SLOVENSKI STANDARD
SIST EN IEC 62613-1:2018

01-junij-2018

Vtiči, vtičnice in ladijske spojke za visokonapetostne priključne sisteme na kopnem (HVSC-sistemi) - 1. del: Splošne zahteve

Plugs, socket-outlets and ship couplers for high-voltage shore connection systems (HVSC-Systems) - Part 1: General requirements

Hochspannungsstecker und -steckdosen, Hochspannungs-Schiffskupplungen und -Schiffsstecker für Hochspannungs-Landanschlusssysteme (HVSC-Systeme) - Teil 1: Allgemeine Anforderungen

Prises de courant et connecteurs de navire pour les systèmes haute tension de raccordement des navires à quai - Partie 1: Règles générales

Ta slovenski standard je istoveten z: **EN IEC 62613-1:2018**

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29.120.30	Vtiči, vtičnice, spojke	Plugs, socket-outlets, couplers

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62613-1

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English Version

Plugs, socket-outlets and ship couplers for high-voltage shore connection systems (HVSC-Systems) - Part 1: General requirements (IEC 62613-1:2011)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

European foreword

This document EN IEC 62613-1:2018 consists of the text of IEC 62613-1:2011 prepared by IEC/SC 23H "Plugs, Socket-outlets and Couplers for industrial and similar applications, and for Electric Vehicles, of IEC technical committee 23: Electrical accessories".

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)	2019-03-05
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2021-03-05

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Endorsement notice

The text of the International Standard IEC 62613-1:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60309 (series)	NOTE	Harmonized as EN 60309 (series).
IEC 60309-1:1999 +A1:2005	NOTE	Harmonized as EN 60309-1:1999 (not modified). +A1:2007
IEC 62613-2:2016	NOTE	Harmonized as EN 62613-2:2018 (not modified).

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.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-75	-	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	-
IEC 60092	Series	Electrical installations in ships	EN 60092	Series
IEC 60092-101	1994	Electrical installations in ships - Part 101: Definitions and general requirements	-	-
IEC 60092-354	-	Electrical installations in ships - Part 354: Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)	-	-
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60228	-	Conductors of insulated cables	EN 60228	-
IEC 60269-1	2006	Low-voltage fuses - Part 1: General requirements	EN 60269-1	2007
IEC 60269-2 (mod)	2010	Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to J	HD 60269-2	2010 [1]
IEC 60502-4	2010	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) - Part 4: Test requirements on accessories for cables with rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 60664-1	-	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	-

[1] Superseded by HD 60269-2:2013 (IEC 60269-2:2013, modified).

Publication	Year	Title	EN/HD	Year
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)	EN 60695-2-11	-
IEC 60695-10-2	-	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test method	EN 60695-10-2	-
IEC 62262	-	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN 62262	-
IEC 62271-1	-	High-voltage switchgear and controlgear - Part 1: Common specifications	EN 62271-1	-
IEEE 1580	-	IEEE Recommended Practice for Marine Cable for Use on Shipboard and Fixed or Floating Facilities	-	-
ASTM B117	1985	Standard practice for operating salt spray (fog) apparatus	-	-

IEC 62613-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Plugs, socket-outlets and ship couplers for high-voltage shore connection systems (HVSC-Systems) – Part 1: General requirements

Prises de courant et connecteurs de navire pour les systèmes haute tension de raccordement des navires à quai – Partie 1: Règles générales

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PLUGS, SOCKET-OUTLETS AND SHIP COUPLERS FOR HIGH-VOLTAGE SHORE CONNECTION SYSTEMS (HVSC-SYSTEMS) –

Part 1: General requirements

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62613-1 has been prepared by subcommittee 23H: Industrial plugs and socket-outlets, of IEC technical committee 23: Electrical accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
23H/254/FDIS	23H/259/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type*;
- notes: in smaller roman type.

A list of all the parts in the IEC 62613 series, under the general title *Plugs, socket-outlets and ship couplers for high-voltage shore connection systems (hvsc-systems)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

International Standard IEC 62613-1 has been primarily written to address the needs of the IEC/PAS 60092-510 High Voltage Shore Connection Systems, in terms of plugs, socket-outlets, ship connectors and ship inlets, herein referred to as “accessories”, to deliver electrical power to ships in ports. The purpose of the IEC/PAS 60092-510 is to define requirements that allow compliant ships to connect to compliant high-voltage shore power supplies through a compatible shore-to-ship connection.

Ships that do not require connecting with standardized high-voltage shore power supplies as above may use accessories that are not covered by the standard sheets of IEC 62613-2 but they may find it impossible to connect to these shore supplies.

