# 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

IEC 62056-3-1:2021-07(en-fr)

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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

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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.

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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

## 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*