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Mobile and fixed offshore units – Electrical installations – Part 3: Equipment

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MOBILE AND FIXED OFFSHORE UNITS – ELECTRICAL INSTALLATIONS –

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FOREWORD

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International Standard IEC 61892-3 has been prepared by IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units.

This second edition cancels and replaces the first edition published in 1999. This edition constitutes a technical revision.

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

a) the requirement to d.c. generators has been deleted;
b) detailed requirements to testing of machines have been deleted. Reference is made to the IEC 60034 series;
c) requirement to switchgear and controlgear has been rewritten, based on updated IEC 60439 and the IEC 62271 series;
d) requirement to Control and instrumentation has been rewritten, based on updated IEC 60092-504.

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

FDIS	Report on voting
18/1064/FDIS	18/1070/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.

A list of all parts of the IEC 61892 series, 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 maintenance result 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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

IEC 61892 forms a series of International Standards intended to enable safety in the design, selection, installation, maintenance and use of electrical equipment for the generation, storage, distribution and utilisation of electrical energy for all purposes in offshore units which are being used for the purpose of 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 of the International Maritime Organisation, a guide for future regulations which may be prepared and a statement of practice for offshore unit owners, constructors and appropriate organisations.

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 3: Equipment

1 Scope

This part of IEC 61892 contains provisions for electrical 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, processing and for storage purposes.

This standard applies to equipment in all installations, whether permanent, temporary, transportable or hand-held, to a.c. installations up to and including 35 000 V and d.c. installations up to and including 750 V (a.c. and d.c. voltages are nominal values).

This standard gives requirements to equipment, which is additional to the requirement given in the product standard for the relevant equipment.

This standard does not apply to the electrical installations in rooms used for medical purposes or in tankers.

2 Normative references

The following referenced documents are indispensable for the application 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.

CISPR 16 (all parts), *Specification for radio disturbance and immunity measuring apparatus and methods*

IEC 60034 (all parts), *Rotating electrical machines*

IEC 60044-1:1996*, Instrument transformers – Part 1: Current transformers*

IEC 60044-2*:*1997, *Instrument transformers – Part 2: Inductive voltage transformers*

IEC 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068 (all parts) *Environmental testing*

IEC 60076 (all parts), *Power transformers*

IEC 60076-1:2000, *Power transformers – Part 1: General*

IEC 60076-5:2006, *Power transformers – Part 5: Ability to withstand short circuit*

IEC 60076-11:2004, *Power transformers – Part 11: Dry-type transformers*

IEC 60092 (all parts), *Electrical installations in ships*

IEC 60146-1-1:1991, *Semiconductor converters – General requirements and line commutated convertors – Part 1-1: Specifications of basic requirements*

IEC 60146-1-2:1991, *Semiconductor converters – General requirements and line commutated convertors – Part 1-2: Application guide*

IEC 60146-1-3:1991, *Semiconductor converters – General requirements and line commutated convertors – Part 1-3: Transformers and reactors*

IEC 60146-2:1999, *Semiconductor converters – Part 2: Self-commutated semicondutor converters including direct d.c. converters*

IEC 60282 (all parts), *High-voltage fuses*

IEC 60309 (all parts), *Plugs, socket-outlets and couplers for industrial purposes*

IEC 60331 (all parts), *Tests for electric cables under fire conditions – Circuit integrity*

IEC 60332-1-2:2004, *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 premixed flame*

IEC 60439 (all parts), *Low-voltage switchgear and controlgear assemblies*

IEC 60439-1:2004, *Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies*

IEC 60529:2001, *Degrees of protection provided by enclosures (IP Code)*

IEC 60533:1999, *Electromagnetic compatibility – Electrical and electronic installations in ships*

IEC 60865-1:1993, *Short-circuit currents – Calculation of effects – Part 1: Definitions and calculation methods*

IEC 60884 (all parts), *Plugs and socket-outlets for household and similar purposes*

IEC 60896-11:2002, *Stationary lead-acid batteries – Part 11: Vented types – General requirements and methods of tests*

IEC 60896-21:2004, *Stationary lead-acid batteries – Part 21: Valve regulated types – Methods of test*

IEC 60896-22:2004, *Stationary lead-acid batteries – Part 22: Valve regulated types – Requirements*

IEC 60906 (all parts), *IEC system of plugs and socket-outlets for household and similar purposes*

IEC 60945:2002, *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IEC 60947-3:1999, *Low-voltage switchgear and controlgear – Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*[1]

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:2004, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2005, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2003, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*[2]

IEC 61000-4-11:2004, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunuty tests*

IEC 61097 (all parts), *Global maritime distress and safety system (GMDSS)*

IEC 61131 (all parts), *Programmable controllers*

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1 A consolidated edition (1.2), published in 2001, exists including IEC 61000-4-2 (1995), its Amendment 1 (1998) and its Amendment 2 (2000).

2 A consolidated edition (2.2), published in 2006, exists including IEC 61000-4-2 (2003), its Amendment 1 (2004) and its Amendment 2 (2005).

IEC 61800 (all parts), *Adjustable speed electrical power drive systems*

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 61892-4, *Mobile and fixed offshore units – Electrical installations – Part 4: Cables*

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

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

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

IEC 62040 (all parts), *Uninterruptible power systems (UPS)*

IEC 62271 (all parts), *High-voltage switchgear and controlgear*

IEC 62271-100:2001, *High-voltage switchgear and controlgear – Part 100: High-voltage alternating-current circuit-breakers*

IEC 62271-102:2005, *High-voltage switchgear and controlgear – Part 102: Alternating-current disconnectors and earthing switches*

IEC 62271-200:2003, *High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

IEC 62271-201, *High-voltage switchgear and controlgear – Part 201: AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

ISO 6592:2000, *Information technology – Guidelines for the documentation of computer-based application systems*

IMO *Code of Safety for Diving Systems*