Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 2: Twisted Pair Communication

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 14908-2:2005 sisaldab Euroopa standardi EN 14908-2:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 25.11.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14908-2:2005 consists of the English text of the European standard EN 14908-2:2005. This document is endorsed on 25.11.2005 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 the control network protocol (CNP) free-topology twisted-pair channel and serves as a companion European Standard to prEN14908-1.	**Scope:** This European Standard specifies the control network protocol (CNP) free-topology twisted-pair channel and serves as a companion European Standard to prEN14908-1.

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English Version

Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 2: Twisted Pair Communication

Réseau ouvert de communication de données pour l'automatisation, la régulation et la gestion techniques du bâtiment - Protocole de réseau pour le bâtiment - Partie 2 : Communications par paires torsadées

Firmenneutrale Datenkommunikationn für die Gebäudeautomation und Gebäudemanagement - Gebäudedatennetzprotokoll - Teil 2: Kommunikation über paarig verdrillte Leitungen

This European Standard was approved by CEN on 11 August 2005.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard (EN 14908-2:2005) has been prepared by 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 April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

This European Standard supersedes ENV 13154—2:1998.

This European Standard is part of a series of standards for open data transmission in building automation, control and in building management systems. The content of this European Standard covers the data communications used for management, automation/control and field functions.

EN 14908-2 is part of a series of European Standards under the general title *Control Network Protocol (CNP)*, which comprises the following parts:

Part 1: *Protocol Stack*[1]

Part 2: *Twisted Pair Communication*[1]

Part 3: *Power Line Channel Specification*[1]

Part 4: *IP-Communication*[1]

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

[1] Under preparation.

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Introduction

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

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

This European Standard has been made in response to the essential requirements of the Constructive Products Directive.

1 Scope

This European Standard specifies the control network protocol (CNP) free-topology twisted-pair channel and serves as a companion European Standard to prEN14908-1. The channel supports communication at 78,125 kbps between multiple nodes, each of which consists of a transceiver, a protocol processor, an application processor, a power supply, and application electronics.

This European Standard covers the complete physical layer (OSI Layer 1), including the interface to the Media Access Control (MAC) sub-layer and the interface to the medium. Parameters that are controlled by other layers but control the operation of the physical layer are also specified.

2 Normative References

The following referenced documents are indispensable for the application of this European Standard. 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 - Building Network Protocol - Part 1: Protocol Stack.*

EN 50173-1, *Information technology - Generic cabling systems- Part 1: General requirements and office areas*

3 Network Overview

The CNP free-topology twisted-pair channel supports up to 128 nodes on a single network segment with an optional link power source that supplies DC power to the nodes on the network. The channel is specified to support free-topology wiring, and will accommodate bus, star, loop, or any combination of these topologies. The total network length and number of nodes may be extended by use of CNP channel physical layer repeaters, or CNP compliant routers. The channel data rate is 78,125 kbps. Nodes can be either locally powered or link powered. A link-powered node derives its power from the network. The power is delivered on the same two conductors that carry data. Nodes are polarity-insensitive with respect to data as well as DC power. A locally powered node derives its power from a local source. The data is transmitted using Differential Manchester encoding, which is polarity-insensitive.

4 System Specifications

4.1 General Aspects

This section specifies the cable type used, terminations required with bus or free topology, maximum node counts and distances for link and locally powered schemes, and the maximum steady state power that can be drawn from the link power supply.

4.2 Cable

The cable shall conform to EN 50173-1.