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Incorporating Corrigendum No. 1

Electronic equipment for use in power installations

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ICS 29.240.01



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EUROPEAN STANDARDS NORME EUROPÉENNE EUROPÄISHE NORM

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Descriptors: electrical installation, industrial electrical installation, electronic equipment, definitions, design, safety, protection against electric shocks, protection against live parts, climatic conditions, electrical properties, mechanical properties, tests, marking

English version

Electronic equipment for use in power installations

Équipement électronique utilisé dans les installations de puissance

Ausrüstung von Starkstromanlagen mit elektronischen Betriebsmitteln

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European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

Contents

| Foreword | Conter |
|--|---------|
| This European Standard was prepared by the Task Force CENELEC BTTF 60-1, Assembly of electronic equipment. | Forewor |
| A first draft was submitted to CENELEC enquiry | 1 |
| (6MP) in August 1994 but failed to be accepted. A | 2 |
| second draft was submitted to CENELEC enquiry | 3 |
| (2MP) in September 1995 and was accepted. The text of the final draft was submitted to the Unique | 4 |
| Acceptance Procedure and was approved by | 4.1 |
| CENELEC as EN 50178 on 1997-07-01. | 4.2 |
| The following dates were fixed: | 4.3 |
| latest date by which the EN has to be implemented at national level by publication of an identical | 4.4 |
| national standard or by | 4.5 |
| endorsement (dop) 1998-06-01 | 4.6 |
| — latest date by which the national standards conflicting with | |
| the EN have to be withdrawn (dow) 2003-06-01 | 5 |
| | 5.1 |
| Annexes designated "informative" are given for information only. In this standard annexes A and B are | 5.2 |
| informative. Annex A offers additional information e.g. as a basis | 5.2.1 |
| for design purposes. It also indicated items where new | 5.2.2 |
| standards are expected to be established. Functions or characteristics presented in the informative annex A may be used as options of the electronic equipment, | 5.2.3 |
| provided that test methods are specified and test | 504 |
| equipment is available. In any case, these points have to be discussed and clarified between customer and | 5.2.4 |
| manufacturer. | 5.2.4.1 |
| Annex B is under consideration. It is intended to | 5.2.5 |
| contain tables with all important figures and values. It shows a condensed overview on the conditions and | 5.2.6 |
| requirements for convenience of the user of the standard. | 5.2.7 |
| The requirements of this European Standard are based | 5.2.8 |
| on basic or generic standards issued by IEC or CLC where these standards exist. This is valid especially for safety and environmental requirements. Additional requirements are stipulated where necessary. | 5.2.8.1 |
| This European Standard is a harmonized standard for electronic equipment for use in power installations | 5.2.8.2 |
| according to the Low Voltage Directive 73/23/EEC. No additional requirements are to be met for compliance with this directive. | 5.2.8.3 |
| | 5.2.8.4 |
| | 5.2.8.5 |

| | | Page |
|------|--|---------|
| vord | | 2 |
| | Scope | 8 |
| | Normative references | 8 |
| | Definitions | 10 |
| | Requirements for entire system | 16 |
| | Normal function | 16 |
| | Damage to persons or material | 16 |
| | EE connected to unearthed supply mains under condition of earth fault | 17 |
| | Earthing requirements (grounding, earthing and screening) | 17 |
| | Wires and cables for interconnection | 17 |
| | Fuses in neutral and protective conductors | 17 |
| | Safety requirements | 18 |
| | General requirements | 18 |
| | Requirements for EE with regard to protection against electric shock | 20 |
| | Requirements for protection against electric shock | 20 |
| | Protection against direct contact | 21 |
| | Protection by means of insulation of live parts | 21 |
| | Protection by means of enclosures and barriers | 21 |
| | Distances | 22 |
| | Discharge of capacitors | 22 |
| | Built-in devices | 22 |
| | EE for closed electrical operating areas | 22 |
| | Protection in the case of direct contact | 22 |
| | Protection by means of extra-low voltage with protective separation (SELV- and PELV-system | 22 |
| 2 | Protection by means of limitation of the discharging energy | 22 |
| } | Protection by means of protective impedance | 22 |
| Į | Protection by using limited voltages in control circuits | n 23 |
| 5 | Connectors | 23 |
| | | |

