

ELEKTRIPAIGALDISED LAEVADEL. OSA 507:  
VÄIKELAEVAD

Electrical installations in ships - Part 507 - Small vessels

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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English Version

**Electrical installations in ships - Part 507 - Small vessels  
(IEC 60092-507:2014)**

Installations électriques à bord des navires - Partie 507:  
Petits navires  
(IEC 60092-507:2014)

Elektrische Anlagen auf Schiffen - Teil 507: Kleine  
Wasserfahrzeuge  
(IEC 60092-507:2014)

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## Foreword

The text of document 18/1426/FDIS, future edition 3 of IEC 60092-507, prepared by IEC/TC 18 "Electrical installations of ships and of mobile and fixed offshore units" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60092-507:2015.

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- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-09-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-12-30

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## Endorsement notice

The text of the International Standard IEC 60092-507:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

ISO 10133	NOTE	Harmonised as	EN ISO 10133 (not modified).
ISO 10240	NOTE	Harmonised as	EN ISO 10240 (not modified).
ISO 13297	NOTE	Harmonised as	EN ISO 13297 (not modified).

## CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
1.1 General.....	10
1.2 Electrical systems.....	10
2 Normative references.....	11
3 Terms and definitions.....	13
3.1 General terms.....	13
3.2 Terms and definitions related to DC systems of distribution.....	14
3.3 Terms and definitions related to AC systems of distribution.....	14
3.4 Terms and definitions related to protection.....	15
3.5 Terms and definitions related to equipment.....	16
3.6 Terms and definitions related to batteries.....	18
3.7 Terms and definitions related to galvanic isolation from shore supplies.....	19
4 General requirements.....	19
4.1 Ratings.....	19
4.2 Ambient air and cooling water temperature.....	19
4.3 Inclination of vessel.....	20
4.4 Voltage and frequency variations.....	20
4.4.1 General.....	20
4.4.2 DC systems.....	20
4.4.3 AC systems.....	21
4.5 Electrical power sources.....	21
4.5.1 General.....	21
4.5.2 DC systems supplied from batteries.....	22
4.5.3 DC generator.....	22
4.5.4 AC systems.....	23
4.5.5 AC generator.....	23
4.5.6 Measuring instruments.....	24
4.5.7 Emergency source of electrical power.....	24
4.6 Equipment.....	25
4.6.1 Transformers.....	25
4.6.2 Converters.....	25
4.6.3 Motors.....	25
4.7 Electrical equipment and enclosures.....	25
4.7.1 General requirements.....	25
4.7.2 General degree of protection of equipment and enclosures.....	25
4.7.3 Protection from dripping water.....	26
4.7.4 Cable entry.....	26
4.7.5 Identification.....	26
4.7.6 Segregation of DC and AC systems.....	27
4.7.7 Electromagnetic compatibility.....	27
4.7.8 Busbars.....	27
4.7.9 Switches and controls.....	27
4.7.10 Final circuits.....	27
4.8 Plugs and socket-outlets.....	28

4.8.1	AC system .....	28
4.8.2	DC systems .....	28
4.8.3	Installation in special locations .....	28
4.9	Battery installation .....	28
4.9.1	General arrangements .....	28
4.9.2	Isolation of battery banks .....	28
4.9.3	Operational switching of battery banks .....	29
4.9.4	Permanently energised circuits .....	29
4.9.5	Ventilation .....	29
4.10	Electrical apparatus for explosive gas atmospheres .....	30
4.11	Battery chargers .....	30
4.11.1	Protection against overcharging and reversal of charging current .....	30
4.11.2	Wind generator and photovoltaic devices .....	31
4.12	Electric propulsion systems .....	31
4.12.1	General .....	31
4.12.2	Component parts of electric propulsion systems suitable for small vessels .....	31
4.12.3	Operator controls, instruments, system and trip alarms .....	33
4.13	Electrical fittings and cables attached to structures of another metal .....	34
4.14	Internal communication circuits .....	34
4.15	Navigation lights supply .....	34
4.16	Luminaires .....	34
4.17	Electrical heating and cooking appliances .....	35
4.18	Magnetic compasses .....	35
5	Distribution systems .....	35
5.1	DC distribution systems .....	35
5.2	Standard AC distribution systems .....	35
5.2.1	Types of AC distribution system .....	35
5.2.2	Earthing the neutral conductor in type TN AC systems .....	35
5.2.3	Earthing of non-current-carrying parts .....	36
5.2.4	Protective conductor in AC systems .....	36
5.3	Earth bonding conductors .....	36
5.4	Balance of loads in three-phase AC systems .....	36
5.5	Shore connection arrangements .....	37
5.5.1	General .....	37
5.5.2	Vessel connections .....	37
5.5.3	Information and connection instructions .....	37
5.5.4	Galvanic isolation provided by an isolation transformer .....	37
5.5.5	Galvanic isolation provided by a diode type galvanic isolator .....	38
6	Protection against electric shock in AC and DC systems with voltage exceeding safety voltage .....	39
6.1	Protection against direct contact .....	39
6.2	Automatic disconnection of supply to final circuit or equipment .....	39
6.3	Earthed neutral AC system (TN system) .....	39
6.4	Non-neutral earthed AC system (IT-type system) .....	39
6.5	Use of class II equipment .....	40
7	Protection against over-current and fault-current in AC and DC systems .....	40
7.1	General .....	40
7.2	Characteristics of protective devices .....	40

