

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Electrical installations in ships –  
Part 504: Automation, control and instrumentation**

**Installations électriques à bord des navires –  
Partie 504: Automatisation, commande et instrumentation**





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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
2 Normative references.....	10
3 Terms and definitions .....	12
4 General requirements .....	15
4.1 Dependability .....	15
4.2 Safety .....	15
4.3 Segregation .....	15
4.4 Performance .....	15
4.5 Usability.....	15
4.6 Integration .....	15
4.7 Development activities .....	15
5 Environmental type testing parameters.....	16
5.1 General.....	16
5.2 Performance .....	16
6 Design.....	22
6.1 Environmental and supply conditions .....	22
6.2 Circuit design.....	23
6.3 Mutual effects .....	23
6.4 Electrical subdivision.....	23
6.5 Signal level .....	23
6.6 Power supply .....	23
6.6.1 Independent supplies .....	23
6.6.2 Capacity .....	23
6.6.3 Protection .....	23
7 Construction and materials .....	24
7.1 Adjustments .....	24
7.2 Accessibility.....	24
7.3 Replacement.....	24
7.4 Non-interchangeability.....	24
7.5 Cooling .....	24
7.6 Mechanical load on connectors.....	24
7.7 Mechanical features of cabinets .....	24
7.8 Shock and vibration absorbers .....	25
7.9 Internal wiring .....	25
7.10 Cable connections.....	25
8 Installation and ergonomics .....	25
8.1 General.....	25
8.1.1 Layout .....	25
8.1.2 Compatibility.....	25
8.1.3 Labelling.....	25
8.1.4 Labels .....	25
8.1.5 Display colours .....	26
8.1.6 Illumination .....	26
8.1.7 Protection against fluid leakage.....	26

8.1.8	Protection from condensation .....	26
8.1.9	External cables and wiring.....	26
8.2	Sensors .....	26
8.2.1	Location of sensors.....	26
8.2.2	Temperature sensors .....	26
8.2.3	Pressure sensors .....	26
8.2.4	Water level detectors on bulk carriers.....	26
8.2.5	Enclosure .....	27
8.2.6	Testing and calibration.....	27
8.2.7	Presentation of information.....	27
8.3	Controls.....	27
8.3.1	Remote controls.....	27
8.3.2	Man-machine interface.....	28
8.4	Alert systems .....	28
9	Specific installations .....	28
9.1	Fire safety systems .....	28
9.2	Bilge systems.....	28
9.3	Machinery alert installations .....	28
9.3.1	General .....	28
9.3.2	Alert requirements.....	29
9.3.3	Display of information .....	29
9.3.4	Supply arrangements .....	30
9.3.5	Design .....	30
9.4	Power management systems .....	31
9.4.1	General .....	31
9.4.2	Automatic starting and stopping of main power supply equipment .....	32
9.4.3	Heavy load request and power reserve calculation.....	33
9.4.4	Black-out recovery .....	33
9.4.5	Load sharing and frequency control .....	33
9.4.6	Shut-down of diesel engine .....	34
9.4.7	Automatic disconnection of non-essential consumers.....	34
9.4.8	Design requirements of power management systems (PMSs).....	34
9.5	Automatic starting installations for electrical motor-driven auxiliaries .....	35
9.5.1	General .....	35
9.5.2	Automatic sequence starting .....	35
9.5.3	Starting installations for stand-by auxiliaries .....	35
9.5.4	Control voltages.....	36
9.5.5	Manual control .....	36
9.5.6	Mechanically driven auxiliaries in low speed range .....	36
9.5.7	Mechanically driven auxiliaries .....	36
9.5.8	Sensors .....	36
9.6	Machinery control installations.....	36
9.6.1	General .....	36
9.6.2	General requirements.....	37
9.6.3	Transfer of control.....	37
9.6.4	Remote control of propulsion machinery from the bridge .....	37
9.6.5	Indicators for remote control of machinery .....	38
9.6.6	Manual override .....	38
9.7	Machinery protection and safety systems.....	39

9.7.1	General .....	39
9.7.2	General requirements.....	39
9.8	Bow, inner, side shell and stern doors .....	39
9.8.1	Application.....	39
9.8.2	Remote control .....	40
9.8.3	Indicator system.....	40
9.8.4	Mode selection.....	40
9.8.5	Failsafe .....	40
9.8.6	Testing .....	40
9.8.7	Independence .....	40
9.8.8	Display .....	40
9.8.9	Sensors .....	40
9.8.10	Television surveillance .....	41
9.8.11	Water leakage detection.....	41
9.8.12	Drainage alarm .....	41
9.8.13	Control location.....	41
9.9	Power-operated watertight doors .....	41
9.9.1	General .....	41
9.9.2	Indications .....	41
9.9.3	Alarm.....	41
9.9.4	Closure rate.....	42
9.9.5	Power supply .....	42
9.9.6	Dedicated circuits .....	42
9.9.7	Location of equipment.....	42
9.9.8	Enclosures.....	42
9.9.9	Leakage.....	43
9.9.10	Independent circuits.....	43
9.9.11	Failure of alarm circuits.....	43
9.9.12	Failure of control circuits .....	43
9.9.13	Power supply monitoring .....	43
9.9.14	Mode selection.....	43
9.9.15	Indication on navigation bridge .....	43
9.9.16	Remote opening.....	43
9.10	Public address systems on passenger ships .....	44
9.10.1	General .....	44
9.10.2	Override .....	44
9.10.3	Operation.....	44
9.10.4	Emergency broadcast.....	44
9.10.5	Level adjustment.....	44
9.10.6	Minimum sound level.....	44
9.10.7	Interference .....	44
9.10.8	Fault tolerance .....	44
9.10.9	Protection .....	44
9.10.10	Fire zones.....	44
9.10.11	Segregation .....	45
9.10.12	Power supplies .....	45
9.10.13	Cabling .....	45
10	Computer based systems.....	45
10.1	General.....	45