5.2.9

| | Р | Page | | Ι | Page |
|----------------------|--|----------|--------------------|---|------|
| 5.2.9.1 | Insulation between live parts and exposed conductive parts | 23 | 5.2.18.6 | Components and other electrical sub-assemblies | 47 |
| 5.2.9.2 | Protective bonding | 23 | 5.3 | Requirements for EEs in installations | |
| 5.2.9.3 | Rating of protective bonding | 24 | | with regard to protection against | 477 |
| 5.2.9.4 | Protection against corrosion | 24 | 501 | electric shock | 47 |
| 5.2.9.5 | Protective bonding conductor with low cross-section | 24 | 5.3.1 | Protection with regard to direct contact | 47 |
| 5.2.9.6 | EE with voltage above a.c. 1 400 V or d.c. 2 000 V | 24 | 5.3.1.1 5.3.1.2 | Cables and leads Connection of EE with protective | 47 |
| 5.2.9.7 | Interruption | 24 | | separation | 47 |
| 5.2.9.8 | Marking | 24 | 5.3.1.3 | Built-in devices in installations | 47 |
| 5.2.10 | Means of connection for the protective conductor | 24 | 5.3.1.4 5.3.2 | EE in closed electrical operating areas Protection with regard to indirect | 48 |
| 5.2.11 | Leakage current and fault current | 24 | | contact | 48 |
| 5.2.11.1 | High leakage current | 24 | 5.3.2.1 | Leakage current through the protective conductor | 48 |
| 5.2.11.2 | Compatibility with | | 5.3.2.2 | Permissible touch voltage | 48 |
| | residual-current-operated protective devices in case of low leakage current | 25 | 5.3.2.3 | Protection of EE by residual-current- operated protective device | 48 |
| 5.2.12 | Special features in EE for protective class II | 26 | 6 | Environmental requirements and conditions | 48 |
| 5.2.13 | Decisive voltage | 27 | 6.1 | Climatic conditions | 48 |
| 5.2.14 | Solid insulation, insulation of circuits | 29 | 6.1.1 | Temperature | 49 |
| 5.2.14.1 | Between circuits and exposed | | 6.1.1.1 | Ambient air temperature | 49 |
| | conductive parts or accessible surfaces of EE | 29 | 6.1.1.2 | Cooling medium temperature | 50 |
| 5.2.14.2 | Between circuits | 29 | 6.1.2 | Humidity and air pressure | 50 |
| 5.2.14.3 | Bridging of the insulation via | | 6.1.3 | Pollution | 50 |
| | conductive parts | 29 | 6.2 | Mechanical requirements (general) | 50 |
| 5.2.15 | Clearances and creepage distances, | 20 | 6.2.1 | Mechanical shock | 50 |
| F 0 1F 1 | pollution degree | 29 29 | 6.2.2 | Mechanical vibration | 50 |
| 5.2.15.1 5.2.15.2 | Clearances and creepage distances | | 6.2.2.1 | Immunity requirement to mechanical | |
| 5.2.15.2 5.2.16 | Pollution degree Clearances | 37 37 | | vibration | 50 |
| 5.2.10 5.2.16.1 | Clearances between mains-circuits and | | 6.2.2.2 | Mechanical vibration emission constraints | 50 |
| 59169 | their environment | 38 | 6.2.3 | Sealing in case of liquid cooling | 51 |
| 5.2.16.2 | Clearances between non-mains-circuits and their environment | 39 | 6.2.4 | Sealing against dust ingress to EE | 51 |
| 5.2.16.3 | Clearances within a circuit | 40 | 6.3 | Electrical and electromagnetic requirements | 51 |
| 5.2.17 | Creepage distances | 40 | 6.3.1 | Conditions in the system (immunity | 01 |
| 5.2.18 | Protective separation | 44 | 0.0.1 | level for EE) | 51 |
| 5.2.18.1 | Constructive measures | 45 | 6.3.2 | EE connected to a.c. supply mains | |
| 5.2.18.2 | Protective separation by double or | | 6 0 0 i | (immunity) | 51 |
| F 0 10 5 | reinforced insulation | 45 | 6.3.2.1 | Supply voltage variation | 51 |
| 5.2.18.3 | Protective separation by protective screening | 45 | 6.3.2.2 | Frequency | 51 |
| 5.2.18.4 | Clearances and creepage distances in | | 6.3.3 | EE connected to d.c. supply mains (immunity) | 51 |
| 5.2.18.5 | case of protective separation Partial discharge | 46 46 | 6.3.4 | Short-circuit withstand capability (immunity) | 52 |
| | - | | | | |

