



DPC: 23 / 30446862 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Interested committees:

Title: BS EN IEC 61892-6 Mobile and fixed offshore units - Electrical installations

Part 6: Installation

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Responsible Committee Secretary: **Mr Michael Peace (IET) (BSI)**
Direct tel: **01438 765566**
E-mail: **michaelpeace@theiet.org**

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



18/1832/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER: IEC 61892-6 ED5	
DATE OF CIRCULATION: 2023-06-02	CLOSING DATE FOR COMMENTS: 2023-09-22
SUPERSEDES DOCUMENTS: 18/1745/RR	

IEC TC 18 : ELECTRICAL INSTALLATIONS OF SHIPS AND OF MOBILE AND FIXED OFFSHORE UNITS	
SECRETARIAT: Norway	SECRETARY: Mr Arild Røed
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 1,TC 2,TC 8,SC 8A,SC 8B,TC 17,SC 17A,SC 17C,SC 18A,TC 20,TC 21,SC 21A,TC 22,SC 22E,SC 22F,SC 22G,SC 22H,SC 23H,TC 31,SC 31J,TC 34,TC 64,TC 65,SC 65A,SC 65B,SC 65C,SC 65E,TC 77,TC 80,TC 86,TC 88,TC 94,TC 99,TC 120,TC 121,SC 121A,SC 121B	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.
FUNCTIONS CONCERNED: ☒ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY	

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TITLE:

Mobile and fixed offshore units - Electrical installations - Part 6: Installation

NOTE FROM TC/SC OFFICERS:

MT 18 has revised the seven parts of the IEC 61892 series. There are several technical changes made in all seven parts. However, we would like to highlight that IEC 61892-7 has been restructured with separate clauses that deals with IEC 61892-10-1 and IEC

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MOBILE AND FIXED OFFSHORE UNITS –
ELECTRICAL INSTALLATIONS –

Part 6: Installation

FOREWORD

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- IEC 61892-6 has been prepared by IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2019-04. This edition constitutes a technical revision.

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

This list will be developed when preparing the CDV. See instead the red line version provided as a supplementary working document.

a) ...;

b)

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

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is **English**.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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.

201

INTRODUCTION

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

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

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

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

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

220

221

MOBILE AND FIXED OFFSHORE UNITS – ELECTRICAL INSTALLATIONS –

Part 6: Installation

1 Scope

This document provides specific requirements for the installation of electrical 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

- protection during equipment storage and in the installation period,
- installation of generators and motors,
- installation of transformers,
- installation of switchgear and controlgear assemblies,
- installation of semiconductor converters and UPS,
- installation of secondary cells and batteries,
- installation of luminaires,
- installation of heating and cooking appliances,
- installation of trace and surface heating,
- installation of cables and wiring, both low-voltage and high-voltage cables,
- requirements in relation to earthing and bonding,
- lightning protection;
- testing of completed installation, and
- documentation.

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.

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 60092-350:2014, *Electrical installations in ships – Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications*

IEC 60623, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Vented nickel-cadmium prismatic rechargeable single cells*

IEC 60825-2, *Safety of laser products – Part 2: Safety of optical fibre communication systems (OFCS)*

IEC 60825-12, *Safety of laser products – Part 12: Safety of free space optical communication systems used for transmission of information*

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

IEC 61892-1:2019, *Mobile and fixed offshore units – Electrical installations – Part 1: General requirements and conditions*

IEC 61892-3:2019, *Mobile and fixed offshore units – Electrical installations – Part 3: Equipment*

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

IEC 61914, *Cable cleats for electrical installations*

IEC 62305-3:2010, *Protection against lightning – Part 3: Physical damage to structures and life hazard*

IEC 62485-2:2010, *Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries*

IMO, 2009 MODU Code, *Code for the Construction and Equipment of Mobile Offshore Drilling Units*, 2009, 2010 edition

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61892-1 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

braid armour

covering formed from braided metal wires used to protect a cable from external mechanical effects

[SOURCE: IEC 60092-350:2014, 3.3, modified – The notes to entry have been deleted.]

3.2**armour**

covering consisting of metal tape(s) or wires, generally used to protect the cable from external mechanical effects

[SOURCE: IEC 60050-461:2008, 461-05-06]

3.3**electrostatic screen**

electrostatic shield (North America)

earthed metallic layer surrounding a cable which confines the electric field generated by the cable within the cable cores, pair(s), triple(s) or quad(s), and/or protects the core(s), pair(s), triple(s) or quad(s) from external influence

Note 1 to entry: Metallic sheaths, foils, braids, armours and earthed concentric conductors may also serve as an electrostatic screen, provided they are effectively earthed.

[SOURCE: IEC 60092-350:2014, 3.9, modified – In the note to entry, the word "grounded" has been deleted.]

3.4**insulation screen**

electrical screen of non-metallic semi-conducting layer in combination with a metallic layer

[SOURCE: IEC 60092-350:2014, 3.18, modified – The second preferred term "core screen" has been omitted.]

3.5**battery compartment**

compartment comprising dedicated rooms, dedicated cabinets and dedicated boxes for installation of batteries

3.6**battery crate**

container with frame walls for holding several cells or batteries

[SOURCE: IEC 60050-482:2004, 482-05-10]

3.7**battery tray**

container with a base and walls for holding several cells or batteries

[SOURCE: IEC 60050-482:2004, 482-02-35]

3.8**battery rack**

support, stand or grating with one or more levels or tiers for the installation of cells or mono-bloc containers in a stationary battery

[SOURCE: IEC 60050-482:2004, 482-05-24]

3.9**main earth (reference earth)**

part of the Earth considered as conductive, the electric potential of which is conventionally taken as zero, being outside the zone of influence of any earthing arrangement

Note 1 to entry: The concept "Earth" means the planet and all its physical matter.

