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colour inside

Mobile and fixed offshore units – Electrical installations – Part 1: General requirements and conditions

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 8
4 General requirements and conditions 14
4.1 General 14
4.2 Acceptance of substitutes or alternatives 14
4.3 Additions and alterations 14
4.4 Environmental conditions 14
4.4.1 General 14
~~Design parameters~~ .....
4.4.2 Ambient temperature 16
~~Materials~~ .....
4.5 Power supply system characteristics 16
4.5.1 General 16
4.5.2 AC distribution systems 17
4.5.3 DC distribution systems 20
~~Manual disconnection~~ .....
~~Electrical apparatus for explosive gas atmospheres~~ .....
4.6 Clearance and creepage distances 21
4.7 Insulation 22
~~Maintenance and inspection~~ .....
~~Cable entries~~ .....
4.8 Precautions against vibration and mechanical shock 22
4.9 Location of electrical equipment in units 22
4.10 Mechanical protection 23
4.11 Protection ~~from~~ against heat, water, steam and oil 24
4.12 Protection against electrical shock 24
4.13 Enclosures 24
4.14 Ignition source control 24
4.14.1 General 24
4.14.2 Emergency shutdown (ESD) – General 25
4.14.3 Emergency conditions due to drilling operations – Mobile drilling units 26
4.14.4 Manual electrical shutdown 26
4.15 Degree of protection of equipment by enclosures 26
4.16 Environmental impact 29
Annex A (informative) Degree of protection 30
Annex B (informative) Cold climate precautions 32
B.1 General 32
B.2 Emergency power source 32
B.3 Equipment – General 32
B.4 Cables and cable installations 33
B.5 Electrical trace heating systems 33
B.6 Lighting systems 33
B.6.1 General 33

B.6.2 Emergency lights 33
B.7 Electrical rotating machines 33
B.8 Explosion protected equipment 33
Annex C (informative) Specification of surface treatment and protective painting system 34
C.1 Objectives 34
C.2 General and specification 34
C.2.1 General 34
C.2.2 Atmospheric corrosivity categories for protective painting systems 34
C.2.3 Durability performance of a protective painting system 35
~~Annex D (informative) DC distribution systems ....~~
~~D.1 DC distribution systems ....~~
Bibliography 38

~~Figure D.1 – Typical configuration of DC distribution system ....~~

~~Table – Operational design parameters – Ambient temperature ....~~
~~Table – Design parameters – Relative humidity ....~~
Table 1 – Voltage characteristics 17
Table 2 – Frequency characteristics 19
Table 3 – Tolerances for DC system 20
Table 4 – Fast transients 21
Table 5 – Minimum requirements for the degree of protection for mobile and fixed offshore units 27
Table A.1 – Degrees of protection against foreign objects indicated by the first characteristic numeral 30
Table A.2 – Degrees of protection against water indicated by the second characteristic numeral 31
Table C.1 – Description of typical atmospheric environments related to the estimation of corrosivity categories 35

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MOBILE AND FIXED OFFSHORE UNITS – ELECTRICAL INSTALLATIONS –

Part 1: General requirements and conditions

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 61892-1 has been prepared by IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units.

This fourth edition cancels and replaces the third edition published in 2015. This edition constitutes a technical revision.

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

a) voltage limitations have been removed;
b) definitions for fixed offshore units and mobile offshore units have been included;
c) tables for ambient air temperature and relative humidity have been removed, as this information will normally be given in owner's/operator's documentation for specific projects;
d) the requirement as to ignition source control has been moved from IEC 61892-7 to this document;
e) tables for voltage characteristics have been updated;
f) requirements for a minimum degree of protection for equipment have been moved from IEC 61892-2 to this document.

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

FDIS	Report on voting
18/1649/FDIS	18/1664/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, published under the general title *Mobile and fixed offshore units – Electrical installations*, can be found on the IEC website.

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IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

INTRODUCTION

IEC 61892 forms a series of International Standards ~~is intended to enable~~ 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, ~~constructors~~ designers, installers and appropriate organizations.

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

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

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 1: General requirements and conditions

1 Scope

This part of IEC 61892 ~~contains provisions for~~ is applicable to electrical installations and equipment in mobile and fixed offshore units, including pipeline, pumping or "pigging" stations, compressor stations and ~~exposed location~~ 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 ~~up to and including 35 000 V~~ and DC installations ~~up to and including 1 500 V (AC and DC voltages are nominal values)~~ without any voltage level limitation. Referenced equipment standards may give voltage level limitations.