| | Р | age | | | Page |
|---------------------|---|------------|------------------|---|----------|
| 6.3.5 | Immunity from electromagnetic disturbance | 52 | 8 | Requirements for the assembly of EE(s) in power installations | 56 |
| 6.3.6 | Effects of EE(s) on the system | | 8.1 | General | 56 |
| | (emission) | 52 | 8.2 | Fitting tolerances after assembly | 56 |
| 6.3.7 | Rating of power electronic equipment | 52 | 8.3 | Supply mains | 56 |
| 7 | Requirements for electronic equipment | 52 | 8.3.1 | Monitoring of insulation | 56 |
| 7.1 | Design and construction | 52 | 8.3.2 | Functional earthing | 56 |
| 7.1.1 | General | 52 | 8.3.3 | Design and protection of conductors | |
| 7.1.2 | Quality and reliability | 52 | | to and in EE | 56 |
| 7.1.3 | Working life | 52 | 8.3.3.1 | Power input conductors to EE | 56 |
| 7.1.4 | Insulation | 52 | 8.3.3.2 | Conductors between separated parts | |
| 7.1.5 | Component selection and use | 53 | 0000 | of an EE | 57 |
| 7.1.5.1 | Selection criteria for components | 53 | 8.3.3.3 | Conductors on the load side of EE | 57 |
| 7.1.5.2 | Hazards arising from components | 53 | 8.3.3.4 | Protective conductors | 57 |
| 7.1.6 | Power supply switching, fusing and | | 9 | Testing | 57 |
| | usage | 53 | 9.1 | General | 57 |
| 7.1.6.1 | Fire protection and fire risk | 53 | 9.1.1 | Tests and methods of testing | 57 |
| 7.1.6.2 | Operation under fault conditions | 53 | 9.1.1.1 | Type test | 57 |
| 7.1.7 | Construction | 53 | 9.1.1.2 | Routine test | 58 |
| 7.1.7.1 | EE mounting practice — general | 53 | 9.1.1.3 | Sample test | 58 |
| 7.1.7.2 | Cooling | 53 | 9.1.1.4 | Site test | 58 |
| 7.1.7.3 | Mechanical protection of equipment | 5 0 | 9.1.2 | General conditions for testing | 58 |
| $\nabla 1 \nabla A$ | and sub-units | 53 59 | 9.1.3 | Verification procedure | 58 |
| 7.1.7.4 | Layout of components and equipment | 53 54 | 9.2 | Compliance with this European | 50 |
| 7.1.7.5 | Temperature of accessible parts | 54 | 0.0 | Standard | 59 50 |
| 7.1.7.6 | Fixing (mechanical retention of components and sub-units) | 54 | 9.3 9.4 | Overview of tests Performance of the tests | 59 61 |
| 7.1.8 | Electrical connections | 54 | 9.4 9.4.1 | | 61 61 |
| 7.1.9 | Multiple connectors and | | 9.4.1 9.4.2 | Visual inspections Climatic environmental tests | 61 61 |
| | plug-and-socket devices | 54 | 9.4.2 9.4.2.1 | | 61 62 |
| 7.1.10 | Electrical conductors | 54 | | Dry heat test | |
| 7.1.10.1 | Wires and cables for interconnection | 54 | 9.4.2.2 | Damp heat test Mechanical tests | 62 62 |
| 7.1.10.2 | Conventional wiring within EE | 54 | 9.4.3 | | 63 63 |
| 7.1.11 | Reference conductor, functional | | 9.4.3.1 | Topple test | 63 C2 |
| | earthing | 54 | 9.4.3.2 | Vibration test | 63 C2 |
| 7.2 | Marking, identification, documentation | 54 | 9.4.3.3 | Seal test for liquid cooled EE | 63 64 |
| 7.2.1 | Marking | 54 | 9.4.4 | Safety related mechanical tests | 64 64 |
| 7.2.2 | Identification of equipment, sub-units, position and terminals | 55 | 9.4.4.1 | Clearances and creepage distances | 64 C4 |
| 7.2.3 | • | | 9.4.4.2 | Non-accessibility test | 64 64 |
| 7.2.3 7.2.3.1 | Documentation General | 55 55 | 9.4.4.3 | Enclosure test | 64 64 |
| | | | 9.4.4.4 | Suitability test of varnish or coating | 64 |
| 7.2.3.2 | Operating documents | 55 | 9.4.5 | Safety related electrical (dielectric) tests | 64 |
| 7.2.3.3 | Instructions for transport, maintenance, fault finding, repair | 56 | 9.4.5.1 | Impulse voltage test | 65 |
| 7.2.3.4 | Test records | 56 | 9.4.5.2 | A.c. or d.c. voltage insulation test | 66 |
| 7.2.4 | Drawings and diagrams | 56 | 0.1.0.4 | The of the voltage institution test | 00 |
| | | 55 | | | |

