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Irish Standard
I.S. EN 50696:2021

Contact Interface for Automated Connection Device

I.S. EN 50696:2021

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National Foreword

I.S. EN 50696:2021 is the adopted Irish version of the European Document EN 50696:2021, Contact Interface for Automated Connection Device

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50696

February 2021

ICS 43.120

English Version

Contact Interface for Automated Connection Device

Interface de contact pour les dispositifs de connexion automatisés

Kontaktschnittstelle für ein automatisches Kontaktierungssystem

This European Standard was approved by CENELEC on 2021-01-11. CENELEC 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 CENELEC 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 CENELEC 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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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 50696:2021) has been prepared by CLC/TC 23H, WG 5, “Contact interface for automated connection devices (ACD)”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2022-01-11
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2024-01-11

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Introduction

The electrical interface for charging electrically propelled vehicles with plugs, socket-outlets, vehicle connectors and vehicle inlets is described in EN 62196 series and EN 61851-23. For heavier vehicles such as buses and trucks, requirements of short charging times with high energy present a problem of handling, and safety with hand-held connecting devices. For these high current charging applications, an automated connection device (ACD) is of interest.

An automated coupler consists out of a mobile assembly with electrical contacts, called ACD and fixed electrical contacts, called ACD counterpart. Automated couplers allow an unmanned connection of high-current contacts and signal/control contacts.

This document contains requirements for all type of ACDs. Its annexes describe specific implementations and specific requirements. This document is expected to be read in conjunction with IEC 61851-23-1:—[1].

[1] Under preparation. Stage at time of publication: IEC CDV 61851-23-1:2020.

1 Scope

This document is applicable to ACDs of standardized configuration, intended for use in electric vehicle conductive charging systems which incorporate control means, with rated operating voltage up to 1 500 V DC.

This document applies to high power DC interfaces intended for use in isolated conductive charging systems, for circuits specified in IEC 61851-23-1:—[1].

The ACDs covered by this document are used only in charging mode 4, according to IEC 61851-23-1:—[1], 3.1.201 Case D or 3.1.202 Case E.

This document describes the requirements for an ACD in regard of safety, function and testing. This document describes basic parameters that can be standardized for different ACDs. ACDs following these standardized parameters will have the benefit of being compatible, even if they are based on different technologies.

This document does not apply to solutions based on a vehicle connector described in EN 62196-3 driven by an automated mechanism, as, for instance, a robotic arm.

This document does not cover all safety aspects related to maintenance.

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 1652, *Copper and copper alloys - Plate, sheet, strip and circles for general purposes*

EN 12163, *Copper and copper alloys - Rod for general purposes*

EN 12167, *Copper and copper alloys - Profiles and bars for general purposes*

EN 16005, *Power operated pedestrian doorsets – Safety in use – Requirements and test methods*

EN 50124-1, *Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment*

EN 60068-2-11, *Environmental testing - Part 2: Tests - Test Ka: Salt mist (IEC 60068-2-11)*

EN 60309-1:1999, *Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements (IEC 60309-1:1999)*

EN 60512-2-2, *Connectors for electronic equipment - Tests and measurements – Part 2-2: Electrical continuity and contact resistance tests - Test 2b: Contact resistance – Specified test current method*

EN 60512-5-1, *Connectors for electronic equipment - Tests and measurements - Part 5-1: Current-carrying capacity tests - Test 5a: Temperature rise (IEC 60512-5-1)*

EN 60512-5-2, *Connectors for electronic equipment - Tests and measurements - Part 5-2: Current-carrying capacity tests - Test 5b: Current-temperature derating (IEC 60512-5-2)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 60664-1, *Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests (IEC 60664-1)*

EN 61140, *Protection against electric shock - Common aspects for installation and equipment (IEC 61140)*