



BSI Standards Publication

Open Data Communication in Building Automation, Controls and Building Management — Control Network Protocol

Part 8: Communication using Broadband over Power
Line Networks — with internet protocols

This is a preview of "BS EN 14908-8:2021". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN 14908-8:2021.

The UK participation in its preparation was entrusted to Technical Committee RHE/16, Performance requirements for control systems.

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

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English Version

Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 8: Communication using Broadband over Power Line Networks - with 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 8 : Communication large bande sur les réseaux CPL via les protocoles Internet

Firmenneutrale Datenkommunikation für die Gebäudeautomation und Gebäudemanagement - Steuerungs-Netzwerk-Protokoll - Teil 8: Breitband Kommunikation mit Internetprotokollen über Powerline-Netzwerke

This European Standard was approved by CEN on 8 July 2021.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 14908-8:2021) 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 March 2022, and conflicting national standards shall be withdrawn at the latest by March 2022.

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

This document 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 document covers the data communications used for management, automation/control and field functions. This document is based on the American standards EIA/CEA-709.1-B Control Network Protocol Specification.

This document is part of a series of European Standards under the general title *Open Data Communication in Building Automation, Controls and Building Management — Control Network Protocol*, 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: Implementation*
- *Part 6: Application elements*
- *Part 7: Communication via internet protocols*
- *Part 8: Communication using Broadband over Power Line Networks — with internet protocols (this document)*
- *Part 9: Wireless Communication in ISM bands*

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

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

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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. This document describes services in layer 1 and layer 2.

The layer 1 (physical layer) specification describes the MAC sub-layer interface to the physical layer. The layer 2 (data link 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 14908-1:2014, *Open Data Communication in Building Automation, Controls and Building Management - Control Network Protocol - Part 1: Protocol Stack*

IEEE 1901-2010, *IEEE Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications*

ITU-T G.9905, *Centralized metric-based source routing*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14908-1, IEEE 1901 apply.

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

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

NOTE Additionally, the following subclause introduces the basic terminology employed throughout this document. Most of it is commonly used and the terms have the same meaning in both the general and the standard context. 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 document can perform network address modification, but typically they only examine the network address fields and selectively forward packets based on the network layer address fields.

3.1

channel

logical link between one or more communication nodes

NOTE Usually used interchangeably with a link. However, multiple channels can be multiplexed on a given link. For example, PL-10 and PL-20 can be used to implement two different channels on the same power cable.

3.2

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