

SVENSK STANDARD

SS-EN 14908-7:2019

Öppen datakommunikation för byggnadsautomation, styrning och teknisk byggnadsdrift – Protokoll styr- och regelnätverk – Del 7: Kommunikation via internetprotokoll

Open communication in building automation, controls and building management – Control Network Protocol – Part 7: Communication via internet protocols



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EUROPEAN STANDARD

EN 14908-7

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EUROPÄISCHE NORM

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English Version

Open communication in building automation, controls and building management - Control Network Protocol - Part 7: Communication via internet protocols

Réseau ouvert de communication de données pour l'automatisation, la régulation et la gestion technique du bâtiment - Protocole de contrôle du réseau - Partie 7 : Communication via les protocoles internet

Firmenneutrale Datenkommunikation für die Gebäudeautomation und Gebäudemanagement - Gebäude-Netzwerk-Protokoll - Teil 7: Kommunikation über Internetprotokolle

This European Standard was approved by CEN on 13 July 2019.

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COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

SS-EN 14908-7:2019 (E)

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SS-EN 14908-7:2019 (E)

European foreword

This document (EN 14908-7:2019) has been prepared by Technical Committee CEN/TC 247 “Buildings 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of an identical text or by endorsement, at the latest by June 2020 and conflicting national standards shall be withdrawn at the latest by June 2020.

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This European Standard is part of a series of European Standards for open data transmission in building automation, control and in building management systems. The content of this standard covers the data communications used for management, automation/control and field functions. This European Standard is based on the American standards EIA/CEA-709.1-B Control Network Protocol Specification.

EN 14908-7 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*
- *Part 2: Twisted Pair Communication*
- *Part 3: Power Line Channel Specification*
- *Part 4: IP-Communication*
- *Part 5: Project Implementation Guideline*
- *Part 6: Application elements*

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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 standardized way. It defines communication capabilities.

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

This European Standard has been made in response to the essential requirements of the Construction Products Regulation.

The European Committee for Standardization (CEN)] draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning Patent No. US 9521219 B2, "Systems, methods, and apparatuses using common addressing" and Patent No. US 8374104 B2, "Simple installation of devices on a network" which is claimed to be relevant for the following clauses of this document:

Clause 4 – Addressing

Clause 8 – Network Management Messages

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Adesto Technologies Corporation

3600 Peterson Way

Santa Clara, CA 95054, USA

phone +1-408-938-5224

www.adeptotech.com

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SS-EN 14908-7:2019 (E)

1 Scope

This document specifies a communication protocol for networked control systems. The protocol provides peer-to-peer communication for networked control using web-services. The document describes services in layer 2 and layer 3.

The layer 2 (data link layer) specification also describes the MAC sub-layer interface to the physical layer. The physical layer provides a choice of transmission media. The layer 3 (network layer), as described in EN 14908-1, is integrated in UDP/IP communication using IPv4 and IPv6 protocols.

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.

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

EN 14908-2, *Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 2: Twisted Pair Communication*

EN 14908-3, *Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 3: Power Line Channel*

EN 14908-4, *Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 4: IP Tunneling*

EN 14908-6, *Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 6: Application elements*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

NOTE For the purposes of this document, the following subclauses define the basic terminology employed throughout this document. Some of them are used as normal English terms and have the same meaning as in the context of the standard. However, for some terms, there are subtle differences. For example, in general, bridges do selective forwarding based on the layer 2 destination address. There are no layer 2 addresses in this standard protocol, so bridges forward all packets, as long as the domain address in the packet matches a domain of which the bridge is a member. Routers, in general, perform network address modification so that two protocols with the same transport layer but different network layers can be connected to form a single logical network. Routers of this standard may perform network address modification, but typically they only examine the network address fields and selectively forward packets based on the network layer address fields, and in some cases also do network address mapping or translation as described in *4.2 Network Address Mapping* and *4.3 Network Address Translation*

3.1 channel

logical link between one or more communication nodes

Note 1 to entry: Usually used interchangeably with a link. However, multiple channels can be multiplexed on a given link. For example, IP 70, IP 100, and IP 852 can be used to implement three different channels on the same Ethernet link. Likewise, a single IP 70, IP 100, or IP 852 channel can span multiple native IP links.

3.2 CNP UDP

UDP messages on a CNP/IP channel that are not used for CNP/IP control services

3.3 CNP/IP

control network protocol with control services defined by EN 14908-1 Layers 4 through 7, and transport services based on the link protocol as defined in this standard

3.4 CNP/IP-AN

CNP/IP on a link that natively supports IP communication including Ethernet and Wi-Fi

Note 1 to entry: The CNP/IP-AN protocol is based on Layers 4 to 7 of the EN 14908-1 Control Network Protocol on top of UDP and IPv4 or IPv6.

3.5 CNP/IP-CN

CNP/IP on a native CNP link such as a link hosting a TP/FT-10 channel defined by EN 14908-2, a PL-20 channel defined by EN 14908-3, or an IP-852 channel defined by EN 14908-4

3.6 CNP/IP control services

defined by EN 14908-1 Layers 4 through 7, including reliable transport, request/response, multicast, authentication, and network variables

3.7 CNP/IP internetwork address

internetwork address as defined by IPv4 or IPv6

Note 1 to entry: A CNP/IP device shall have a CNP/IP internetwork address. If the internetwork address can be mapped from the CNP/IP network address, the internetwork address is a mapped IP address. If not, it is a translated IP address. The CNP/IP internetwork address may be the same as the host IP address, but it can be different.

3.8 CNP/IP network address

network address as defined by the EN 14908-1 protocol

Note 1 to entry: All CNP/IP devices in a network domain have an EN 14908-1 network address and use CNP/IP network addressing to communicate with other CNP/IP devices in the same domain.