Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 3: Power Line Channel Specification

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EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 14908-3:2006 sisaldab Euroopa standardi EN 14908-3:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 21.12.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14908-3:2006 consists of the English text of the European standard EN 14908-3:2006. This document is endorsed on 21.12.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies all the information necessary to facilitate the exchange of data and control information over the power line medium. This European Standard establishes a minimal set of rules for compliance. It does not rule out extended services to be provided, given that the rules are adhered to within the system. It is the intention of the standard to permit extended services (defined by users) to coexist.	**Scope:** This European Standard specifies all the information necessary to facilitate the exchange of data and control information over the power line medium. This European Standard establishes a minimal set of rules for compliance. It does not rule out extended services to be provided, given that the rules are adhered to within the system. It is the intention of the standard to permit extended services (defined by users) to coexist.

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Võtmesõnad:

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English Version

Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 3: Power Line Channel Specification

Réseau ouvert de communication de données pour l'automatisation, la régulation et la gestion technique du bâtiment - Protocole de réseau pour le bâtiment - Partie 3: Spécification des communications pour courants porteurs

Firmenneutrale Datenkommunikation für die Gebäudeautomation und Gebäudemanagement - Gebäude Netzwerk Protokoll - Teil 3: Kommunikation über die Stromversorgungsleitungen

This European Standard was approved by CEN on 11 September 2006.

CEN 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 Central Secretariat or to any CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 14908-3:2006) has been prepared by Technical Committee CEN/TC 247 “Building Automation, Controls and Building Management”, the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2007, and conflicting national standards shall be withdrawn at the latest by May 2007.

This European Standard is part of the standard EN 14908 *Open Data Communication in Building Automation, Controls and Building Management — Control Network Protocol* and consists of the following parts:

Part 1: Protocol Stack

Part 2: Twisted Pair Communication

Part 3: Power Line Channel Specification

Part 4: IP Communication

Part 5: Implementation Guideline

The content of this European Standard covers the data communications used for management, automation/control and field functions. This standard is based on the American standard ANSI-709.2-A-2000 Control Network Powerline Channel Specification but with extensive changes to meet European requirements in respect of the topology and nature of electrical distribution networks, limitations on radio frequency emissions and requirements to use powerline access protocols.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard specifies the Control Network Power Line (PL) Channel and serves as a companion document to EN 14908-1. Its purpose is to present the information necessary for the development of a PL physical network and nodes to communicate and share information over that network. This is one of a series of documents covering the various media that comprise the CNP standard.

This European Standard covers the complete physical layer (OSI layer 1) including the interface to the Medium Access Control (MAC) Sub-Layer and the interface to the medium. It includes parameters specific to the PL channel type, even though the parameters may be controlled at an OSI layer other than layer 1. This European Standard also provides a set of guideline physical and electrical specifications for the power line environment as an aid in developing products for that environment.

This European Standard has been prepared to provide mechanisms through which various vendors of building automation, control and of building management systems may exchange information in a standardised way. It defines communication capabilities.

This European Standard is used by all involved in design, manufacture, engineering, installation and commissioning activities.

The CNP specification model is based on the OSI 7-layer model Reference Model. There are also important extensions to the OSI Reference Model. Figure 1 shows the scope of this specification in reference to the entire CNP model. In this European Standard, only the parts of the model relevant to power line communication are specified. Anything outside this boundary is covered in other parts of the standard. Similar specifications exist for other CNP media.

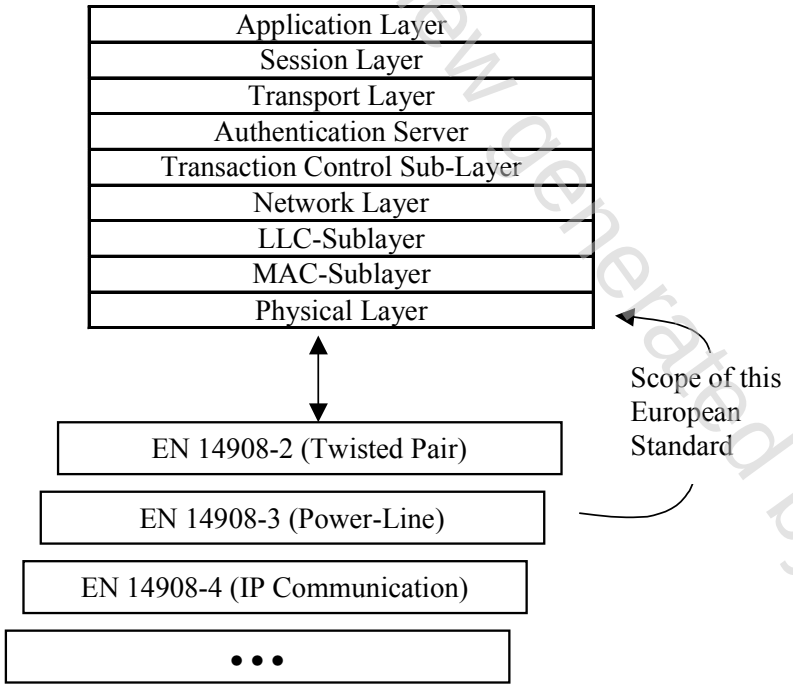

Figure 1 — Relationship of CNP 3 Specification to the CNP 1 Specification Model

1 Scope

This European Standard specifies all the information necessary to facilitate the exchange of data and control information over the power line medium.

This European Standard establishes a minimal set of rules for compliance. It does not rule out extended services to be provided, given that the rules are adhered to within the system. It is the intention of the standard to permit extended services (defined by users) to coexist.

Certain aspects of the standard are defined in other documents. These documents are referenced where relevant. In the case where a referenced standard conflicts with this European Standard, this European Standard will prevail.

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.

EN 14908-1:2005, *Open Data Communication in Building Automation, Controls and Building Management – Control Network Protocol — Part 1: Protocol Stack*

EN 50065-1, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148, 5 kHz — Part 1: General requirements, frequency bands and electromagnetic disturbances*

EN 50065-2-1, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz — Part 2-1: Immunity requirements for mains communications equipment and systems operating in the range of frequencies 95 kHz to 148,5 kHz and intended for use in residential, commercial and light industrial environments*

EN 50065-2-2, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz — Part 2-2: Immunity requirements for mains communications equipment and systems operating in the range of frequencies 95 kHz to 148,5 kHz and intended for use in industrial environments*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14908-1:2005 and the following, specifically with the power line medium and physical layer shown in Figure 1, apply..

3.1
PL Node
user node attached to the power line medium at a tap that meets the requirements of this specification

3.2
Line Cord
cable not part of the power line network that allows a node located away from the power line network to be connected to the network

3.3
Power Line Network
communication network based on power distribution lines (“power lines”), from the final distribution transformer to and including all homes served by that transformer, including all wiring in those homes

3.4
Non-Network-Powered Node
compatible node that attaches to the power line network but does not draw any power from the network