IEC 61892-5

Edition 3.0 2014-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Mobile and fixed offshore units – Electrical installations – Part 5: Mobile units

Unités mobiles et fixes en mer – Installations électriques – Partie 5: Unités mobiles

IEC 61892-5:2014-11(en-fr)

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FOREWORD

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International Standard IEC 61892-5 has been prepared by IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units.

This third edition cancels and replaces the second edition published in 2010. This edition constitutes a technical revision.

This third edition includes the following significant technical change with respect to the previous edition:

The requirement to protection against flooding has been rewritten.

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

FDIS	Report on voting
18/1424/FDIS	18/1439/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.

The requirements specified in this International Standard are based on the Code for the Construction and Equipment of Mobile Offshore Drilling Units (1989 MODU CODE) published by the International Maritime Organization (IMO), and might include additional provisions.

A list of all the parts in the IEC 61892 series, published under the general title *Mobile and fixed offshore units – Electrical installations*, 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- withdrawn,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

IEC 61892 forms a series of International Standards intended to ensure safety in the design, selection, installation, maintenance and use of electrical equipment for the generation, storage, distribution and utilization of electrical energy for all purposes in offshore units used for exploration or exploitation of petroleum resources.

This part of IEC 61892 also incorporates and co-ordinates, as far as possible, existing rules and forms a code of interpretation, where applicable, of the requirements laid down by the International Maritime Organization, and constitutes a guide for future regulations which may be prepared and a statement of practice for offshore unit owners, constructors and appropriate organizations. This standard is based on equipment and practices which are in current use, but it is not intended in any way to impede development of new or improved techniques.

The ultimate aim has been to produce a set of International Standards exclusively for the offshore petroleum industry.

MOBILE AND FIXED OFFSHORE UNITS – ELECTRICAL INSTALLATIONS –

Part 5: Mobile units

1 Scope

This part of IEC 61892 specifies the characteristics for electrical installations in mobile units, for use during transfer from one location to another and for use during the exploration and exploitation of petroleum resources.

It applies to all installations, whether permanent, temporary, transportable or hand-held, to AC installations up to and including 35 000 V and DC installations up to and including 1 500 V. (AC and DC voltages are nominal values).

NOTE Attention is drawn to further requirements concerning electrical installations on such mobile offshore units contained in the MODU CODE of the International Maritime Organization (IMO).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60034-1, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60076 (all parts), *Power transformers*

IEC 60092-501:2013, *Electrical installations in ships – Part 501: Special features – Electric propulsion plant*

IEC 60092-504, *Electrical installations in ships – Part 504: Special features – Control and instrumentation*

IEC 60332-1-2, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60332-3-22, *Tests on electric cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A*

IEC 61000-6-2:2005, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61378-1, *Converter transformers – Part 1: Transformers for industrial applications*

IEC 61892-1, *Mobile and fixed offshore units – Electrical installations – Part 1: General requirements and conditions*

IEC 61892-2, *Mobile and fixed offshore units – Electrical installations – Part 2: System design*

IEC 61892-3, *Mobile and fixed offshore units – Electrical installations – Part 3: Equipment*

IEC 61892-6, *Mobile and fixed offshore units – Electrical installations – Part 6: Installation*

International Convention for the Safety of Life at Sea (SOLAS):1974, Consolidated edition 2009

IALA, *International Association of Marine Aids to Navigation and Lighthouse Authorities, Recommendation O-1239 On The Marking of Man-Made Offshore Structures, 2008*

IMO *Guidelines for vessels with dynamic positioning systems – see IMO/MSC/Circ. 645, Annex, International Maritime Organization*

IMO 904E, *Convention on the International Regulations for Preventing Collisions at Sea, International Maritime Organization (COLREG)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61892-1, IEC 61892-2, IEC 61892-3, IEC 61892-6, as well as the following apply.

3.1
auxiliary steering gear
equipment, other than any part of the main steering gear, necessary to steer the unit in the event of failure of the main steering gear but not including the tiller, quadrant or components serving the same purpose

3.2
dynamic positioning system
DP system
equipment necessary to provide means of controlling the position and heading of a mobile unit within predetermined limits by means of resultant vectored thrust

Note 1 to entry: This note applies to the French language only.

3.3
electric steering gear
power operated steering gear where an electric motor applies torque to the rudder stock through mechanical means only

3.4
electrohydraulic steering gear
power operated steering gear where a hydraulic pump, driven by an electric motor, applies torque to the rudder stock through hydraulic and mechanical means

3.5
main steering gear
machinery, rudder actuators, steering gear power units and ancillary equipment and the means of applying torque to the rudder stock (for example tiller or quadrant) necessary for effecting movement of the rudder for the purpose of steering the unit under normal service conditions

3.6
propulsion machine
rotating machine normally intended to provide propulsive power

3.7
redundancy
in an item, existence of more than one means for performing a required function

[SOURCE IEC 60050-191:1990, 191-15-01]

3.8
semiconductor converter
electronic power converter with semiconductor valve devices

Note 1 to entry: Similar terms are used for converters in general or for specific kinds of converters and for converters with other or specific electronic valve devices, e.g. thyristor converter, transistor inverter.

[SOURCE IEC 60050-551:1998, 551-12-42]

3.9
steering gear control system
equipment by which orders are transmitted from the navigating bridge to the steering gear power units

Note 1 to entry: Steering gear control systems comprise transmitters, receivers, hydraulic control pumps and their associated motors, motor controllers, piping and cables, etc.

3.10
steering gear power unit
electric motor and its associated electrical and/or hydraulic equipment used to operate the steering gear

4 General requirements

4.1 Protection against flooding

In every mobile unit in which electric power is used for the services necessary for the safety of the unit, the generators, switchgear, motors and associated controlgear for such services, with the exception of machinery in the platform of semi-submersibles, shall be so situated or arranged that they continue to operate in the event of partial flooding of the unit, within inclination limits referred in Clause 5.

The essential services for safety of personnel and unit including generators, switchgear, motors and associated controlgear for such services should be located above the worst damage waterline and be readily accessible.

4.2 Rotating machines

Rotating machines shall be installed to minimise the effects of motion. The design of bearings of all machines and the arrangement for their lubrication shall be adequate to withstand the motions encountered in heavy weather and operation for prolonged periods at the list and trim specified in Clause 5 without the spillage of oil.

4.3 Conductors, equipment and apparatus

Conductors, equipment and apparatus shall be placed at such a distance from each magnetic compass or shall be so disposed that the interfering external magnetic field is negligible; that is, the total singular deviation shall not exceed 30 min when any combination of circuits is switched on and off.

4.4 Main switchboards

The main switchboard shall be subdivided into at least two parts. The subdivision may be effected by removable links, circuit-breakers or other suitable means so that the main generators and any supplies to duplicated services which are directly connected to the busbars are, as far as is practicable, equally divided between the sections.