7.3	DC battery source .....	40
7.3.1	Overcurrent protection of main circuit from batteries .....	40
7.3.2	Batteries without output overcurrent protection .....	41
7.4	AC system .....	41
7.4.1	Protective devices .....	41
7.4.2	Final circuits .....	41
7.5	Generators .....	42
7.5.1	Small generators in DC systems .....	42
7.5.2	Use of fuses .....	42
7.5.3	Generator circuit-breaker .....	42
7.6	Transformers .....	42
7.7	Motor protection .....	42
7.8	Electronic power converters .....	42
8	Diversity (demand) factor .....	42
8.1	Circuits other than final circuits .....	42
8.2	Application of diversity (demand) factors .....	43
8.3	Final circuits .....	43
8.4	Motor power circuits .....	43
9	Cables .....	43
9.1	Selection of cables .....	43
9.1.1	Cables for DC systems .....	43
9.1.2	Cables for AC systems .....	43
9.1.3	Conductors .....	43
9.1.4	Protective coverings .....	43
9.2	Determination of the cross-sectional areas of conductors .....	44
9.2.1	General requirement .....	44
9.2.2	DC system .....	44
9.2.3	AC system .....	44
9.2.4	Protective conductor in AC systems .....	44
9.2.5	Current ratings for continuous service (AC and DC) .....	45
9.2.6	Correction factors for different ambient air temperatures .....	46
9.2.7	Correction factors for cable bunching .....	47
9.2.8	Correction factors for non-continuous service .....	47
9.2.9	Parallel connection of cables .....	47
10	Cable installation, conductor terminations and identification .....	48
10.1	Cable routes .....	48
10.2	Cable support and protection .....	48
10.3	Segregation of circuits .....	48
10.4	DC and AC cabling segregation .....	49
10.5	Instrument, control, navigation aids, data, and communications cables .....	49
10.6	Conductor terminations .....	50
10.7	Conductor identification .....	50
10.7.1	General .....	50
10.7.2	Bonding conductors .....	51
10.7.3	Conductor insulation colours in DC systems .....	51
11	Earthing .....	51
11.1	Earthing arrangements on small vessels with non-metallic hull .....	51
11.2	Earthing arrangements on small vessels with metallic hull .....	51

11.3	Earthing plate for the main earth connection in a small vessel with non-metallic hull .....	51
11.4	Insulation from earth of control systems for internal combustion engine on metallic hulled vessels .....	51
11.5	Earthing of electrical equipment enclosures .....	52
12	Lightning protection .....	52
12.1	Lightning protection conductors .....	52
12.2	Installation .....	52
12.3	Earthing of lightning conductors .....	52
13	Testing .....	52
13.1	General .....	52
13.2	Earthing .....	53
13.3	Insulation resistance .....	53
13.3.1	General .....	53
13.3.2	Switchboards, panel boards and distribution boards .....	53
13.3.3	Lighting and power circuits .....	53
13.3.4	Generators and motors .....	53
13.3.5	Transformers .....	53
13.4	Switchgear and controlgear .....	54
13.5	Voltage drop .....	54
13.6	Internal communication circuits .....	54
13.7	Lighting, heating and galley equipment .....	54
14	Vessels over 24 m in length up to 50 m/500 GT .....	54
14.1	General .....	54
14.2	Essential services .....	54
14.3	Capacity of the batteries .....	54
14.4	Segregation of supplies for essential circuits .....	55
14.5	SOLAS battery charger protection .....	55
14.6	Protection against over current and fault current – safety equipment .....	55
14.7	Earth faults in essential circuits .....	55
14.7.1	Earthed neutral systems (TN-type systems) .....	55
14.7.2	Non-earthed system (IT-type system) .....	55
14.8	Navigation light supply .....	55
14.9	Radio and navigation equipment .....	55
14.10	Navigation, control, instrumentation and communication systems .....	56
14.11	Electric and electrohydraulic steering gear .....	56
Annex A (informative)	Shore-side power supply arrangements .....	57
A.1	Connection to a shore power supply .....	57
A.1.1	General .....	57
A.1.2	Instructions included in a vessel owner's manual (ISO 10240) .....	57
A.1.3	Information and instructions for connecting an electrical shore supply to a vessel .....	57
A.2	Examples of general arrangements for an electrical supply to a vessel .....	58
A.2.1	Direct connection to a single phase mains supply .....	58
A.2.2	Direct connection to a single phase mains supply with an isolating transformer on the vessel .....	59
A.2.3	Direct connection to a three phase mains supply .....	59
A.2.4	Direct connection to a three phase mains supply with an isolating transformer on the vessel .....	60



