

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**





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Part 5: Mobile units**

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MOBILE AND FIXED OFFSHORE UNITS –
ELECTRICAL INSTALLATIONS –**
Part 5: Mobile units**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.

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

This fourth edition cancels and replaces the third edition published in 2014. This edition constitutes a technical revision.

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

- a) the technical requirements as to electric propulsion have been replaced with a reference to IEC 60092-501:2013;

- b) the requirement for handrails on main and emergency switchboards has been added;
- c) requirements as to control systems and indicators for watertight doors and hatch covers have been made more specific;
- d) requirements concerning the holding capacity for jacking systems have been rewritten;
- e) requirements as to thruster-assisted mooring system have been rewritten;
- f) the annex regarding enhanced system verification (HIL test) for dynamic positioned mobile units has been relocated to IEC 61892-2:2019.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
18/1653/FDIS	18/1665/RVD

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

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

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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

INTRODUCTION

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

This part of IEC 61892 incorporates and coordinates, as far as possible, existing rules and forms a code of interpretation, where applicable, of the requirements of the International Maritime Organization (IMO), and constitutes a guide for future regulations which may be prepared and a statement of practice for offshore unit owners, designers, installers and appropriate organizations.

This document is based on solutions and methods which are in current use, but it is not intended to impede development of new or improved techniques.

In this revision, voltage limitations have been removed. However, voltage limitations may be given in the referenced equipment standards. The removal of voltage limitations is considered necessary due to the interconnection of, and supply from shore to offshore units. In such cases transmission voltages up to 132 kV AC and 150 kV DC are used and higher voltages are being planned.

The IEC 61892 series aims to constitute a set of International Standards for the offshore petroleum industry, but it is not intended to prevent their use beyond petroleum installations.

MOBILE AND FIXED OFFSHORE UNITS – ELECTRICAL INSTALLATIONS –

Part 5: Mobile units

1 Scope

This part of IEC 61892 specifies additional characteristics for electrical installations in mobile units.

It applies to installations that depend on buoyancy, such as column-stabilized units (semi-submersible units), ship- or barge-type units as well as self-elevating units. It specifies additional characteristics for such units, used during transfer from one location to another and for drilling, production, accommodation, processing, storage and offloading purposes.

It applies to all installations, whether permanent, temporary, transportable or hand-held, to AC installations and DC installations without any limitation on voltage level. Referenced equipment standards may give voltage level limitations.

This document specifies requirements such as those concerning

- environmental conditions,
- limits of inclination for the unit where the equipment is required to operate,
- bilge pumps,
- navigation and obstruction lights,
- steering gear,
- ballast system,
- jacking systems, and
- anchoring systems.

For electric propulsion, reference is made to IEC 60092-501.

For dynamic positioning systems, reference is made to relevant IMO requirements.

This document does not apply to

- fixed equipment for medical purposes,
- electrical installations of tankers, and
- control of ignition sources other than those created by electrical equipment.

NOTE 1 For medical rooms, IEC 60364-7-710 provides specific requirements. Requirements for tankers are given in IEC 60092-502.

NOTE 2 Guidance on protection of non-electrical equipment can be found in ISO 80079-36, ISO 80079-37 and IMO 2009 MODU Code, 6.7.

NOTE 3 Attention is drawn to further requirements concerning electrical installations on such mobile offshore units contained in the IMO MODU Code.

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.

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

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

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

IEC 61892-2:2019, *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*

IALA, *Recommendation O-139 on The Marking of Man-Made Offshore Structures, 2013*

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

IMO, MSC Circular 645, *Guidelines for vessels with dynamic positioning systems, Annex*

IMO, *International Convention for the Safety of Life at Sea (SOLAS), consolidated edition 2014*

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, and the following 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

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 machinery**

rotating machine normally intended to provide propulsive power

3.7**redundancy**

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

[SOURCE IEC 60050-351:2013, 351-42-28, modified – The definition has been reformulated and the notes to entry have been deleted.]

3.8**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.

3.9**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 Environmental conditions****4.1.1 Ambient temperature**

Unless otherwise given in the project specification, the values given in Table 1 are applicable.