



SLOVENSKI STANDARD

SIST EN 15869-1:2019

01-september-2019

Nadomešča:
SIST EN 15869-1:2010

Plovila za celinske vode - Električne povezave s kopnim, trifazni tok 400 V, 50 Hz, do 125 A - 1. del: Splošne zahteve

Inland navigation vessels - Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A - Part 1: General requirements

Fahrzeuge der Binnenschifffahrt - Elektrischer Landanschluss, Drehstrom 400 V, 50 Hz, bis 125 A - Teil 1: Allgemeine Anforderungen

Bateaux de navigation intérieure - Connexion au réseau électrique terrestre, courant triphasé 400 V, à 125 A, 50 Hz - Partie 1: Exigences générales

Ta slovenski standard je istoveten z: EN 15869-1:2019

ICS:

47.020.60	Električna oprema ladij in konstrukcij na morju	Electrical equipment of ships and of marine structures
47.060	Jezerska in rečna plovila	Inland navigation vessels

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15869-1

June 2019

ICS 47.020.60; 47.060

Supersedes EN 15869-1:2010

English Version

Inland navigation vessels - Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A - Part 1: General requirements

Bateaux de navigation intérieure - Connexion au réseau
électrique terrestre, courant triphasé 400 V, 125 A
maximum, 50 Hz - Partie 1 : Exigences générales

Fahrzeuge der Binnenschifffahrt - Elektrischer
Landanschluss, Drehstrom 400 V, 50 Hz, bis 125 A -
Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 22 April 2019.

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.

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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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

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European foreword

This document (EN 15869-1:2019) has been prepared by Technical Committee CEN/TC 15 "Inland navigation vessels", the secretariat of which is held by DIN.

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 December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.

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 supersedes EN 15869-1:2010.

A list of all parts in the EN 15869 series, published under the general title *Inland navigation vessels — Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A*, can be found on the CEN-CENELEC website.

The main changes compared to the previous edition are as follows:

- the maximum operating current has been increased up to 125 A;
- the title has been changed accordingly;
- the scope has been extended and clarified;
- the Normative references have been supplemented;
- Clause 3 has been completed and the definitions of terms adapted to those used in EN 16840;
- requirements common to all parts of the electrical system "shore connection" have been moved from Part 2 and Part 3 to Part 1 and merged;
- Figure 1 has been adapted to the corresponding figure in EN 16840;
- Clause A.5 has been added to Annex A;
- references from all parts of the EN 15869 series have been combined and inserted in Part 1.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 15869-1:2019 (E)**Introduction**

Inland navigation vessels are equipped with a variety of electrical loads operating at 230 V or 400 V. While underway, continuous electrical power supply is provided by the on-board system from generators driven by diesel engines. When the vessel is berthed, these generators remain in operation if there is no suitable onshore power supply available. In some cases, this leads to intense noise pollution both for the crew on the vessel itself and on other vessels lying alongside and also for residents ashore. The exhaust fumes are an additional pollution factor.

The electrical shore connections specified in this European Standard make it possible to provide the vessels with an electrical power supply while berthed and to eliminate noise and exhaust pollution. This calls for a uniform Europe-wide shore connection that can be activated and deactivated by the vessel's crew in all ports and berths, if possible, without requiring any assistance from shore-based personnel. This European Standard contains electrical safety requirements for the prevention of hazards in making, using and breaking the shore connection.

Furthermore, cashless settlement for the electricity used should be possible, ideally a standard Europe-wide payment system.

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1 Scope

This document specifies requirements for electrical installations for the shore supply of berthing inland navigation vessels with electrical energy, three-phase current 400 V, 50 Hz with a rated current of up to 125 A.

This document applies to the supply of inland navigation vessels in ports and moorings for commercial inland navigation.

This document specifies general requirements and contains information on the billing procedure.

For the supply of small craft and houseboats in marinas and similar installations the requirements of HD 60364-7-709 apply.

For electrical shore connections with a current rating more than 125 A, which are suitable for passenger ships with hotel operation, EN 16840 applies.

