IEC 60092-501

Edition 4.0 2007-08

INTERNATIONAL STANDARD

Electrical installations in ships –
Part 501: Special features – Electric propulsion plant

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE V

ICS 47.020.060

ISBN 2-8318-9245-7

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 501: Special features – Electric propulsion plant

FOREWORD

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International Standard IEC 60092-501 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 1984. It constitutes a technical revision.

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

a) requirements regarding system responsibility, electromagnetic compatibility (EMC), harmonic distorsion and filtering, special requirements for ships with propulsion motor(s) and podded drives, and power management system (PMS);
b) overall technical review to update the standard according to general requirements and referenced equipment standards.

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

FDIS	Report on voting
18/1057/FDIS	18/1063/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 60092 series, under the general title *Electrical installations in ships*, 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- withdrawn,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 60092 forms a series of international standards for electrical installations in sea-going ships, incorporating good practice and coordinating, as far as possible, existing rules. These standards form a code of practical interpretation and amplification of the requirements of the International Convention on Safety of Life at Sea, a guide for future regulations which may be prepared and a statement of practice for use by shipowners, shipbuilders and appropriate organizations.

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 501: Special features – Electric propulsion plant

1 Scope

This part of IEC 60092 specifies requirements for all electric propulsion plant and gives the specifications, system design, installation and testing of at least

- generators and their prime movers;
- switchboards;
- transformers/reactors;
- semiconductor convertors;
- propulsion motors;
- excitation systems;
- control, monitoring and safety systems;
- wires, cables, busbars, trunking systems.

Bow and stern thrusters intended as auxiliary steering devices, booster and take-home devices, all auxiliary generating plants, and accumulator battery powered propulsion machinery and equipment are excluded.

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.

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

IEC 60034-1:2004, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60076 (all parts), *Power transformators*

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

IEC 60092-101, *Electrical installations in ships – Part 101: Definitions and general requirements*

IEC 60092-202, *Electrical installations in ships – Partie 202: System design – Protection*

IEC 60092-204, *Electrical installations in ships – Part 204: System design – Electric and electrohydraulic steering gear*

IEC 60092-301, *Electrical installations in ships – Part 301: Equipment – Generators and motors*

IEC 60092-302, *Electrical installations in ships* –Part 302: *Low-voltage switchgear and controlgear assemblies*

IEC 60092-303, *Electrical installations in ships – Part 303: Equipment - Transformers for power and lighting*

IEC 60092-504:2001, *Electrical installations in ships – Part 504: Special features – Control and instrumentation*

IEC 60146 (all parts), *Semiconductor convertors*

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

IEC 61000-6-2, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61378-1, *Convertor transformers – Part 1: Transformers for industrial applications*

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

International Maritime Organization, *International convention of the safety of life at sea* (SOLAS):2004, *Chapter II-I/ Regulations 27, 29 and 30*