10.2	General requirements.....	45
10.3	System categories.....	45
10.4	System configuration.....	47
10.4.1	General .....	47
10.4.2	Power supply .....	47
10.4.3	Hardware.....	48
10.4.4	Software .....	48
10.4.5	Data communication links.....	48
10.4.6	Wireless data communication.....	48
10.4.7	Network/integration of systems.....	49
10.4.8	User interface .....	49
10.4.9	Input devices .....	49
10.4.10	Output devices.....	50
10.4.11	Graphical user interface .....	50
10.5	Protection against modification and loss of data.....	50
10.6	Software maintenance.....	50
10.7	Remote access .....	51
10.7.1	General .....	51
10.7.2	Remote software maintenance .....	51
10.8	Documentation.....	51
10.8.1	General .....	51
10.8.2	Hardware.....	51
10.8.3	System functional description.....	52
10.8.4	Software .....	52
10.8.5	User interface .....	53
10.8.6	Test and evidence.....	53
11	Additional requirements for periodically unattended machinery spaces or for reduced attendance.....	55
11.1	General.....	55
11.2	Fire precautions .....	55
11.3	Protection against flooding .....	55
11.4	Control of propulsion machinery .....	55
11.5	Alarm system and engineers' alarm .....	55
11.6	Protection (safety) systems .....	55
11.7	Machinery, boiler and electrical installations .....	55
12	Commissioning and testing .....	55
12.1	Tests of completed installation .....	55
12.2	Operational tests.....	56
13	Documentation .....	56
	Bibliography .....	57
	Figure 1 – Typical designs of power management systems .....	31

Table 1 – Type tests, test procedures and severities.....	16
Table 2 – System categories .....	46
Table 3 – Examples of assignment to system categories.....	47
Table 4 – Tests and evidence according to the system category .....	54

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**ELECTRICAL INSTALLATIONS IN SHIPS –****Part 504: Automation, control and instrumentation****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.
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International Standard IEC 60092-504 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 2001. This edition constitutes a technical revision.

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

- a) the part title has been changed, the term “Automation” was added;
- b) the contents of the corrigendum of January 2011 have been included;
- c) a new subclause 5.1 “General” with general requirements for type testing has been added;
- d) Table 1 contents aligned with current version of document IACS Req. 1991/Rev. 5, 2006;
- e) the revised IMO Resolution A.1021(26), Code on alerts and indicators:2009 has been taken into account;

- f) IMO Resolution MSC.302(87) has been taken into account. As a consequence, the term “alert” has been used where the generic term applies. This concerns, in particular, the text in 8.4 and 9.3;
- g) a new subclause 8.2.4: The revised IMO Resolution MSC.145(77), Performance standards for water level detectors on bulk carriers:2003 has been taken into account;
- h) subclause 9.1 about fire detection and alarm systems has been completely revised, IMO Resolution MSC.98(73) (FSS Code) with amendment MSC.292(87): 2010 has been taken into account;
- i) a new subclause 9.2 “Bilge systems” has been added;
- j) the subclauses 9.4 “Automatic control installations for electrical power supply” and 9.5 “Automatic starting installations for electrical motor-driven auxiliaries” have been completely revised;
- k) Clause 10 “Computer based systems” has been completely revised;
- l) a new subclause 10.3.6 about wireless data communication has been added;
- m) a new subclause 10.5 about remote access has been added.

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

FDIS	Report on voting
18/1539/FDIS	18/1545/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 stability date indicated on the IEC website 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.

## 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 for the Safety of Life at Sea, 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 504: Automation, control and instrumentation

#### 1 Scope

This part of IEC 60092 specifies electrical, electronic and programmable equipment intended for automation, control, monitoring, alert, and safety and protection systems for use in ships.

#### 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 60050 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at [www.electropedia.org](http://www.electropedia.org))

IEC 60068-2-1, *Environmental testing – Part 2: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2: Tests – Test B: Dry heat*

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-30, *Environmental testing – Part 2: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-52, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

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

IEC 60092-101:1994/AMD1:1995

IEC 60092-201:1994, *Electrical installations in ships – Part 201: System design – General*

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

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

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

IEC 60092-502, *Electrical installations in ships – Part 502: Tankers – Special features*

IEC 60447, *Basic and safety principles for man-machine interface, marking and identification – Actuating principles*

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