

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Mobile and fixed offshore units – Electrical installations –  
Part 2: System design**

**Unités mobiles et fixes en mer – Installations électriques –  
Partie 2: Conception du système**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MOBILE AND FIXED OFFSHORE UNITS –  
ELECTRICAL INSTALLATIONS –****Part 2: System design**

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International Standard IEC 61892-2 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 2012. This edition constitutes a technical revision.

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

- a) the requirement for sources of electrical power has been rewritten. Requirements both for manned and unmanned units are given. Requirements for essential services of electrical power have been added;
- b) the requirement in relation to dead start has been added;
- c) the requirement for emergency stop for motor-driven fuel-oil transfer and fuel-oil pressure pumps has been added;

- d) general requirements regarding cables and wiring systems have been added;
- e) the description of unit interfaces to electrical transmission systems has been included;
- f) requirements in relation to energy control, monitoring and alarm system have been rewritten;
- g) new clauses regarding swivel/turret and unmanned facilities have been added;
- h) informative annexes regarding the following have been added:
  - essential source of electrical power;
  - emergency source of electrical power;
  - applicable examples of HVDC VSC technologies;
  - swivel/turret;
  - power sources for unmanned units, with separate or combined main and emergency switchboard;
  - alternative power sources of electrical power – general requirements;
  - illumination level;
  - enhanced software simulation;
  - architecture for energy control, monitoring and alarm system.

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

FDIS	Report on voting
18/1650/FDIS	18/1661/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 parts of the IEC 61892 series can be found, under the general title *Mobile and fixed offshore units – Electrical installations*, on the IEC website.

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## 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 the 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 2: System design

### 1 Scope

This part of IEC 61892 is applicable to system design of electrical installations and equipment in mobile and fixed offshore units including pipeline, pumping or "pigging" stations, compressor stations and single buoy moorings, used in the offshore petroleum industry 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 voltage level limitation. Referenced equipment standards may give voltage level limitations.

This document specifies requirements such as those concerning

- sources of electrical power for manned and unmanned units,
- system earthing, both for low-voltage and high-voltage installations,
- interface for electric transmission systems with power supplied from shore, between interconnected offshore units, and with power supplied by offshore units to subsea installations,
- distribution systems,
- cables and wiring systems,
- system studies and calculations,
- protection against electrical faults,
- lighting,
- energy control, monitoring and alarm systems, and
- turret/swivel.

This document gives information and guidance on topics such as

- applicable examples of HVDC VSC technology, and
- guidelines for illumination level.

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.