Other low voltage plugs, socket-outlets, ship connectors and ship inlets used for the connection of certain ship types to low-voltage shore power supplies may be found in the IEC 60309 series.

International Standard IEC 62613 is divided into several parts:

Part 1: General requirements, comprising clauses of a general character.

Part 2: Dimensional compatibility and interchangeability requirements for accessories used for ship-to-shore connections, comprising standard sheets for different types of accessories.

These ships are described in IEC/PAS 60092-510.

PLUGS, SOCKET-OUTLETS AND SHIP COUPLERS FOR HIGH-VOLTAGE SHORE CONNECTION SYSTEMS (HVSC-SYSTEMS) –

Part 1: General requirements

1 Scope

This part of IEC 62613 applies to accessories with

- three phases (3 poles and Earth) with up to three pilot contacts,
- one single pole (Neutral).

These accessories have rated currents not exceeding 500 A and rated operating voltages not exceeding 12 kV 50/60 Hz.

NOTE 1 In the USA, the term "Ground" is used instead of "Earth".

These accessories are primarily intended for use outdoors, in a seawater environment, for the shore supply of ships (ship-to-shore connection), in an ambient temperature within the range of -25 °C to +45 °C.

NOTE 2 In some countries, other ambient temperatures may prevail and may need to be taken into account.

These accessories are not intended for use in hazardous areas. In such locations where special conditions prevail, additional requirements may be necessary.

These accessories are intended to be connected to cables of copper or copper alloy only.

Socket-outlets or ship inlets incorporated in or fixed to electrical equipment are within the scope of this standard.

2 Normative references

The following referenced documents are indispensable for the application 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 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60092 (all parts), *Electrical installations in ships*

IEC 60092-101:1994, *Electrical installations in ships – Part 101: Definitions and general requirements*

IEC 60092-354, *Electrical installations in ships – Part 354: Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60228, *Conductors of insulated cables*

IEC 60269-1:2006, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-2:2010, *Low-voltage fuses – Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Examples of standardized systems of fuses A to J*

IEC 60502-4:2010, *Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) – Part 4: Test requirements on accessories for cables with rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)*

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

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

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60695-10-2, *Fire hazard testing – Part 10-2 : Abnormal heat – Ball pressure test*

IEC 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

IEC 62271-1, *High voltage Switchgear and Controlgear – Part 1: Common specifications*

IEEE 1580, *Recommended Practice for Marine Cable for use on Shipboard and Fixed or Floating Marine Platforms*

ASTM B117-1985, *Standard practice for operating salt spray (fog) apparatus*

3 Terms and definitions

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

NOTE Where the terms “voltage” and “current” are used, they imply the a.c. r.m.s. values.

3.1
accessory
plugs, socket-outlets, ship connectors and ship inlets

NOTE The application of accessories is shown in Figure 1.

3.2
socket-outlet
the part intended to be installed with the fixed wiring or incorporated in equipment

NOTE A socket-outlet may also be incorporated in the output circuit of an isolating transformer.

3.3
plug
the part intended to be attached directly to one flexible cable

3.4
ship coupler
a means enabling the connection at will of a flexible cable to the ship. It consists of two parts, a ship connector and ship inlet

3.5
ship connector
the part intended to be attached to one flexible cable connected to the supply

3.6
ship inlet
the part incorporated in, or fixed to, the ship

3.7
interlock
a device, either electrical and/or mechanical, which prevents the contacts of a plug from becoming live before it is in proper engagement with a socket-outlet, and which either prevents the plug or the ship connector from being withdrawn while its contacts are live or makes the contacts dead and Earthed before separation

NOTE In the USA, the term "Grounded" is used instead of "Earthed".

3.8
retaining device
a mechanical arrangement which holds a plug or ship connector in position when it is in proper engagement, and prevents its unintentional withdrawal

3.9
cap
a part separated or attached, which may be used to provide the degree of protection of a plug or ship inlet when it is not engaged with a socket-outlet or ship connector

3.10
lid
a means to ensure the degree of protection on a socket-outlet or a ship connector

3.11
insulation voltage
the voltage assigned to the accessory by the manufacturer and to which dielectric tests, clearances and creepage distances are referred

3.12
rated current
the current assigned to the accessory by the manufacturer

3.13
rated operating voltage
the nominal voltage of the supply for which the accessory is intended to be used

3.14
conditional short-circuit current
the prospective current that an accessory, protected by a specified short-circuit protective device, can satisfactorily withstand for the total operating time of that device under specified conditions of use and behaviour

NOTE This definition differs from definition 17-20 of IEC 60050-441 by broadening the concept of current-limiting device into a short-circuit protective device, the function of which is not only to limit the current.