

STN	Normalizované rozhranie na pripojenie nabíjacích staníc k systémom lokálneho energetického manažmentu Časť 1: Všeobecné požiadavky, prípady použitia a abstraktné správy	STN EN IEC 63380-1 34 1593
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Standard interface for connecting charging stations to local energy management systems - Part 1: General requirements, use cases and abstract messages

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. 08/25

Obsahuje: EN IEC 63380-1:2025, IEC 63380-1:2025

140960



Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2025

Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 63380-1

May 2025

ICS 29.240.99; 43.120

English Version

**Standard interface for connecting charging stations to local
energy management systems - Part 1: General requirements,
use cases and abstract messages
(IEC 63380-1:2025)**

Interface normalisée pour la connexion des bornes de
charge aux systèmes locaux de gestion de l'énergie - Partie
1 : Exigences générales, cas d'utilisation et messages
abstraits
(IEC 63380-1:2025)

Standardschnittstelle für das Verbinden von Ladestationen
an lokale Energiemanagementsysteme - Teil 1: Allgemeine
Anforderungen, Anwendungsfälle und abstrakte
Nachrichten
(IEC 63380-1:2025)

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Europäisches Komitee für Elektrotechnische Normung

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EN IEC 63380-1:2025 (E)**European foreword**

The text of document 69/1036/FDIS, future edition 1 of IEC 63380-1, prepared by TC 69 "Electrical power/energy transfer systems for electrically propelled road vehicles and industrial trucks" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63380-1:2025.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2026-05-31 level by publication of an identical national standard or by endorsement
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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 63110-1:2022	NOTE	Approved as EN IEC 63110-1:2022 (not modified)
ISO 15118-20:2022	NOTE	Approved as EN ISO 15118-20:2022 (not modified)
IEC 63110 series	NOTE	Approved as EN IEC 63110 series
IEC 63119 series	NOTE	Approved as EN IEC 63119 series
IEC 63380 series	NOTE	Approved as EN IEC 63380 series
ISO 15118 series	NOTE	Approved as EN ISO 15118 series

Annex ZA **(normative)**

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61851-1	2017	Electric vehicle conductive charging system - Part 1: General requirements	EN IEC 61851-1	2019
ISO 15118-2	2014	Road vehicles - Vehicle-to-grid communication interface - Part 2: Network and application protocol requirements	EN ISO 15118-2	2016
ISO 15118-20	2022	Road vehicles - Vehicle to grid communication interface - Part 20: 2nd generation network layer and application layer requirements	EN ISO 15118-20	2022



IEC 63380-1

Edition 1.0 2025-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Standard interface for connecting charging stations to local energy management systems –

Part 1: General requirements, use cases and abstract messages

Interface normalisée pour la connexion des bornes de charge aux systèmes locaux de gestion de l'énergie –

Partie 1 : Exigences générales, cas d'utilisation et messages abstraits



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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
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INTERNATIONAL
ELECTROTECHNICAL
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INTERNATIONALE

ICS 29.240.99, 43.120

ISBN 978-2-8327-0343-4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**STANDARD INTERFACE FOR CONNECTING CHARGING STATIONS
TO LOCAL ENERGY MANAGEMENT SYSTEMS –****Part 1: General requirements, use cases and abstract messages****FOREWORD**

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The text of this International Standard is based on the following documents:

Draft	Report on voting
69/1036/FDIS	69/1048/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63380 series, published under the general title *Standard interface for connecting charging stations to local energy management systems*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

The expansion of renewable energy and the simultaneous reduction in conventional generation of electricity result in new power flows and loads on the equipment in the grid and at the house connection point. At the same time, electrical consumers with high power consumption are increasingly being installed in low-voltage systems in private customer systems. These include charging systems for electric vehicles and heat pumps. These two developments can temporarily lead to peak loads and bottlenecks in the network. An expansion of the distribution grids for the comparatively few hours of high simultaneous power consumption is not considered economically sensible. The legislator of energy efficiency has therefore introduced the concept of "network-friendly control of controllable consumer devices".

It is crucial to define a standardized interface for the connected consumers and generating facilities, which also includes the charging infrastructure for electric vehicles. When developing a local, standardized interface, it is important to make a fundamental distinction between the terms power and energy management.

In order to avoid an overload and the associated emergency shutdown due to specified power limits in the property while all consumers are drawing electricity at the same time – especially heating and air conditioning technology as well as charging infrastructure – power management is of great urgency. The maximum load at the grid connection point can therefore be reduced. Accordingly, it is important to give priority to local power management over, for example, optimization of operations and tariffs or desired charging plans.

Furthermore, the tariff-optimized operation can be pursued within the limits specified by the grid infrastructure – controlled by the energy management system. As a consequence, a charging infrastructure will be able to transmit information about procurement and tariff-optimized operation from the local energy management of the property to the electric vehicle so that it can coordinate its charging plan according to local demands. Effective coordination becomes essential if generating systems are used within the property in order to achieve the highest possible self-consumption of electricity.

The long-term goal is to buffer power and energy bottlenecks within a property using the energy stored in the vehicle, which also brings the topic of energy recovery into focus and this aspect needs to be considered during the development of a standardized interface for local power and energy management.

The aim of the IEC 63380 series is to define a standard interface for connecting charging stations to local energy management systems and the information exchange.

The IEC 63380 series specifies use cases, the sequences of information exchange, the data models as well as the communication protocols to be used and includes all aspects of local energy management of charging stations.

The IEC 63380 series covers scenarios where the charging infrastructure is managed by the entity that operates the private electrical network, and local energy management systems are used for local load management.

The IEC 63380 series addresses the energy management in installations with forward and bidirectional charging whereby the overall energy management is ensured by the customer energy manager.

The IEC 63380 series does not cover the secure information exchange between the charging station and the IT backend system(s), such as the management of energy transfer of the charge session, contractual and billing data, provided by the IT backend.

The IEC 63380 series consists of the following structure, describing the interface between charging stations and local energy management systems.

- IEC 63380-1: General requirements, use cases and abstract messages
- IEC 63380-2: Specific data model mapping
- IEC 63380-3: Communication protocol and cybersecurity specific aspects
- IEC 63380-4: Test specifications

STANDARD INTERFACE FOR CONNECTING CHARGING STATIONS TO LOCAL ENERGY MANAGEMENT SYSTEMS –

Part 1: General requirements, use cases and abstract messages

1 Scope

This part of IEC 63380 defines the secure information exchange between local energy management systems and electric vehicle charging stations. The local energy management systems communicate to the charging station controllers via the resource manager.

This document specifies use cases, the sequences of information exchange and generic data models.

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.

IEC 61851-1:2017, *Electric vehicle conductive charging system – Part 1: General requirements*

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

ISO 15118-20:2022, *Road vehicles – Vehicle to grid communication interface – Part 20: 2nd generation network layer and application layer requirements*

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