interface classes supporting new smart metering and smart grid use cases. The application layer has been “fortified” with state-of-the art security features offering scalable security for the entire range of applications via a large range of communication channels. With the introduction of the concept of “communication profiles” the IEC 62056 DLMS/COSEM suite provides the means to link different communication channels standards with the consistent data model of DLMS/COSEM.

This International Standard summarises the principles the IEC 62056 standards are built on and sets the rules for future extensions to guarantee consistency.

Smart metering forms an important part of smart grids and smart homes. In order to ensure the efficient and secure flow of information between the different applications and actors in the energy market, harmonisation of the standards worked out by the corresponding standardisation committees becomes necessary. In particular, a smart metering system offers interfaces to electricity and non-electricity meters, to home automation, to substation automation and to electricity distribution management systems. The standardisation concepts described in this standard ensure consistency within the scope of smart metering as a prerequisite to define harmonised interfaces to smart grid and smart home systems.

The standards of the IEC 62056 DLMS/COSEM suite have been developed by IEC TC13 for the purposes of electricity metering. Some of the standards – in particular the COSEM data model – are also used by other Technical Committees responsible for non-electricity metering.

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 1-0: Smart metering standardisation framework

1 Scope

This part of IEC 62056 provides information on the smart metering use cases and on architectures supported by the IEC 62056 DLMS/COSEM series of standards specifying electricity meter data exchange. It describes the standardization framework including:

- the principles on which the standards shall be developed;
- the ways the existing standards shall be extended to support new use cases and to accommodate new communication technologies, while maintaining coherency;
- the aspects of interoperability and information security.

It also provides guidance for selecting the suitable standards for a specific interface within the smart metering system.

Other aspects of metering covered by TC13, like metrological requirements, testing, safety and dependability are out of the scope of this Standard.

2 Normative references

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IEC 62056-4-7, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 4-7: COSEM transport layers for IPv4 networks* (to be published)

IEC 62056-5-3:2013, *Electricity metering data exchange – The DLMS/COSEM suite – Part 5-3: DLMS/COSEM application layer*

IEC 62056-6-1:2013, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-1: Object Identification System (OBIS)*

IEC 62056-6-2:2013, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes*