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NSAI Standards

Irish Standard
I.S. EN 60870-5-101:2003&A1:2016

Telecontrol equipment and systems - Part 5-101: Transmission protocols - Companion standard for basic telecontrol tasks

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I.S. EN 60870-5-101:2003&A1:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN 60870-5-101:2003/A1:2016

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National Foreword

I.S. EN 60870-5-101:2003&A1:2016 is the adopted Irish version of the European Document EN 60870-5-101:2003, Telecontrol equipment and systems - Part 5-101: Transmission protocols - Companion standard for basic telecontrol tasks

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60870-5-101:2003/A1

March 2016

ICS 33.200

English Version

Telecontrol equipment and systems - Part 5-101: Transmission protocols - Companion standard for basic telecontrol tasks (IEC 60870-5-101:2003/A1:2015)

Matériels et systèmes de téléconduite - Partie 5-101: Protocoles de transmission - Norme d'accompagnement pour les tâches élémentaires de téléconduite (IEC 60870-5-101:2003/A1:2015)

Fernwirkeinrichtungen und -systeme - Teil 5-101: Übertragungsprotokolle - Anwendungsbezogene Norm für grundlegende Fernwirkaufgaben (IEC 60870-5-101:2003/A1:2015)

This amendment A1 modifies the European Standard EN 60870-5-101:2003; it was approved by CENELEC on 2015-12-31. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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

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Ref. No. EN 60870-5-101:2003/A1:2016 E

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European foreword

The text of document 57/1530/CDV, future IEC 60870-5-101:2003/A1, prepared by IEC/TC 57 "Power system control and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60870-5-101:2003/A1:2016.

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)	2016-09-30
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-12-31

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EUROPEAN STANDARD **EN 60870-5-101**

NORME EUROPÉENNE

EUROPÄISCHE NORM April 2003

ICS 33.200 Supersedes EN 60870-5-101:1996 + A1:2000 + A2:2001

English version

Telecontrol equipment and systems
Part 5-101: Transmission protocols – Companion standard for basic telecontrol tasks
(IEC 60870-5-101:2003)

Matériel et systèmes de téléconduite
Partie 5-101: Protocoles de transmission - Norme d'accompagnement pour les tâches élémentaires de téléconduite
(CEI 60870-5-101:2003)

Fernwirkeinrichtungen und -systeme
Teil 5-101: Übertragungsprotokolle - Anwendungsbezogene Norm für grundlegende Fernwirkaufgaben
(IEC 60870-5-101:2003)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. EN 60870-5-101:2003 E

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Foreword

The text of document 57/605/FDIS, future edition 2 of IEC 60870-5-101, prepared by IEC TC 57, Power system control and associated communications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60870-5-101 on 2003-04-01.

This European Standard supersedes EN 60870-5-101:1996 + A1:2000 + A2:2001.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-01-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-04-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annexes A and B are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60870-5-101:2003 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60050-371	1984	International Electrotechnical Vocabulary - Chapter 371: Telecontrol	-	-
IEC 60870-1-1	1988	Telecontrol equipment and systems Part 1: General considerations – Section 1: General principles	-	-
IEC 60870-5-1	1990	Part 5: Transmission protocols – Section 1: Transmission frame formats	EN 60870-5-1	1993
IEC 60870-5-2	1992	Part 5: Transmission protocols – Section 2: Link transmission procedures	EN 60870-5-2	1993
IEC 60870-5-3	1992	Part 5: Transmission protocols – Section 3: General structure of application data	EN 60870-5-3	1992
IEC 60870-5-4	1993	Part 5: Transmission protocols – Section 4: Definition and coding of application information elements	EN 60870-5-4	1993
IEC 60870-5-5	1995	Part 5: Transmission protocols – Section 5: Basic application functions	EN 60870-5-5	1995
IEC 60870-5-103	1997	Part 5-103: Transmission protocols - Companion standard for the informative interface of protection equipment	EN 60870-5-103	1998
ISO/IEC 8824-1	2000	Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation	-	-
ITU-T V.24	2000	List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE)	-	-
ITU-T V.28	1993	Electrical characteristics for unbalanced double-current interchange circuits	-	-

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Publication	Year	Title	EN/HD	Year
ITU-T X.24	1988	List of definitions for interchange circuits between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) on public data networks	-	-
ITU-T X.27/V.11	1996	Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s	-	-
IEEE 754	1985	Standard for Binary Floating-Point Arithmetic	-	-

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INTERNATIONAL STANDARD

IEC 60870-5-101

Second edition
2003-02

Telecontrol equipment and systems –

Part 5-101: Transmission protocols – Companion standard for basic telecontrol tasks

Matériels et systèmes de téléconduite –

Partie 5-101: Protocoles de transmission – Norme d'accompagnement pour les tâches élémentaires de téléconduite

Reference number
IEC 60870-5-101:2003(E)

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INTERNATIONAL ELECTROTECHNICAL COMMISSSION

TELECONTROL EQUIPMENT AND SYSTEMS –

Part 5-101: Transmission protocols – Companion standard for basic telecontrol tasks

FOREWORD

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International Standard IEC 60870-5-101 has been prepared by IEC technical committee 57: Power system control and associated communications.

This second edition cancels and replaces the first edition published in 1995, its amendments 1 (2000) and 2 (2001) and constitutes a technical revision.

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

FDIS	Report on voting
57/605/FDIS	57/623/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.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

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TELECONTROL EQUIPMENT AND SYSTEMS –

Part 5-101: Transmission protocols – Companion standard for basic telecontrol tasks

1 Scope and object

This part of IEC 60870-5 applies to telecontrol equipment and systems with coded bit serial data transmission for monitoring and controlling geographically widespread processes. It defines a telecontrol companion standard that enables interoperability among compatible telecontrol equipment. The defined telecontrol companion standard utilizes standards of the IEC 60870-5 series of documents. The specifications of this standard present a functional profile for basic telecontrol tasks. Further companion standards, based on the IEC 60870-5 series are under consideration.

This standard defines ASDUs with time tags CP24Time2a which includes three octets binary time from milliseconds to minutes. In addition to these specifications, ASDUs with time tags CP56Time2a, which includes seven octets binary time from milliseconds to years, are defined in this standard (see 6.8 of IEC 60870-5-4 and 7.2.6.18 of this standard).

ASDUs with time tags CP56Time2a are used when the controlling station is not able to add the time from hours to years unambiguously to the received ASDUs which are tagged from milliseconds to minutes. This may happen when using networks with uncertain transmission delays or if temporary failure of a network occurs.

Although this companion standard defines the most important user functions, other than the actual communication functions, it cannot guarantee complete compatibility and interoperability between equipment of different vendors. An additional mutual agreement is normally required between concerned parties regarding the methods of use of the defined communication functions, taking into account the operation of the entire telecontrol equipment.

Standards specified in this standard are compatible with standards defined in IEC 60870-5-1 to IEC 60870-5-5 (see Clause 2).

2 Normative references

The following referenced documents are indispensable for the application 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 60050(371):1984, *International Electrotechnical Vocabulary (IEV) – Chapter 371: Telecontrol*

IEC 60870-1-1:1988, *Telecontrol equipment and systems – Part 1: General considerations – Section 1: General principles*

IEC 60870-5-1:1990, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 1: Transmission frame formats*

IEC 60870-5-2:1992, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 2: Link transmission procedures*

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