IEC 60092-509

Edition 1.0 2011-05

INTERNATIONAL STANDARD

Electrical installations in ships –
Part 509: Operation of electrical installations

IEC 60092-509:2011(E)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

IEC 60092-509

Edition 1.0 2011-05

INTERNATIONAL STANDARD

Electrical installations in ships –
Part 509: Operation of electrical installations

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE V

ICS 47.020.60

ISBN 978-2-88912-480-0

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 509: Operation of electrical installations

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.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60092-509 has been prepared by IEC technical committee 18: Electrical installations of ships and of mobile and fixed offshore units.

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

FDIS	Report on voting
18/1196/FDIS	18/1207/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, published under the general title *Electrical installations in ships,* can be found on the IEC web site.

The committee has decided that the contents of this publication will remain unchanged until the stability 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

The different parts of IEC 60092 form a series of international standards for electrical installations in sea-going ships, incorporating good practice and co-ordinating, 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 (SOLAS 74/88) a guide for future regulations which may be prepared and a statement of practice for use by ship owners, shipbuilders and appropriate organizations.

ELECTRICAL INSTALLATIONS IN SHIPS –

Part 509: Operation of electrical installations

1 Scope

This part of IEC 60092 is applicable to all operation of and work activity on electrical generation, conversion and distribution systems and electrical equipment in ships, including all a.c and d.c voltages.

This standard sets out the requirements for the safe operation of work and activity on, with, or near electrical installations. These requirements apply to operational, working and maintenance activities. It applies to all electrical work activities as well as non-electrical work activities such as structural work near electrical equipment and cables.

This standard does not apply to ordinary persons when using installations and equipment, provided that the installations and equipment are designed and installed for use by ordinary persons and comply with relevant requirements of the IEC 60092 series.

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 60092-101:2002, *Electrical installations in ships – Part 101*: *Definitions and general requirements*

IEC 61310-2, *Safety of machinery – Indication, marking and actuation – Part 2: Requirements for marking*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60092-101:2002 and the following apply.

3.1 General

3.1.1
electrical installation
installation including all the electrical equipment which provides for the generation, transmission, conversion, distribution and use of electrical energy. It includes energy sources such as batteries, capacitors and all other sources of stored electrical energy

[IEC 60050-651:1999, 651-01-04, modified]

3.1.2
live part
conductor or conductive part intended to be energized in normal operation, including a neutral conductor. Not, by convention, a PEN conductor, combining the functions of both a protective earthing conductor and a neutral conductor; or a PEM conductor, combining the functions of both a protective earthing conductor and a mid-point conductor or a PEL conductor, combining the functions of both a protective earthing conductor and a line conductor