SVENSK STANDARD SS-EN IEC 62056-3-1

Fastställd	Utgåva	Sida	Ansvarig kommitté
2021-10-20	2	1 (1+128)	SEK TK 13

Elmätare – Datakommunikation för avläsning av elmätare och för styrning av tariff och belastning – DLMS/COSEM-familjen – Del 3-1: Lokala nät (LAN) med tvinnad parkabel

Electricity metering data exchange – The DLMS/COSEM suite – Part 3 -1: Use of local area networks on twisted pair with carrier signalling

Som svensk standard gäller europastandarden EN IEC 62056-3-1:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62056-3-1:2021.

Nationellt förord

Europastandarden EN IEC 62056-3-1:2021

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62056-3-1, Second edition, 2021 - Electricity metering data exchange - The DLMS/COSEM suite - Part 3 -1: Use of local area networks on twisted pair with carrier signalling**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 62056-3-1, utgåva 1, 2014, gäller ej fr o m 2024-08-11.

ICS 17.220.20; 35.110.00; 91.140.50

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62056-3-1

August 2021

ICS 17.220.20; 35.110; 91.140.50

Supersedes EN 62056-3-1:2014 and all of its amendments and corrigenda (if any)

English Version

Electricity metering data exchange - The DLMS/COSEM suite - Part 3-1: Use of local area networks on twisted pair with carrier signalling (IEC 62056-3-1:2021)

Échange des données de comptage de l'électricité - La suite DLMS/COSEM - Partie 3-1: Utilisation des réseaux locaux sur paire torsadée avec signal de porteuse (IEC 62056-3-1:2021)

Datenkommunikation der elektrischen Energiemessung - DLMS/COSEM - Teil 3-1: Nutzung lokaler Netzwerke mit Trägerfrequenz-Signalübertragung auf verdrillten Zweidrahtleitungen (IEC 62056-3-1:2021)

This European Standard was approved by CENELEC on 2021-08-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62056-3-1:2021 E

European foreword

The text of document 13/1794/CDV, future edition 2 of IEC 62056-3-1, prepared by IEC/TC 13 “Electrical energy measurement and control” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62056-3-1:2021.

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) 2022–05–11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024–08–11

This document supersedes EN 62056-3-1:2014 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62056-3-1:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 62056-6-1:2017 NOTE Harmonized as EN 62056-6-1:2017 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where 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 61334-4-41	1996	Distribution automation using distribution line carrier systems - Part 4: Data communication protocols - Section 41: Application protocol - Distribution line message specification	EN 61334-4-41	1996
IEC 62056-5-3	2017	Electricity metering data exchange - The DLMS/COSEM suite - Part 5–3: DLMS/COSEM application layer	EN 62056-5-3	2017
IEC 62056-6-2	2017	Electricity metering data exchange - The DLMS/COSEM suite - Part 6–2: COSEM interface classes	EN IEC 62056-6-2	2018
IEC 62056-51	1998	Electricity metering - Data exchange for meter reading, tariff and load control - Part 51: Application layer protocols	-	-
ISO/IEC 8482	1993	Information technology - Telecommunications and information exchange between systems - Twisted pair multipoint interconnections	-	-
EIA 485	-	Electrical characteristics of generators and receivers for use in balanced digital multipoint systems	-	-

IEC 62056-3-1

Edition 2.0 2021-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Electricity metering data exchange – The DLMS/COSEM suite – Part 3-1: Use of local area networks on twisted pair with carrier signalling

Échange des données de comptage de l'électricité – La suite DLMS/COSEM – Partie 3-1: Utilisation des réseaux locaux sur paire torsadée avec signal de porteuse

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 3-1: Use of local area networks on twisted pair with carrier signalling

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.
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International Standard IEC 62056-3-1 has been prepared by IEC technical committee 13: Electrical energy measurement and control.

This second edition cancels and replaces the first edition of IEC 62056-3-1, issued in 2013, and constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

- addition of a profile which makes use of the IEC 62056 DLMS/COSEM Application layer and COSEM object model;
- review of the data link layer which is split into two parts:
  - a pure Data Link layer;
  - a "Support Manager" entity managing the communication media;
- ability to negotiate the communication speed, bringing baud rate up to 9 600 bauds.

The text of this International Standard is based on the following documents:

CDV	Report on voting
13/1794/CDV	13/1823/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts of 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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 3-1: Use of local area networks on twisted pair with carrier signalling

1 Scope

This part of IEC 62056 describes two sets of profiles: the first set of profiles allows a bidirectional communication between a client and a server. This set of profiles is made of three profiles allowing local bus data exchange with stations either energized or not. For non-energized stations, the bus supplies energy for data exchange. Three different profiles are supported:

- base profile: this three-layer profile provides remote communication services;

  NOTE 1 This first profile was published in IEC 61142:1993 and became known as the Euridis standard.

- profile with DLMS: this profile allows using DLMS services as specified in IEC 61334-4-41;

  NOTE 2 This second profile was published in IEC 62056-31:1999.

- profile with DLMS/COSEM: this profile allows using the DLMS/COSEM Application layer and the COSEM object model as specified in IEC 62056-5-3 and in IEC 62056-6-2 respectively.

The three profiles use the same physical layer and they are fully compatible, meaning that devices implementing any of these profiles can be operated on the same bus. The transmission medium is twisted pair using carrier signalling and it is known as the Euridis Bus.

The second set of profiles allows unidirectional communication between a given Energy Metering device and a Customer Energy Management System. This second set is made up of three profiles.

Subclause 4.2.1 to Clause 8 included specify the bidirectional communication using twisted pair signalling and Clause 9 to 9.5 the unidirectional communication using twisted pair signalling.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61334-4-41:1996, *Distribution automation using distribution line carrier systems – Part 4: Data communication protocols – Section 41: Application protocols – Distribution line message specification*

IEC 62056-51:1998, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 51: Application layer protocols*

IEC 62056-5-3:2017, *Electricity metering data exchange – The DLMS/COSEM suite – Part 5-3: DLMS/COSEM application layer*

IEC 62056-6-2:2017, *Electricity metering data exchange – The DLMS/COSEM suite – Part 6-2: COSEM interface classes*

ISO/IEC 8482:1993, *Information technology – Telecommunications and information exchange between systems – Twisted pair multipoint interconnections*

EIA 485, *Standard for Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint Systems*