
Plovila za celinske vode - Električne povezave s kopnim, trifazni tok 400 V, do 63 A, 50 Hz - 2. del: Kopenska enota, varnostne zahteve

Inland navigation vessels - Electrical shore connection, three phase current 400 V, up to 63 A, 50 Hz - Part 2: Onshore unit, safety requirements

Fahrzeuge der Binnenschifffahrt - Elektrischer Landanschluss, Drehstrom 400 V, bis 63 A, 50 Hz - Teil 2: Landseitiger Teil, sicherheitstechnische Anforderungen

Bateaux de navigation intérieure - Connexion au réseau électrique terrestre, courant triphasé de 400 V, 63 A maximum, 50 Hz - Partie 2: Unité terrestre, exigences de sécurité

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Ta slovenski standard je istoveten z: EN 15869-2:2010

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

SIST EN 15869-2:2010

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EUROPEAN STANDARD

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Inland navigation vessels - Electrical shore connection, three phase current 400 V, up to 63 A, 50 Hz - Part 2: Onshore unit, safety requirements

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This European Standard was approved by CEN on 25 December 2009.

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 Management Centre or to any CEN 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 CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Safety requirements	7
4.1 General.....	7
4.2 Mechanical safety	8
4.3 Electrical safety.....	8
4.4 Other provisions	9
5 Designation	9
6 Marking	9
7 Manufacturer's declaration of conformity.....	9
Bibliography	10

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Figures

Figure 1 — Block diagram of an electrical power-supply station with two connector units.....	7
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Foreword

This document (EN 15869-2:2010) 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 August 2010, and conflicting national standards shall be withdrawn at the latest by August 2010

EN 15869, *Inland navigation vessels — Electrical shore connection — Three-phase current 400 V, up to 63 A, 50 Hz* comprises:

- *Part 1: General requirements*
- *Part 2: Onshore unit, safety requirements*
- *Part 3: On-board unit, safety requirements*

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

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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 onboard system from generators driven by diesel engines. When the vessel is berthed, these generators have to 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 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 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 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 shall be possible, ideally a standard Europe-wide payment system.

Electrical shore connections with a permissible current of over 63 A as used for passenger ships with a hotelling function are not covered by this standard.

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1 Scope

This European Standard specifies requirements applicable to equipment for shore-to-vessel supply of three-phase 400 V electrical power up to 63 A and a frequency of 50 Hz to berthed inland navigation vessels.

This part of the European Standard specifies safety requirements for the onshore unit of the electrical shore connection.

This part of the European Standard applies only to the supply of inland navigation vessels in ports and berths for commercial shipping. Supply stations for leisure craft and houseboats in marinas or similar locations have to meet the requirements of IEC 60364-7-709.

For low-voltage electrical installations, the requirements specified in the HD 60364 and HD 384 series are applicable generally. The requirements in this part of EN 15869 supplement, amend or supersede some of the requirements in HD 60364/HD 384 Parts 1 to 6. Where no requirements are given in this part of EN 15869, the requirements specified in the HD 60364 and HD 384 are applicable; a detailed list is given in the Bibliography.

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.

EN 15869-1, *Inland navigation vessels — Electrical shore connection, three-phase current 400 V, up to 63 A, 50 Hz — Part 1: General requirements*

EN 14145, *Holders for lifebuoys* [SIST EN 15869-2:2010
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EN 60309-1, *Plugs, socket-outlets and couplers for industrial purposes — Part 1: General requirements (IEC 60309-1:1999)*

EN 60309-2, *Plugs, socket-outlets and couplers for industrial purposes — Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories (IEC 60309-2:1999)*

EN 60309-4, *Plugs, socket-outlets and couplers for industrial purposes — Part 4: Switched socket-outlets and connectors with or without interlock (IEC 60309-4:2006, modified)*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 60898-1, *Electrical accessories — Circuit-breakers for overcurrent protection for household and similar installations — Part 1: Circuit-breakers for a.c. operation (IEC 60898-1:2002, modified)*

EN 61008-1, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) — Part 1: General rules (IEC 61008-1:1996 + A1:2002, modified)*

HD 22.16.S2, *Cables of rated voltages up to and including 450/750 V and having cross-linked insulation — Part 16: Water resistant polychloroprene or equivalent synthetic elastomer sheathed cables*