A.2.5	Connection to a single phase supply through a shore-mounted isolating transformer .....	61
A.2.6	Direct connection to a single phase mains supply with a diode type galvanic isolator in the PE circuit to shore. ....	61
A.2.7	Direct connection to a three phase mains supply with a diode type galvanic isolator in the PE circuit to shore. ....	62
Annex B (informative)	Diode type galvanic isolator .....	63
B.1	General.....	63
B.2	Testing .....	64
Annex ZZ (informative)	Relationship between this standard and the essential requirements of EU directive 94/25/EC as amended by directive 2003/44/EC .....	65
Bibliography.....		66
Figure 1 – Diagram showing the use of shore power supply accessories.....		18
Figure A.1 – Direct connection to a single phase mains supply .....		59
Figure A.2 – Direct connection to a single phase mains supply with an isolating transformer on the vessel .....		59
Figure A.3 – Direct connection to a three phase mains supply .....		60
Figure A.4 – Direct connection to a three phase mains supply with an isolating transformer on the vessel .....		60
Figure A.5 – Connection to a single phase supply through a shore-mounted isolating transformer .....		61
Figure A.6 – Direct connection to a single phase mains supply with a diode type galvanic isolator in the protective earth circuit to shore .....		62
Figure A.7 – Direct connection to a three phase mains supply with a diode type galvanic isolator in the protective earth circuit to shore .....		62
Table 1 – Design parameters – Temperature .....		20
Table 2 – Angular deviation and motion .....		20
Table 3 – AC voltages and frequencies for vessel's service systems of supply.....		21
Table 4 – Required technical data for owner's manual .....		22
Table 5 – Degree of protection in accordance with IEC 60529.....		26
Table 6 – Minimum clearances and creepage distances for bare busbars .....		27
Table 7 – Reference currents for calculation of minimum ventilation .....		30
Table 8 – Table of main component parts of an electric propulsion system and associated clauses and sections in this standard .....		32
Table 9 – Recommended maximum breaking times for protective devices.....		41
Table 10 – Values of $\alpha$ used in the calculation of current ratings.....		45
Table 11 – Recommended current ratings for single core cables in continuous service (ambient temperature 45 °C).....		46
Table 12 – Correction factors for various ambient air temperatures.....		47
Table 13 – Correction factors for half-hour and one-hour service .....		47
Table ZZ.1 – Correspondence between this standard and directive 94/25/EC as amended by directive 2003/44/EC.....		65

## INTRODUCTION

This International Standard incorporates and coordinates, as far as possible, the existing requirements for electrical installations relevant to small vessels as published in other parts of the IEC 60092 series and the IEC 60364 series.

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## ELECTRICAL INSTALLATIONS IN SHIPS –

### Part 507: Small vessels

#### 1 Scope

##### 1.1 General

This part of IEC 60092 specifies requirements for the design, construction and installation of electrical systems in small vessels, which have a length of up to 50 m, or which have a gross tonnage not exceeding 500 Gross Tonnes (GT), designed for use on inland waters or at sea. It is not intended to apply to:

- a) small craft equipped only with a battery supplying circuits for engine starting and navigation lighting recharged from an inboard or outboard engine driven alternator.
- b) recreational craft of less than 24 m hull length requiring to conform to the Recreational Craft Directive 94/25/EC Annex 1 Essential Requirements Part 5.3 Electrical systems, except for three-phase alternating current installations in such recreational craft which operate at a nominal voltage not exceeding AC 500 V.

##### 1.2 Electrical systems

This standard applies to the types of DC and AC electrical systems described below, individually or in combination.

