

SLOVENSKI STANDARD

SIST EN 15869-2:2019

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Nadomešča:

SIST EN 15869-2:2010

Plovila za celinske vode - Električne povezave s kopnim, trifazni tok 400 V, 50 Hz, do 125 A - 2. del: Kopenska enota, dodatne zahteve

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

Fahrzeuge der Binnenschifffahrt - Elektrischer Landanschluss, Drehstrom 400 V, 50 Hz, bis 125 A - Teil 2: Landseitiger Teil, zusätzliche Anforderungen

Bateaux de navigation intérieure - Connexion au réseau électrique terrestre, courant triphasé 400 V, à 125 A, 50 Hz - Partie 2 : Unité terrestre, exigences supplémentaires

Ta slovenski standard je istoveten z: EN 15869-2:2019

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 15869-2

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ICS 29.120.30; 47.020.60; 47.060; 93.140

Supersedes EN 15869-2:2010

English Version

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

Bateaux de navigation intérieure - Connexion au réseau
électrique terrestre, courant triphasé 400 V, 125 A
maximum, 50 Hz - Partie 2 : Unité terrestre, exigences
supplémentaires

Fahrzeuge der Binnenschifffahrt - Elektrischer
Landanschluss, Drehstrom 400 V, 50 Hz, bis 125 A -
Teil 2: Landseitiger Teil, zusätzliche 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.

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.

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European foreword

This document (EN 15869-2:2019) 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 15869-2:2010.

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

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 changed;
- Terms and definitions have been moved to Part 1;
- Clause 4 has been renamed "Requirements" and divided into four sub clauses;
- Clause 4.5 “Operating instructions” has been added and aligned with requirements of EN 16840;
- requirements for documentation and instructions for use have been added;
- figures have been improved;
- former Clause 7 “Manufacturer’s declaration of conformity” has been removed;
- entries in Bibliography have been moved to Part 1 of EN 15869.

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.

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 on-shore 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 applies in connection with EN 15869-1 for the supply of berthed inland navigation vessels with electrical energy.

This document specifies additional requirements for the on-shore unit of the electrical shore connection.

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 15869-1, *Inland navigation vessels – Electrical shore connection, three phase current 400 V, 50 Hz, up to 125 A – Part 1: General requirements*

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

HD 60364-7-730, *Low-voltage electrical installations – Part 7-730: Requirements for special installations or locations – Onshore units of electrical shore connections for inland navigation vessels*

3 Terms and definitions

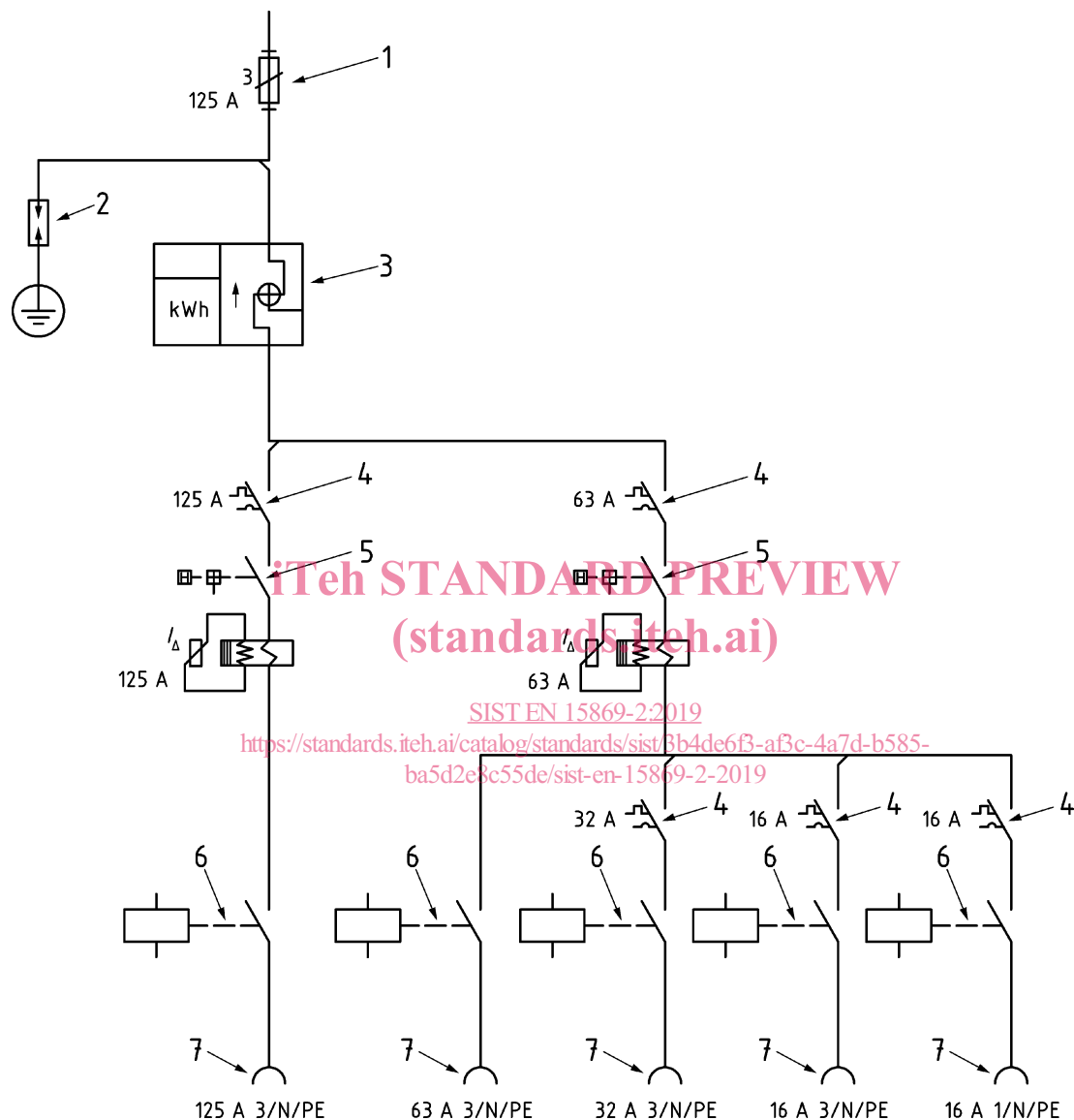
For the purposes of this document, the terms and definitions given in EN 15869-1 apply.