EN 15869-2:2010 (E)**3 Terms and definitions**

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

3.1 electrical shore connection
equipment consisting of electrical power-supply station, cable set and feed unit for the supply of electrical power to inland navigation vessels in ports and at berths

[EN 15869-1:2010]

3.2 electrical power-supply station
shore-side part of the electrical shore connection with one or more connector units

[EN 15869-1:2010]

3.3 connector unit
<inland navigation> unit for connecting an inland navigation vessel

[EN 15869-1:2010]

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

[EN 15869-1:2010]

3.5 feed unit
<inland navigation> all the onboard devices for receiving the electrical power on board

[EN 15869-1:2010]

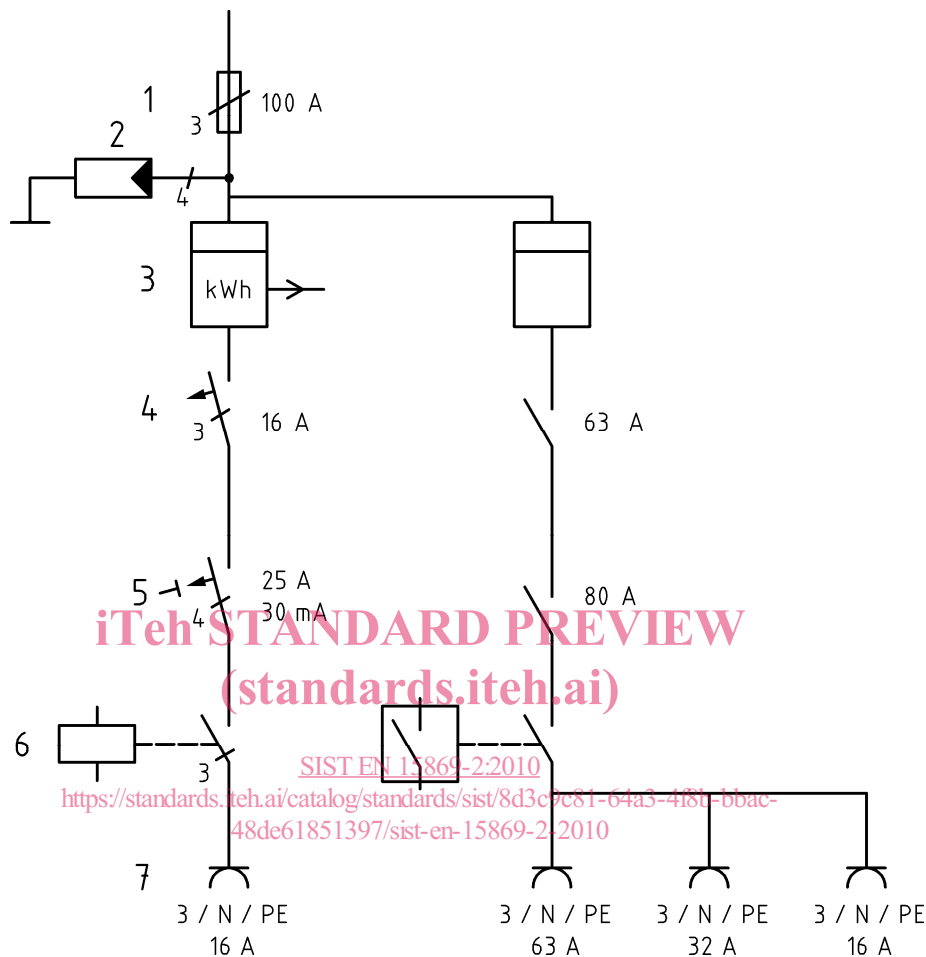
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4 Safety requirements

4.1 General



Key

- 1 fuse
- 2 overvoltage protector (if necessary)
- 3 three-phase meter (according to EN 15869-1)
- 4 circuit breaker
- 5 residual current operated circuit breaker
- 6 activation medium with enabling contactor
- 7 socket outlet (according to EN 15869-1)

Figure 1 — Block diagram of an electrical power-supply station with two connector units

The electrical power-supply station (see Figure 1) has a three-phase fuse, an overvoltage protector (optional) and one or more connector units. A connector unit consists of a circuit breaker, a residual current operated circuit breaker and 16 A (32 A and 63 A also optional) socket outlets, meter and activation medium.