| | | Page | | | Page |
|------------------------|---|--------------|-------------------------|---|----------|
| 9.4.5.2.1 | Relation of a.c. or d.c. test voltage to rated insulation voltage | 66 | A.5.2.9.4 A.5.2.11.2 | Protection against corrosion Compatibility with | 77 |
| 9.4.5.2.2 | Value and type of insulation test voltage | 66 | 11,0,2,11,2 | residual-current-operated protective devices | 77 |
| 9.4.5.2.3 | Performing the insulation voltage test | 67 | A.5.2.13 | Decisive voltage | 79 |
| 9.4.5.2.4 | Duration and verification of the a.c. or d.c. voltage test | 69 | A.5.2.14.1 | Between circuits and exposed conductive parts or accessible | |
| 9.4.5.3 | Partial discharge test | 69 | | surfaces of EE | 79 |
| 9.4.5.4 | Insulation resistance test in the power | | A.5.2.16 | Clearances | 82 |
| | installation | 69 | A.5.2.18 | Protective separation | 83 |
| 9.4.5.5 | Protective impedance, protective screening | 70 | A.5.2.18.1 | Constructive measures | 83 |
| 9.4.6 | Electrical environmental tests | 70 | A.5.2.18.7 | Coil devices | 84 |
| 9.4.6.1 | Emission of electromagnetic | 10 | A.5.2.18.8 | Switchgear and electromechanical components | 85 |
| 0.4.0.1 | disturbance | 70 | A.5.2.18.9 | Semiconductor components and | 00 |
| 9.4.6.2 | Immunity from electromagnetic | | 11.0.2.10.0 | semiconductor configurations | 85 |
| | disturbance | 70 | A.5.2.18.10 | Connectors and terminal blocks | 85 |
| 9.4.6.3 | Short-circuit withstand capability | 70 | A.5.3 | Requirements for EEs in installations | |
| 9.4.7 | Performance test | 71 | | with regard to protection against electric shock | 85 |
| | informative) Additional information | 72 | A.5.3.2.4 | Equipotential bonding between | 00 |
| A.2 | Bibliography | 72 | A.0.0.2.4 | reference conductor and protective | |
| A.4 | Requirements for entire system | 72 | | conductor | 85 |
| A.4.4 | Earthing requirements (grounding, earthing and screening) | 72 | A.6 | Environmental requirements and conditions | 85 |
| A.4.4.1 | Functional grounding/earthing | 73 | A.6.1.2 | Humidity and air pressure | 86 |
| A.4.4.1.1 | Cable screens | 73 | A.6.1.3 | Pollution (atmospheric) | 86 |
| A.4.4.1.2 | Armoring, conduits and cable trays | 73 | A.6.1.4 | Special stress | 86 |
| A.4.4.1.3 A.4.4.1.4 | Reference conductors Transformer screens | 73 74 | A.6.2.2.1 | Immunity requirement to mechanical vibration | 86 |
| A.4.4.1.5 | Filter returns | 74 | A.6.3 | Electrical and electromagnetic | |
| A.4.4.1.6 | Radio frequency (RF) screens | 74 | | requirements | 86 |
| A.4.7 | Acoustic noise | 74 | A.6.3.2 | EE connected to a.c. supply mains | 05 |
| A.5 | Safety requirements | 74 | | (immunity) | 87 |
| A.5.2.4 | Protection by means of enclosures | F 7.4 | A.6.3.2.3 | Voltage dips and short supply interruptions | 87 |
| A 7 0 4 0 | and barriers | 74 74 | A.6.3.2.4 | Harmonic and interharmonic voltages | 87 |
| A.5.2.4.2 | Mechanical fault | 74 74 | A.6.3.2.5 | Voltage notches | 87 |
| A.5.2.4.3 | Mechanical durability | 74 74 | A.6.3.2.6 | Voltage unbalance | 88 |
| A.5.2.4.4 | Screws | 74 75 | A.6.3.3 | EE connected to d.c. supply mains | |
| A.5.2.4.5 | Opening of enclosures Protection in the case of direct | 75 | | (immunity) | 88 |
| A.5.2.8 | contact | 75 | A.6.3.5 | Immunity from electromagnetic disturbance | 88 |
| A.5.2.8.2 | Protection by means of limitation of discharging energy | 77 | A.6.3.5.1 | Types of interference | 88 |
| A.5.2.8.3 | Protection by means of protective impedance | 77 | A.6.3.5.2 | Electrical isolation of process I/O and telecommunication ports | 88 |
| A.5.2.9.2 | Bonding connection arrangements | 77 | A.6.3.6 | Effects of EE(s) on the system | 00 |
| A.5.2.9.3 | Rating of protective bonding | 77 | A.7 | (emission) Requirements for electronic equipment | 89 89 |
| 11.0.2.0.0 | immig of protective boliding | | A. (| requirements for electronic equipment | 09 |