This document specifies requirements such as those concerning

– environmental conditions,
– power supply characteristics,
– location of electrical equipment in units,
– protection against external influences,
– protection against electrical shock, and
– ignition source control.

This document gives information and guidance on topics such as

– cold climate protection, and
– surface treatment and protective painting system.

This document does not apply ~~either~~ to

– fixed equipment for medical purposes ~~or to the~~,
– 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 ~~more information~~ 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.

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 (all parts), *Rotating electrical machines*~~

~~IEC 60034-1:2010, *Rotating electrical machines – Part 1: Rating and performance*~~

~~IEC 60079 (all parts), *Explosive atmospheres*~~

IEC 60364-4-41, *Low-voltage installations – Part 4-41: Protection for safety – Protection against electric shock*

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

IEC 61000-2-4:2002, *Electromagnetic compatibility (EMC) – Part 2-4: Environment – Compatibility levels in industrial plants for low-frequency conducted disturbances*

~~IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*~~

IEC 61892-2:~~2012~~ 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 61892-5, *Mobile and fixed offshore units – Electrical installations – Part 5: Mobile units*

IEC 61892-6:2019, *Mobile and fixed offshore units – Electrical installations – Part 6: Installation*

IEC 61892-7:2019, *Mobile and fixed offshore units – Electrical installations – Part 7: Hazardous areas*

ISO 8468, *Ships and marine technology – Ship's bridge layout and associated equipment – Requirements and guidelines*

ISO 11064 (all parts), *Ergonomic design of control centres*

IMO, *International Convention for the Safety of Life at Sea (SOLAS)~~:1974~~, Consolidated edition~~ 2009~~ 2014*

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Edition 4.0 2019-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Mobile and fixed offshore units – Electrical installations – Part 1: General requirements and conditions

Unités mobiles et fixes en mer – Installations électriques – Partie 1: Exigences générales et conditions



IEC 61892-1:2019-04(en-fr)

CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 8
4 General requirements and conditions 13
4.1 General 13
4.2 Acceptance of substitutes or alternatives 14
4.3 Additions and alterations 14
4.4 Environmental conditions 14
4.4.1 General 14
4.4.2 Ambient temperature 14
4.5 Power supply system characteristics 14
4.5.1 General 14
4.5.2 AC distribution systems 15
4.5.3 DC distribution systems 18
4.6 Clearance and creepage distances 19
4.7 Insulation 19
4.8 Precautions against vibration and mechanical shock 19
4.9 Location of electrical equipment in units 19
4.10 Mechanical protection 20
4.11 Protection against heat, water, steam and oil 20
4.12 Protection against electrical shock 21
4.13 Enclosures 21
4.14 Ignition source control 21
4.14.1 General 21
4.14.2 Emergency shutdown (ESD) – General 22
4.14.3 Emergency conditions due to drilling operations – Mobile drilling units 23
4.14.4 Manual electrical shutdown 23
4.15 Degree of protection of equipment by enclosures 23
4.16 Environmental impact 26
Annex A (informative) Degree of protection 27
Annex B (informative) Cold climate precautions 29
B.1 General 29
B.2 Emergency power source 29
B.3 Equipment – General 29
B.4 Cables and cable installations 29
B.5 Electrical trace heating systems 29
B.6 Lighting systems 30
B.6.1 General 30
B.6.2 Emergency lights 30
B.7 Electrical rotating machines 30
B.8 Explosion protected equipment 30
Annex C (informative) Specification of surface treatment and protective painting system 31
C.1 Objectives 31

C.2 General and specification 31
C.2.1 General 31
C.2.2 Atmospheric corrosivity categories for protective painting systems 31
C.2.3 Durability performance of a protective painting system 32
Bibliography 34

Table 1 – Voltage characteristics 16
Table 2 – Frequency characteristics 17
Table 3 – Tolerances for DC system 18
Table 4 – Fast transients 19
Table 5 – Minimum requirements for the degree of protection for mobile and fixed offshore units 24
Table A.1 – Degrees of protection against foreign objects indicated by the first characteristic numeral 27
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IEC 61892-5, *Mobile and fixed offshore units – Electrical installations – Part 5: Mobile units*

IEC 61892-6:2019, *Mobile and fixed offshore units – Electrical installations – Part 6: Installation*

