BS EN 62056-9-7:2013

BSI Standards Publication

Electricity metering data exchange — The DLMS/COSEM suite

Part 9-7: Communication profile for TCP-UDP/IP networks

bsi.

...making excellence a habit.™

Document Sharing Hub

National foreword

This British Standard is the UK implementation of EN 62056-9-7:2013. It is identical to IEC 62056-9-7:2013. It partially supersedes BS EN 62056-53:2007.

The UK participation in its preparation was entrusted to Technical Committee PEL/13, Electricity Meters.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013.
Published by BSI Standards Limited 2013

ISBN 978 0 580 75065 6
ICS 17.220; 35.110; 91.140.50

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2013.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS EN 62056-9-7:2013

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62056-9-7

October 2013

ICS 17.220; 35.110; 91.140.50

Supersedes EN 62056-53:2007 (partially)

English version

Electricity metering data exchange - The DLMS/COSEM suite - Part 9-7: Communication profile for TCP-UDP/IP networks

(IEC 62056-9-7:2013)

Échange des données de comptage de l'électricité - La suite DLMS/COSEM - Partie 9-7: Profil de communication pour réseaux TCP-UDP/IP (CEI 62056-9-7:2013)

Datenkommunikation der elektrischen Energiemessung - DLMS/COSEM - Teil 9-7: Festlegungen zur Nutzung von TCP-UDP/IP-Netzen (IEC 62056-9-7:2013)

This European Standard was approved by CENELEC on 2013-05-28. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

© 2013 CENELEC - All rights of exploitation in any form and by any means reserved worldwide for CENELEC members.

Ref. No. EN 62056-9-7:2013 E

Documents
Document Sharing Hub

Full document details: BS EN 62056-9-7:2013

Foreword

The text of document 13/1520/FDIS, future edition 1 of IEC 62056-9-7, 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 62056-9-7:2013.

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)	2014-04-04
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-05-28

This document supersedes EN 62056-53:2007 (PART).

EN 62056-9-7:2013 includes the following significant technical changes with respect to EN 62056-53:2007:

Note: Whereas IEC 62056-53 Ed. 2.0 contains the specification of the DLMS/COSEM communication profiles, IEC 62056-5-3 Ed.1.0 replacing the earlier edition does not.

- The title of the standard has been aligned with the title of other parts of the revised IEC 62056 series;
- Clause 4, Targeted communication environments has been extended, a functional reference architecture figure has been added;
- Clause 5, The structure of the profile(s) has been extended, the Figure has been generalized and simplified;
- In clause 6, Identification and addressing scheme, the port number assigned by the IANA for DLMS/COSEM has been added;
- In subclause 9.1, Two paragraphs specifying how confirmed and unconfirmed COSEM-OPEN and xDLMS service invocations have been added;
- Subclause 9.6, Transporting long messages, has been amended. It specifies now that for transporting long messages, application layer block transfer can be used (also available now with SN referencing);
- The clause on Multi-drop configurations has been removed.

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

Endorsement notice

The text of the International Standard IEC 62056-9-7:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62056-6-1	NOTE	Harmonised as EN 62056-6-1[1)] (not modified).
IEC 62056-6-2	NOTE	Harmonised as EN 62056-6-2[1)] (not modified).

[1)] at draft stage.

Documents
Document Sharing Hub
Full document details: BS EN 62056-9-7:2013

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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 62056-5-3 [2)]	-	Electricity metering data exchange - The DLMS/COSEM suite - Part 5-3: DLMS/COSEM application layer	EN 62056-5-3 [2)]	-
IEC 62056-47	2006	Electricity metering - Data exchange for meter reading, tariff and load control - Part 47: COSEM transport layers for IPv4 networks	EN 62056-47	2007

[2)] At draft stage.

Documents
Document Sharing Hub
Full document details: BS EN 62056-9-7:2013

CONTENTS

1 Scope 5
2 Normative references 5
3 Terms, definitions and abbreviations 5
3.1 Terms and definitions 5
3.2 Abbreviations 5
4 Targeted communication environments 6
5 Structure of the profile(s) 7
6 Identification and addressing scheme 8
7 Supporting layer services and service mapping 10
8 Communication profile specific service parameters of the COSEM AL services 11
9 Specific considerations / constraints 12
9.1 Confirmed and unconfirmed AAs and service invocations, packet types used 12
9.2 Releasing application associations: using RLRQ/RLRE is mandatory 13
9.3 Service parameters of the COSEM-OPEN / -RELEASE / -ABORT services 13
9.4 xDLMS client/server type services 13
9.5 EventNotification Service and TriggerEventNotificationSending service 13
9.6 Transporting long messages 13
9.7 Allowing COSEM servers to establish the TCP connection 14
9.8 The COSEM TCP-UDP/IP profile and real-world IP networks 14
Bibliography 15
Index 17

Figure 1 – Communication architecture 7
Figure 2 – Examples for lower-layer protocols in the TCP-UDP/IP based profile(s) 8
Figure 3 – Identification / addressing scheme in the TCP-UDP/IP based profile(s) 10
Figure 4 – Summary of TCP / UDP layer services 11

Table 1 – Application associations and data exchange in the TCP-UDP/IP based profile 12

Documents
Document Sharing Hub
Full document details: BS EN 62056-9-7:2013

ELECTRICITY METERING DATA EXCHANGE – THE DLMS/COSEM SUITE –

Part 9-7: Communication profile for TCP-UDP/IP networks

1 Scope

This part of IEC 62056 specifies the DLMS/COSEM communication profile for TCP-UDP/IP networks.

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 62056-47:2006, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 47: COSEM transport layer for IPv4 networks*

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

NOTE See also the Bibliography.

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1
client
a station, asking for services. Normally the master station

3.1.2
server
a station, delivering services. The tariff device (meter) is normally the server, delivering the requested values or executing the requested tasks

3.2 Abbreviations

AA	Application Association
AARE	A-Associate Response – an APDU of the ACSE
AARQ	A-Associate Request – an APDU of the ACSE
ACSE	Association Control Service Element
AL	Application Layer
AP	Application Process
APDU	Application Layer Protocol Data Unit

Documents
Document Sharing Hub
Full document details: BS EN 62056-9-7:2013