Page 6 EN 50178:1997

| | | Page | | | Page |
|------------|--|----------|---|---|----------|
| A.7.1.2 | Quality and reliability | 89 | A.7.2.4.2 | Diagrams | 94 |
| A.7.1.5 | Component selection and use | 89 | A.7.3 | Setting-up, calibration and | |
| A.7.1.5.3 | Rating | 89 | | maintenance | 94 |
| A.7.1.5.4 | Tolerance of components | 89 | A.7.3.1 | Objectives | 94 |
| A.7.1.5.5 | Storage | 89 | A.7.3.2 | Preset controls and adjustable components | 94 |
| A.7.1.5.6 | Failure mechanism | 90 | A.7.3.3 | Removal and replacement of sub-units | |
| A.7.1.5.7 | Semiconductor devices, including integrated circuits | 90 | A.7.3.4 | Test points and other maintenance | 95 |
| A.7.1.5.8 | Indicating devices | 90 | A.7.3.5 | aids Special tools | 95 95 |
| A.7.1.5.9 | Storage/transportation | 90 | A.7.3.6 | Power sources for test equipment | 95 95 |
| A.7.1.6 | Power supply switching, fusing and | | A.7.3.7 | Loose items | 95 95 |
| | usage | 90 | A.1.5.1 A.8 | Requirements for the assembly of | 30 |
| A.7.1.6.1 | Fire protection and fire risk | 90 | 11.0 | EE(s) in power installations | 95 |
| A.7.1.6.3 | Power supply units | 90 | A.8.3.3.1 | Power input conductors to EE | 95 |
| A.7.1.6.4 | Power supply unit usage | 90 | A.9 | Testing | 95 |
| A.7.1.6.5 | Batteries | 91 | A.9.1.1.1 | Type test | 95 |
| A.7.1.7 | Construction | 91 | A.9.1.1.5 | Integration tests | 96 |
| A.7.1.7.2 | Cooling | 91 | A.9.4 | Additional tests | 96 |
| A.7.1.7.7 | Component mounting (avoidance of excessive mechanical stressing) | 91 | A.9.4.2.3 | Low temperature test | 96 |
| A.7.1.8 | Electrical connections | 91 | A.9.4.2.4 | Salt corrosion test | 96 |
| A.7.1.8.1 | Soldered connections | 91 | A.9.4.2.5 | Humidity cycling test | 96 |
| A.7.1.8.2 | Component soldering | 91 | A.9.4.2.6 | Mould growth test | 96 |
| A.7.1.8.3 | Solderless wrapped connections | 91 | A.9.4.2.7 | Industrial atmosphere test | 96 |
| A.7.1.8.4 | Screwtype connections | 91 | A.9.4.3.4 | Drop test | 96 |
| A.7.1.8.5 | Current carrying parts and their | 01 | A.9.4.3.5 | Seismic test | 96 |
| 11.11.0.0 | connections | 91 | A.9.4.5.3 | Partial discharge test | 96 |
| A.7.1.8.6 | Crimped connections | 91 | A.9.4.6.4 | High frequency disturbance test | 96 |
| A.7.1.8.7 | Insulation displacement connections | 91 | A.9.4.6.5 | Insulation tests for process I/O and | |
| A.7.1.8.8 | Terminal blocks | 92 | | telecommunication ports with electrical isolation | 96 |
| A.7.1.9 | Multiple connectors and plug-and- | | A.9.4.8 | Soak test | 90 99 |
| | socket devices | 92 | | nformative) Tables and figures | 99 |
| A.7.1.9.1 | Printed circuit board connection | 92 | - | Arrangement of fuses in sub-assemblies | |
| A.7.1.10 | Electrical conductors | 92 | and in inst | | , 18 |
| A.7.1.10.2 | Conventional wiring within EE | 92 | Figure 2 — Functional summary of protective | | |
| A.7.1.10.3 | Materials and finishes | 93 00 | | against electric shock | 19 |
| A.7.1.12 | Programmable equipment | 93 00 | | Examples for protection against direct | 00 |
| A.7.1.12.1 | Software and firmware | 93 00 | contact | Down short loading to manipuponts | 20 |
| A.7.1.12.2 | Software/firmware support | 93 02 | | Flow chart leading to requirements g EE(s) behind an RCD | 26 |
| A.7.2 | Marking, identification, documentation | | | Typical waveform for case a) a.c. | |
| A.7.2.2 | Component identification | 93 | voltage | | 27 |
| A.7.2.3.5 | Documentation for software, firmware and programmable logic | 94 | | Typical waveform for case b) d.c. | ~= |
| A.7.2.4 | Drawings and diagrams | 94 | voltage | | 27 |
| A.7.2.4.1 | Drawings | 94 | Figure 7 — voltage | Typical waveform for case c) pulsating | 28 |
| | - | | 101000 | | -0 |