The requirements for the HD 60364 series and HD 384 series generally apply to low-voltage systems on shore. A detailed list of the relevant parts is given in the Bibliography.

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 15869-2, *Inland navigation vessels – Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A – Part 2: On-shore unit, additional requirements*

EN 15869-3, *Inland navigation vessels – Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A – Part 3: On-board unit, additional requirements*

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

EN 60309-2, *Plugs, socket-outlets and couplers for industrial purposes – Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories (IEC 60309-2)*

3 Terms and definitions

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

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

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

3.1

electrical shore connection

<inland navigation> electrical installation for the supply of electrical energy to a vessel berthed in port or at landing stage

EN 15869-1:2019 (E)**3.2****power supply station**

<inland navigation> shore-based part of the electrical shore connection with one or more shore connection units

3.3**shore connection unit**

<inland navigation> unit for connection with an on-board network

3.4**activation medium**

<inland navigation> system for the activation of the supply of power and cashless settlement of the costs

3.5**feeding unit**

<inland navigation> on-board equipment required for receiving of electrical energy

3.6**on-board network**

self-contained wiring system of an inland navigation vessel for the distribution of electrical energy

Note 1 to entry: A vessel can have several separated on-board networks.

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3.7**shore connection cable**

flexible cable, fitted with plug and connector (coupler) or on-board permanently connected flexible cable with plug

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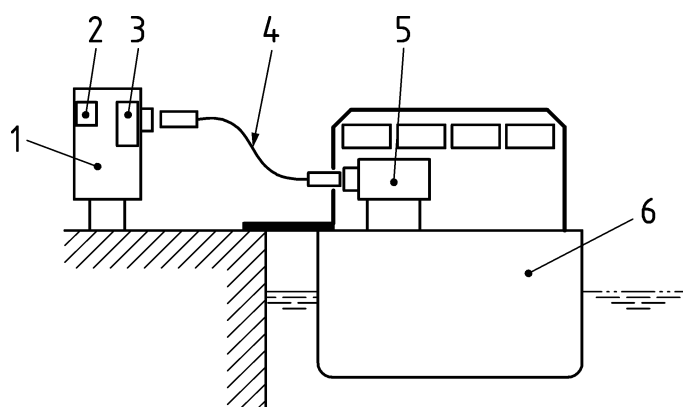
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4 Requirements**4.1 Components**

The electrical shore connection consists of the following components, see Figure 1:

- a) power supply station according to EN 15869-2;
- b) shore connection cable according to EN 15869-3;
- c) feeding unit according to EN 15869-3.



Key

- 1 power supply station
- 2 operating instructions
- 3 shore connection unit
- 4 shore connection cable
- 5 feeding unit Type B
- 6 inland navigation vessel

Figure 1 — Schematic representation of an electrical shore connection

4.2 Electrical characteristics (standards.iteh.ai)

The electrical shore connection shall be designed as a minimum for three-phase current 400 V, 50 Hz, 32 A. Plug-in connections shall meet the requirements of EN 60309-1 and EN 60309-2. Three-phase connections for 16 A and for 32 A shall be provided.

Optionally, three-phase connections for 63 A and 125 A and a single-phase connection for 230 V, 16 A may be provided. It is recommended to select the connections depending on the structure of the respective waterway.

NOTE Continuous power can be transferred as follows: with 16 A approximately 11 kVA, with 32 A approximately 22 kVA, with 63 A approximately 44 kVA and with 125 A approximately 87 kVA.

4.3 Activation

The shore connection unit may only be energized via the activation medium, e.g. Annex A. It shall be possible to start and stop the electrical power supply at any time without the aid of shore-side personnel.

4.4 Consumption metering and billing

If billing is requested, this shall be done with a suitable measuring device as a lump sum or consumption-based. Each shore connection unit shall then have its own consumption metering system.

Annex A (informative) gives examples of activation and consumption recording systems.

4.5 Deviations from 4.3 and 4.4

In ports and berths where personnel is provided at all times or the provision and supply of energy is free, there may be deviations from the requirements for the autonomous connection and consumption measurement.