- a) Direct current system which operates at a nominal voltage not exceeding DC 50 V. For many small vessels, this will be the main electrical system supported by batteries for engine starting, navigation lights, navigational aids and communications equipment, lighting and other DC power consumer or converter equipment.
- b) Single-phase alternating current system which operates at a nominal voltage not exceeding AC 250 V. Such a system may be the principal electrical power system of a vessel or a system which may only be energized when connected to a shore supply. AC extra-low voltage, safety extra-low voltage, and other circuits may also comprise part of a single-phase AC system. A vessel may also be equipped with DC system(s) for equipment supplied from batteries as in 1.2 a) above.
- c) Three-phase alternating current system which operates at a nominal voltage not exceeding AC 500 V. The three-phase system is likely to be the principal electrical power system of a vessel's electrical installation. Such a vessel may also be equipped with single-phase AC circuits(s) similar to 1.2 b) above and DC system(s) for equipment supplied from batteries as in 1.2 a) above.

NOTE 1 Concerning recreational craft of less than 24 m hull length referenced in 1.1 b) above, the following standards apply:

- for direct current installations which operate at a nominal voltage not exceeding DC 50 V: ISO 10133;
- for single-phase alternating current installations which operate at a nominal voltage not exceeding AC 250 V single phase: ISO 13297.

NOTE 2 For alternating current systems having voltages exceeding AC 250 V single-phase or AC 500 V three-phase, for direct current systems exceeding DC 50 V, and for vessels larger than 500 GT or with a length greater than 50 m, other standards within the IEC 60092 series apply.

NOTE 3 Attention is drawn to regulations which govern specific requirements for navigation lights for small vessels.

NOTE 4 Attention is drawn to the fact that, in some countries the EC Directives covering EMC (89/336/EEC), low voltage (73/23/EEC) and general product safety (92/59/EEC) may be applied. In addition, Council Directive 97/70 applies to fishing vessels of 24 m in length and over, and Council Directive 98/18/EC applies to passenger ships. For high speed crafts, attention is drawn to the International code of safety for high-speed craft (HSC Code).

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 60079 (all parts), *Explosive atmospheres*

IEC 60092-101:1994, *Electrical installations in ships – Part 101: Definitions and general requirements*

IEC 60092-202:1994, *Electrical installations in ships – Part 202: System design – Protection*  
IEC 60092-202:1994/AMD 1:1996

IEC 60092-301:1980, *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 60092-304, *Electrical installations in ships – Part 304: Semiconductor convertors*

IEC 60092-306, *Electrical installations in ships – Part 306: Equipment – Luminaires and accessories*

IEC 60092-307, *Electrical installations in ships – Part 307: Equipment – Heating and cooking appliances*

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

IEC 60092-352, *Electrical installations in ships – Part 352: Choice and installation of electric cables*

IEC 60092-401:1980, *Electrical installations in ships – Part 401: Installation and test of completed installation*

IEC 60092-501:2013, *Electrical installations in ships – Part 501: Special features – Electric propulsion plant*

IEC 60146 (all parts), *Semiconductor convertors*

IEC 60245-4, *Rubber insulated cables-rated voltages up to and including 450/750 V – Part 4: Cords and flexible cables*

IEC 60309-1, *Plugs, socket-outlets and couplers for industrial purposes – Part 1: General requirements*

IEC 60309-2, *Plugs, socket-outlets and couplers for industrial purposes – Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories*

IEC 60332-1 (all parts), *Tests on electric and optical fibre cables under fire conditions – Part 1: Test for vertical flame propagation for a single insulated wire or cable*

IEC 60332-3-22, *Tests on electric cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A*

IEC 60364-7-709, *Low-voltage electrical installations – Part 7-709: Requirements for special installations or locations – Marinas and similar locations*

IEC 60445:2010, *Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals, conductor terminations and conductors*

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

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

IEC 60898-1, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation*

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

IEC 60947-7-1, *Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment – Terminal blocks for copper conductors*

IEC 60947-2, *Low voltage switchgear and controlgear – Part 2: Circuit-breakers*

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

IEC 61558 (all parts), *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V*

IEC 61558-2-4:2009, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers*

ISO 8846, *Small craft – Electrical devices – Protection against ignition of surrounding flammable gases*

ISO 9094-1, *Small craft – Fire protection – Part 1: Craft with a hull length of up to and including 15 m*

ISO 9094-2, *Small craft – Fire protection – Part 2: Craft with a hull length of over 15 m*

ISO 10239, *Small craft – Liquefied petroleum gas (LPG) systems*

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

IMO 904E, *Convention on the International Regulations for Preventing Collisions at Sea, International Maritime Organization (COLREG)*