Page

49

54

58

60

62

62

63

63

64

65

66

67

69

70

71

77

86

| Ι | Page | Ι | C |
|---|------|---|---|
| Figure 8 — Determination of insulation within a circuit | 31 | Table 7 — Climatic conditionsTable 8 — Heating of accessible parts | |
| Figure 9 — Determination of insulation between live parts and accessible surfaces | 32 | Table 9 — General test conditions | |
| Figure 10 — Determination of insulation between circuits and environment and of insulation between circuits | 33 | Table 10 — Overview of tests Table 11 — Dry heat test Table 12 — Damp heat test | |
| Figure 11 — Determination of functional insulation | 34 | Table 13 — Topple test | |
| Figure 12 — Determination of basic insulation | 35 | Table 14 — Vibration test | |
| Figure 13 — Determination of double or reinforced insulation | 36 | Table 15 — Non-accessibility test Table 16 — Impulse voltage test | |
| Figure 14 Protective separation (with the respective subclauses in parentheses) | 44 | Table 17 — Impulse test voltage | |
| Figure 15 — Clearances and creepage distances for protective separation | 46 | Table 18 — A.c. or d.c. insulation test voltage Table 19 — Partial discharge test | |
| Figure 16 — Voltage test procedures | 68 | Table 20 — Minimum value of insulation resistance | |
| Figure A.1 — Examples for protection in the case | | Table 21 — Short-circuit withstand capability | |
| of direct contact Figure A.2 — Fault-current in connections with | 76 | Table A.1 — Values of accessible capacitance and charging voltage (threshold of pain) | |
| semiconductor devices. | 78 | Table A.2 — Maximum concentration of corrosive | |
| Figure A.3 — Planning example for application of RCD Type B | 79 | gases | |
| Figure A.4 — Examples of subdivided insulation against accessible surfaces of EE | 80 | | |
| Figure A.5 — Examples for the insulation of control elements | 81 | | |
| Figure A.6 — Examples for the design of clearances (continued) | 82 | | |
| Figure A.7 — Correlation between humidity and temperature of the air | 86 | | |
| Figure A.8 — Periodical momentary dips of a.c. mains voltage caused by convertors | 88 | | |
| Figure A.9 — Insulation displacement connection with flat cable | 92 | | |
| Figure A.10 — Test set-up for EE grounded via a dedicated earthing connection | 98 | | |
| Figure A.11 — Test set-up for EE grounded via the power cord | 98 | | |
| Figure A.12 — Application of the test voltage to a single port and to grouping of ports | 99 | | |
| Table 1 — Summary of the limits of the decisive voltage $U_{\rm M}$ | 28 | | |
| Table 2 — Definitions of pollution degrees | 37 | | |
| Table 3 — Clearances between mains-circuits and their environment | 38 | | |
| Table 4 — Clearances between non-mains-circuits and their environment | 39 | | |
| Table 5 — Clearances within a circuit | 40 | | |
| Table 6 — Minimum creepage distances | 42 | | |
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Introduction