341 Note 2 to entry: The general mass of the hull of the ship, or mobile or fixed platform.

342 Note 3 to entry: The main, continuous structure of modules which are welded or otherwise having a solid, permanent
343 connection to the main structure is considered as "main earth". For drilling modules and other parts which are not
344 welded to the main structure are to be provided with an adequate equipotential bonding.

345 [SOURCE: 195-01-01, modified: Synonymous term "main earth" added, NOTE 2 and 3 added]

346

347 **3.10**

348 **equipotential bonding**

349 provision of electric connections between conductive parts, intended to achieve equipotentiality

350 [SOURCE: IEC 60050-195:1998, 195-01-10]

351 **3.11**

352 **earthing conductor**

353 conductor forming a conductive path between a conductive part and earth

354 EXAMPLE A conductor connected between a main earthing terminal or busbar and an earth electrode.

355 [SOURCE: 195-02-03, modified: earth electrode replaced with main earth]

356 **3.12**

357 **equipotential bonding conductor**

358 conductor provided for protective-equipotential-bonding

359 [SOURCE: 195-02-10, modified: "protective" replaced with equipotential]

360 **3.13**

361 **protective earthing conductor**

362 **PE conductor**

363 conductor provided for protective earthing

364 EXAMPLE A conductor connected between a main earthing terminal or busbar and an earth electrode.

365 [SOURCE: 195-02-11]

366 **3.14**

367 **cable tray system**

368 **cable ladder system**

369 assembly of cable supports consisting of cable tray lengths or cable ladder lengths and other
370 system components

371 [SOURCE: IEC 61537:2006, 3.1]

372 **3.15**

373 **surface heating**

374 **trace heating**

375 utilization of electric trace heater cables, pads, panels and support components, externally
376 applied and used to raise or maintain the temperature of contents in piping, tanks and
377 associated equipment

378 [SOURCE: IEC 60050-426:2008, 426-20-39, modified – The preferred term "surface heating"
379 has been added.]

3.16**exposed-conductive-part**

conductive part which can readily be touched and which is not normally alive, but which may become alive under fault conditions

Note 1 to entry: Typical exposed-conductive-parts are walls of enclosures, operating handles, etc.

[SOURCE: IEC 60050-441:2000, 441-11-1, modified – Hyphens have been added to the term.]

3.17**extraneous-conductive-part**

conductive part not forming a part of the electrical installation and liable to introduce an electric potential, generally the electric potential of a local earth

[SOURCE: IEC 60050-195:1998, 195-06-11]

3.18**extra-low voltage****ELV**

voltage which does not exceed 50 V AC RMS or 120 V DC between conductors, or between any conductor and earth.

Note 1 to entry: Information about protection by extra-low voltage is given in IEC 60364-4-41.

3.19**PELV****PELV system**

electric system in which the voltage cannot exceed the value of extra-low voltage:

- under normal conditions and
- under single fault conditions, except earth faults in other electric circuits

Note 1 to entry: PELV is the abbreviation for protective extra-low voltage.

[SOURCE: IEC 60050-826:2004: 826-12-32, modified – The abbreviated term "PELV" has been added.]

3.20**SELV****SELV system**

electric system in which the voltage cannot exceed the value of extra-low voltage:

- under normal conditions and
- under single fault conditions, including earth faults in other electric circuits

Note 1 to entry: SELV is the abbreviation for safety extra-low voltage.

[SOURCE: IEC 60050-826:2004: 826-12-31, modified – The abbreviated term "SELV" has been added.]

3.21**sealed cell**

cell which remains closed and does not release either gas or liquid when operated within the limits specified by the manufacturer

Note 1 to entry: A sealed cell may be equipped with a safety device to prevent a dangerously high internal pressure and is designed to operate during its life in its original sealed state.

[SOURCE: IEC 60050-482:2004, 482-05-17]

3.22**support device**

system component designed to provide mechanical support and which may limit movement of a cable runway

[SOURCE: IEC 61537:2006, 3.7, modified – The note to entry has been omitted.]

3.23**system component**

part used within the system: cable tray length or cable ladder length, cable tray fitting or cable ladder fitting, support device, mounting device and system accessory

Note 1 to entry: System components may not necessarily be included together in a system. Different combinations of system components may be used.

[SOURCE: IEC 61537:2006, 3.2]

3.24**uninterruptible power system****UPS**

combination of convertors, switches and energy storage devices (such as batteries), constituting a power system for maintaining continuity of load power in case of input power failure

[SOURCE: IEC 62040-1:2017, 3.101, modified – The note to entry has been deleted.]

3.25**VRLA****valve regulated lead acid battery**

secondary battery in which cells are closed but have a valve which allows the escape of gas if the internal pressure exceeds a predetermined value

Note 1 to entry: The cell or battery cannot normally receive additions to the electrolyte.

Note 2 to entry: This note applies to the French language only.

[SOURCE: IEC 60050-482:2004, 482-05-15, modified – A second note to entry has been added.]

3.26**vented cell**

secondary cell having a cover provided with an opening through which products of electrolysis and evaporation are allowed to escape freely from the cell to the atmosphere

[SOURCE: IEC 60050-482:2004, 482-05-14]

3.26.1**distribution board**

assembly containing different types of switchgear and controlgear associated with one or more outgoing electric circuits fed from one or more incoming electric circuits, together with terminals for the neutral and protective conductors, if required

[SOURCE: IEC 826-16-08, modified – The words "if required" have been added.]

main earth (reference earth)**ground**

part of the Earth considered as conductive, the electric potential of which is conventionally taken as zero, being outside the zone of influence of any earthing arrangement