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>

4 Requirements

4.1 General



Key

- 1 line protection fuse
- 2 overvoltage protection (optional)
- 3 three-phase meter
- 4 circuit breaker
- 5 Residual current operated circuit breaker (RCCB) according to HD 60364-7-730
- 6 activation medium for release
- 7 socket outlet

Figure 1 — Block diagram of an electrical power-supply station with one shore connection unit

The power supply station contains a three-phase line protection fuse, an overvoltage protection (optional) and one or more shore connection units. Figure 1 shows an example of a power supply station with a shore connection unit up to 125 A. A shore connection unit consists of a circuit breaker/s, residual current operated circuit breaker/s (RCCB) type A or F and socket-outlet/s according to EN 15869-1, three-phase meter and activation medium. Technical measures shall be taken to ensure that only one of the existing socket-outlets can be activated at each shore connection unit.

Circuit breaker, residual current operated circuit breaker (RCCB) and socket-outlets shall be protected against misuse, e.g. by being located behind a door or flap that can only be opened with the activation medium according to EN 15869-1. The door or flap shall also be lockable when the connections are plugged in so that it can only be opened with the activation medium. It shall be possible that the shore connection cables can be led out without damage.

4.2 Lighting

The power supply station shall be provided with lighting so that the control elements, the operating instructions, the plug-in connectors and the three-phase meter are sufficiently lit.

4.3 Mechanical and environmental requirements

The enclosure of the power supply station shall be flame retardant. The enclosure shall be capable of being firmly mounted and it shall not be possible to open it with commercially available tools.

With appropriate technical measures it shall be ensured that no excessive tensile forces act on the plug-in connections.

The power supply station shall be designed for operation at an ambient temperature of -20°C to $+60^{\circ}\text{C}$. If necessary, these limiting values shall be extended according to the temperatures to be expected in the region of the installation location.

The complete power supply station shall have at least IP 54 degree of protection according to EN 60529, with the exception of the door or flap according to 4.1. Ingressed water or condensation water shall be able to drain.

4.4 Electrical safety

The requirements according to HD 60364-7-730 shall be met.

4.5 Operating instructions

Clearly legible operating instructions shall be provided for the user explaining the necessary operating steps and containing at least the following information:

- a) "The installation may only be operated by trained board personnel!";
- b) "Before switching on: At first plug in on-board, then on-shore!";
- c) "After switching off: At first unplug on-shore, then on-board!";
- d) "Connect each on-board network with only one shore connection unit!";
- e) "Only use shore connection cables which are marked with "EN 15869-3!";
- f) "400 V, 50 Hz";
- g) "Maximum permissible rated current ... A and rated load ... kVA";
- h) "The socket-outlet is protected by a Residual current circuit-breaker (RCCB) 30 mA or 500 mA";