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Road vehicles - Vehicle to grid Communication interface - Part 3: Physical and data link layer requirements (ISO 15118-3:2015)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/16

Obsahuje: EN ISO 15118-3:2016, ISO 15118-3:2015

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15118-3

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ICS 43.120

English Version

Road vehicles - Vehicle to grid Communication interface - Part 3: Physical and data link layer requirements (ISO 15118-3:2015)

Véhicules routiers - Interface de communication entre véhicule et réseau électrique - Partie 3: Exigences relatives à la couche physique et à la couche liaison de données (ISO 15118-3:2015)

Straßenfahrzeuge - Kommunikationsschnittstelle zwischen Fahrzeug und Ladestation - Teil 3: Anforderungen an physikalische- und Datenverbindungsschnittstelle (ISO 15118-3:2015)

This European Standard was approved by CEN on 21 February 2016.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

The text of ISO 15118-3:2015 has been prepared by Technical Committee ISO/TC 22 “Road vehicles” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15118-3:2016 by Technical Committee CEN/TC 301 “Road vehicles” the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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

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Endorsement notice

The text of ISO 15118-3:2015 has been approved by CEN as EN ISO 15118-3:2016 without any modification.

STN EN ISO 15118-3: 2016

INTERNATIONAL STANDARD

ISO 15118-3

First edition
2015-05-15

Road vehicles — Vehicle to grid communication interface —

Part 3: Physical and data link layer requirements

Véhicules routiers — Interface de communication entre véhicule et réseau électrique —

Partie 3: Exigences relatives à la couche physique et à la couche liaison de données

Reference number
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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication*.

ISO 15118 consists of the following parts, under the general title *Road vehicles — Vehicle to grid communication interface*:

— *Part 1: General information and use-case definition*

— *Part 2: Network and application protocol requirements*

— *Part 3: Physical layer and Data Link Layer requirements*

The following parts are under preparation:

— *Part 4: Network and application protocol conformance test*

— *Part 5: Physical layer and data link layer conformance test*

— *Part 6: General information and use-case definition for wireless communication*

— *Part 7: Network and application protocol requirements for wireless communication*

— *Part 8: Physical layer and data link layer requirements for wireless communication*

Introduction

The pending energy crisis and the necessity to reduce greenhouse gas emissions has led the vehicle manufacturers to a very significant effort to reduce the energy consumption of their vehicles. They are presently developing vehicles partly or completly propelled by electric energy. Thus, vehicles will reduce the dependency on oil, improve the global energy efficiency, and reduce the total CO_2 emissions for road transportation if the electricity is produced from renewable sources. To charge the batteries of such vehicles, specific charging infrastructure is required.

Much of the standardization work on dimensional and electrical specifications of the charging infrastructure and the vehicle interface is already treated in the relevant ISO or IEC groups. However, the question of information transfer between the vehicle and the grid has not been treated sufficiently.

Such communication is beneficial for the optimization of energy resources and energy production systems as vehicles can recharge at the most economic or most energy-efficient instants.

It is also required to develop efficient and convenient payment systems in order to cover the resulting micro-payments. The necessary communication channel might serve in the future to contribute to the stabilization of the electrical grid, as well as to support additional information services required to operate electric vehicles efficiently.

INTERNATIONAL STANDARD **ISO 15118-3:2015(E)**

Road vehicles — Vehicle to grid communication interface —

Part 3:
Physical and data link layer requirements

1 Scope

This part of ISO 15118 specifies the requirements of the physical and data link layer for a high-level communication, directly between battery electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV), termed as EV (electric vehicle) [ISO-1], based on a wired communication technology and the fixed electrical charging installation [Electric Vehicle Supply Equipment (EVSE)] used in addition to the basic signalling, as defined in *[IEC-1]*.

It covers the overall information exchange between all actors involved in the electrical energy exchange. ISO 15118 (all parts) is applicable for manually connected conductive charging.

Only "*[IEC-1]* modes 3 and 4" EVSEs, with a high-level communication module, are covered by this part of ISO 15118.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15118-1:2013, *Road vehicles — Vehicle to grid communication interface — Part 1: General information and use-case definition*

ISO 15118-2:2014, *Road vehicles — Vehicle to grid communication interface — Part 2: Network and application protocol requirements*

IEC 61851-1:2010, *Electric vehicle conductive charging system — Part 1: General requirements*

IEC/TS 62763:2013, *Pilot function through a control pilot circuit using PWM (pulse width modulation) and a control pilot wire*