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SOMMAIRE

AVANT-PROPOS 38
INTRODUCTION 40
1 Domaine d'application 41
2 Références normatives 41
3 Termes et définitions 42
4 Exigences générales et conditions 47
4.1 Généralités 47
4.2 Acceptation des méthodes de substitution ou alternatives 48
4.3 Ajouts et modifications 48
4.4 Conditions d'environnement 48
4.4.1 Généralités 48
4.4.2 Température ambiante 48
4.5 Caractéristiques du système d'alimentation 49
4.5.1 Généralités 49
4.5.2 Systèmes de distribution en courant alternatif 49
4.5.3 Systèmes de distribution en courant continu 52
4.6 Distances d'isolement et lignes de fuite 53
4.7 Isolation 53
4.8 Précautions contre les vibrations et les chocs mécaniques 53
4.9 Localisation des équipements électriques dans les unités 54
4.10 Protection mécanique 55
4.11 Protection contre la chaleur, l'eau, la vapeur et l'huile 55
4.12 Protection contre les chocs électriques 55
4.13 Enveloppes 55
4.14 Gestion des sources d'inflammation 56
4.14.1 Généralités 56
4.14.2 Arrêt d'urgence (ESD) – Généralités 57
4.14.3 Conditions d'urgence liées aux opérations de forage – Unités mobiles de forage 57
4.14.4 Mise hors tension électrique manuelle 57
4.15 Degré de protection de l'équipement et des enveloppes 58
4.16 Impact environnemental 62
Annexe A (informative) Degré de protection 63
Annexe B (informative) Précautions contre le climat froid 65
B.1 Généralités 65
B.2 Sources électriques de secours 65
B.3 Equipement – Généralités 65
B.4 Câbles et installations de câbles 65
B.5 Systèmes de traçage électrique 65
B.6 Systèmes d'éclairage 66
B.6.1 Généralités 66
B.6.2 Eclairage de secours 66
B.7 Machines électriques tournantes 66
B.8 Matériels protégés contre l'explosion 66
Annexe C (informative) Spécification du traitement de surface et du système de peinture protectrice 67

C.1 Objectifs 67
C.2 Généralités et spécification 67
C.2.1 Généralités 67
C.2.2 Catégories de corrosivité atmosphérique pour les systèmes de peinture protectrice 67
C.2.3 Aptitude de durabilité d'un système de peinture protectrice 68
Bibliographie 70

Tableau 1 – Caractéristiques de tension 50
Tableau 2 – Caractéristiques de fréquence 51
Tableau 3 – Tolérances pour systèmes à courant continu 52
Tableau 4 – Transitoires rapides 53
Tableau 5 – Exigences minimales pour le degré de protection des unités mobiles et fixes en mer 59
Tableau A.1 – Degrés de protection contre l'intrusion d'objets étrangers indiqués par le premier chiffre caractéristique 63
Tableau A.2 – Degrés de protection contre la pénétration d'eau indiqués par le deuxième chiffre caractéristique 64
Tableau C.1 – Description des environnements atmosphériques types relatifs à l'estimation des catégories de corrosivité 68

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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UNITÉS MOBILES ET FIXES EN MER – INSTALLATIONS ÉLECTRIQUES –

Partie 1: Exigences générales et conditions

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8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
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La Norme internationale IEC 61892-1 a été établie par le comité d'études 18 de l'IEC: Installations électriques des navires et des unités mobiles et fixes en mer.

Cette quatrième édition annule et remplace la troisième édition parue en 2015. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) les limites de tension ont été supprimées;
b) les définitions pour les unités fixes et mobiles en mer ont été incluses;

c) les tableaux pour la température ambiante de l'air et l'humidité relative ont été supprimés, étant donné que ces informations seront normalement indiquées dans les documents du propriétaire/de l'opérateur pour des projets spécifiques;

d) l'exigence relative à la gestion des sources d'incendie a été déplacée de l'IEC 61892-7 au présent document;

e) les tableaux pour les caractéristiques de tension ont été mis à jour;

f) les exigences pour un degré minimal de protection des équipements ont été déplacées de l'IEC 61892-2 au présent document.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
18/1649/FDIS	18/1664/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 61892, publiées sous le titre général *Unités mobiles et fixes en mer – Installations électriques*, peut être consultée sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "http://webstore.iec.ch" dans les données relatives au document recherché. A cette date, le document sera

- reconduit,
- supprimé,
- remplacé par une édition révisée, ou
- amendé.

INTRODUCTION

L'IEC 61892 définit une série de Normes internationales destinées à garantir la sécurité de la conception, du choix, de l'installation, de la maintenance et de l'utilisation des matériels électriques destinés à la génération, à la transmission, au stockage, à la distribution et à l'utilisation d'énergie électrique, quelle qu'en soit la finalité, dans les unités en mer utilisées pour l'exploration ou l'exploitation de ressources pétrolières.