As the title indicates this European Standard applies where electronic equipment is to be installed or is used in power installations. The term electronic equipment denotes equipment which may contain information technology equipment as well as power electronic equipment and non-electronic components. Electronic equipment may be designed and used as stand-alone-equipment or as sub-assemblies built as cubicles, plug-in-units or assembled printed circuit boards. However, the EMC requirements are always to be fulfilled on the apparatus or system level.

The term power installation as used in this European Standard denotes an installation with assembled electrical and electronic equipment in a given location and designed for coordinated operation and connected to an electricity supply system. Although the use of the installation is not specified it is expected that the main purpose will be controlling, regulating and converting electrical energy. In all cases within this European Standard a power installation is interacting with the electricity supply system, either directly e.g. by means of control, regulating and protection system, or indirectly e.g. by means of measurements leading to intervention by personnel. However, power installation as used in other standards may have other definitions.

As the title "Electronic equipment for use in power installations" implies the standard mainly applies where electronic equipment is integrated into or is used in power installations. As the standard is also concerned with the design and testing of electronic equipment, the appropriate clauses within it apply in cases where no other applicable specifications exist in individual product standards.

Beyond that the main intention of the standard is to stipulate minimum requirements for the design and manufacture of electronic equipment, for protection against electric shock, for testing and for the integration into systems for power installations. Right from the beginning and reflecting the experiences of the experts it seems necessary to use minimum requirements in order to achieve a certain technical level with respect to safety and reliability. This is especially true where electronic equipment is assembled into power installations.

In all cases where more severe requirements are defined in individual product standards or purchasing specifications they shall take precedence over the requirements of this European Standard. This may be true for special safety related applications of electronic equipment or applications under special environmental conditions.

In the other cases where a product standard does not meet the minimum requirements of this European Standard and therefore prevents the direct use of electronic equipment designed and manufactured fulfilling the requirements of those product standards additional means has to be considered in power installations. One possibility is to influence the environmental conditions in which the electronic equipment is operating so that they are compatible with the requirements of this European Standard. This can be done by special casing or means of filtering for example. The other possibility is to improve the electronic equipment so that it meets the requirements of this European Standard.

1 Scope

This European Standard applies to the use of electronic equipment (EE) in power installations where a uniform technical level with respect to safety and reliability is necessary. This standard also applies to EE which are not covered by a specific product standard. This European Standard defines the minimum requirements for the design and manufacture of EE,

for protection against electric shock, for testing and its integration into systems for power installations.

This European Standard does not cover the following applications: electrical accessories and electrical appliances for household and similar purposes, medical equipment, electric railway equipment, data processing without control on systems and processes, public and private non-industrial telecommunication and radio communication equipment and networks, protection relays, residual-current-operated protective devices, uninterruptible power supplies, lighting equipment and public charging equipment for electrical vehicles.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

European Standards

EN 29000:1988, Quality management and quality assurance — Guidelines for selection and use.

EN 50081-1, Electromagnetic compatibility — Generic emission standard — Part 1: Residential, commercial and light industry.

EN 50081-2, Electromagnetic compatibility — Generic emission standard — Part 2: Industrial environment.

EN 50082-1, Electromagnetic compatibility — Generic immunity standard — Part 1: Residential, commercial and light industry

EN 50082-2, Electromagnetic compatibility — Generic immunity standard — Part 2: Industrial environment.

prEN 50093:1991, *Basic immunity standard for voltage dips, short interruptions and voltage variations.*