La présente partie de l'IEC 61892 comprend et coordonne, dans toute la mesure du possible, les règles existantes et constitue un code d'interprétation, le cas échéant, des exigences de l'Organisation Maritime Internationale (OMI), un guide pour les règlements qui peuvent être préparés à l'avenir et un guide pratique pour les propriétaires, les concepteurs et les installateurs d'unités en mer, ainsi que pour les organismes concernés.

Le présent document s'appuie sur des solutions et méthodes qui sont actuellement en vigueur, mais elle n'a pas pour objet de freiner le développement de nouvelles techniques ou l'amélioration des techniques existantes.

Dans cette révision, les limites de tension ont été supprimées. Elles peuvent toutefois figurer dans les normes d'équipements visées. La suppression des limites de tension a été jugée nécessaire en raison de l'interconnexion des unités en mer et de l'alimentation de ces dernières depuis le quai. Dans de tels cas, des tensions de transmission jusqu'à 132 kV en courant alternatif et 150 kV en courant continu sont utilisées et des tensions plus élevées sont prévues.

La série IEC 61892 a pour objectif de constituer un ensemble de Normes internationales destinées à l'industrie pétrolière en mer, mais elle n'a pas pour objet d'empêcher leur utilisation pour des installations autres que les installations pétrolières.

UNITÉS MOBILES ET FIXES EN MER – INSTALLATIONS ÉLECTRIQUES –

Partie 1: Exigences générales et conditions

1 Domaine d'application

La présente partie de l'IEC 61892 s'applique aux installations et équipements électriques des unités mobiles et fixes en mer, y compris les canalisations, les stations de pompage ou de raclage, les stations de compression et les systèmes d'amarrage à point unique, qui sont utilisés dans l'industrie pétrolière en mer (offshore) pour le forage, la production, les lieux d'habitation, le traitement, le stockage et le déchargement.

Elle s'applique à toutes les installations, qu'elles soient permanentes ou provisoires, transportables ou portatives, aux installations en courant alternatif et aux installations en courant continu sans aucune limitation du niveau de tension. Les normes des équipements référencés peuvent fournir des limites de niveau de tension.

Le présent document spécifie des exigences pour

– les conditions d'environnement,
– les caractéristiques du système d'alimentation,
– la localisation des équipements électriques dans les unités,
– la protection contre les influences externes,
– la protection contre les chocs électriques, et
– la gestion des sources d'incendie.

Le présent document fournit des informations et des recommandations à propos de sujets tels que

– la protection contre le climat froid, et
– le traitement de surface et le système de peinture protectrice.

Le présent document ne s'applique pas

– aux équipements fixes destinés aux applications médicales,
– aux installations électriques des navires-citernes, et
– au contrôle des sources d'incendie autres que celles générées par l'équipement électrique.

NOTE 1 Pour les locaux médicaux, l'IEC 60364-7-710 fournit des exigences spécifiques. Les exigences relatives aux navires-citernes sont données dans l'IEC 60092-502.

NOTE 2 Les recommandations relatives à la protection des équipements non électriques peuvent être consultées dans l'ISO 80079-36, l'ISO 80079-37 et le Code MODU de l'OMI (de 2009), 6.7.

2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60364-4-41, *Installations électriques à basse tension – Partie 4-41: Protection pour assurer la sécurité – Protection contre les chocs électriques*

IEC 61000-2-4:2002, *Compatibilité électromagnétique (CEM) – Partie 2-4: Environnement – Niveaux de compatibilité dans les installations industrielles pour les perturbations conduites à basse fréquence*

IEC 61892-2:2019, *Unités mobiles et fixes en mer – Installations électriques – Partie 2: conception du système*

IEC 61892-3, *Unités mobiles et fixes en mer – Installations électriques – Partie 3: Equipements*

IEC 61892-5, *Unités mobiles et fixes en mer – Installations électriques – Partie 5: Unités mobiles*

IEC 61892-6:2019, *Unités mobiles et fixes en mer – Installations électriques – Partie 6: Installation*

IEC 61892-7:2019, *Unités mobiles et fixes en mer – Installations électriques – Partie 7: Zones dangereuses*

ISO 8468, *Navires et technologie maritime – Aménagement de la passerelle d'un navire et disposition de ses équipements connexes – Exigences et directives*

ISO 11064 (toutes les parties), *Conception ergonomique des centres de commande*

OMI, *International Convention for the Safety of Life at Sea (SOLAS),* édition consolidée de 2014 (disponible en anglais seulement)

OMI, *Code MODU de 2009, Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009*, édition de 2010 (disponible en anglais seulement)