

Electronic equipment for use in power installations

The European Standard EN 50178:1997 has the status of a
British Standard

ICS 29.240.01

National foreword

This British Standard is the English language version of EN 50178:1997.

The UK participation in its preparation was entrusted to Technical Committee PEL/22, Static power convertor equipment, which has the responsibility to:

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- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 99 and a back cover.

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Amendments issued since publication

Amd. No.	Date	Comments
10604 Corrigendum	August 1999	Correction to Table 10

This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 December 1998

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ISBN 0 580 30453 1

ICS 29.240.00

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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CENELEC

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

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Foreword

This European Standard was prepared by the Task Force CENELEC BTTF 60-1, Assembly of electronic equipment.

A first draft was submitted to CENELEC enquiry (6MP) in August 1994 but failed to be accepted. A second draft was submitted to CENELEC enquiry (2MP) in September 1995 and was accepted. The text of the final draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50178 on 1997-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2003-06-01

Annexes designated “informative” are given for information only. In this standard annexes A and B are informative.

Annex A offers additional information e.g. as a basis for design purposes. It also indicated items where new standards are expected to be established. Functions or characteristics presented in the informative annex A may be used as options of the electronic equipment, provided that test methods are specified and test equipment is available. In any case, these points have to be discussed and clarified between customer and manufacturer.

Annex B is under consideration. It is intended to contain tables with all important figures and values. It shows a condensed overview on the conditions and requirements for convenience of the user of the standard.

The requirements of this European Standard are based 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.

This European Standard is a harmonized standard for electronic equipment for use in power installations according to the Low Voltage Directive 73/23/EEC. No additional requirements are to be met for compliance with this directive.

Contents

	Page
Foreword	2
1 Scope	8
2 Normative references	8
3 Definitions	10
4 Requirements for entire system	16
4.1 Normal function	16
4.2 Damage to persons or material	16
4.3 EE connected to unearthed supply mains under condition of earth fault	17
4.4 Earthing requirements (grounding, earthing and screening)	17
4.5 Wires and cables for interconnection	17
4.6 Fuses in neutral and protective conductors	17
5 Safety requirements	18
5.1 General requirements	18
5.2 Requirements for EE with regard to protection against electric shock	20
5.2.1 Requirements for protection against electric shock	20
5.2.2 Protection against direct contact	21
5.2.3 Protection by means of insulation of live parts	21
5.2.4 Protection by means of enclosures and barriers	21
5.2.4.1 Distances	22
5.2.5 Discharge of capacitors	22
5.2.6 Built-in devices	22
5.2.7 EE for closed electrical operating areas	22
5.2.8 Protection in the case of direct contact	22
5.2.8.1 Protection by means of extra-low voltage with protective separation (SELV- and PELV-system)	22
5.2.8.2 Protection by means of limitation of the discharging energy	22
5.2.8.3 Protection by means of protective impedance	22
5.2.8.4 Protection by using limited voltages in control circuits	23
5.2.8.5 Connectors	23
5.2.9 Protection with regard to indirect contact	23

	Page		Page
5.2.9.1	23	5.2.18.6	47
5.2.9.2	23	5.3	47
5.2.9.3	24		
5.2.9.4	24	5.3.1	47
5.2.9.5	24	5.3.1.1	47
5.2.9.6	24	5.3.1.2	47
5.2.9.7	24	5.3.1.3	47
5.2.9.8	24	5.3.1.4	48
5.2.10	24	5.3.2	48
5.2.11	24	5.3.2.1	48
5.2.11.1	24	5.3.2.2	48
5.2.11.2	25	5.3.2.3	48
5.2.12	26	6	48
5.2.13	27	6.1	48
5.2.14	29	6.1.1	49
5.2.14.1	29	6.1.1.1	49
5.2.14.2	29	6.1.1.2	50
5.2.14.3	29	6.1.2	50
5.2.15	29	6.1.3	50
5.2.15.1	29	6.2	50
5.2.15.2	37	6.2.1	50
5.2.16	37	6.2.2	50
5.2.16.1	38	6.2.2.1	50
5.2.16.2	39	6.2.2.2	50
5.2.16.3	40	6.2.3	51
5.2.17	40	6.2.4	51
5.2.18	44	6.3	51
5.2.18.1	45	6.3.1	51
5.2.18.2	45	6.3.2	51
5.2.18.3	45	6.3.2.1	51
5.2.18.4	46	6.3.2.2	51
5.2.18.5	46	6.3.3	51
		6.3.4	52

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

	Page		Page
9.4.5.2.1	66	A.5.2.9.4	77
9.4.5.2.2	66	A.5.2.11.2	77
9.4.5.2.3	67	A.5.2.13	79
9.4.5.2.4	69	A.5.2.14.1	79
9.4.5.3	69	A.5.2.16	82
9.4.5.4	69	A.5.2.18	83
9.4.5.5	70	A.5.2.18.1	83
9.4.6	70	A.5.2.18.7	84
9.4.6.1	70	A.5.2.18.8	85
9.4.6.2	70	A.5.2.18.9	85
9.4.6.3	70	A.5.2.18.10	85
9.4.7	71	A.5.3	85
Annex A (informative) Additional information	72		
A.2	72	A.5.3.2.4	85
A.4	72		
A.4.4	72	A.6	85
A.4.4.1	73	A.6.1.2	86
A.4.4.1.1	73	A.6.1.3	86
A.4.4.1.2	73	A.6.1.4	86
A.4.4.1.3	73	A.6.2.2.1	86
A.4.4.1.4	74	A.6.3	86
A.4.4.1.5	74	A.6.3.2	87
A.4.4.1.6	74	A.6.3.2.3	87
A.4.7	74	A.6.3.2.4	87
A.5	74	A.6.3.2.5	87
A.5.2.4	74	A.6.3.2.6	88
A.5.2.4.2	74	A.6.3.3	88
A.5.2.4.3	74	A.6.3.5	88
A.5.2.4.4	74	A.6.3.5.1	88
A.5.2.4.5	75	A.6.3.5.2	88
A.5.2.8	75	A.6.3.6	89
A.5.2.8.2	77	A.7	89
A.5.2.8.3	77		
A.5.2.9.2	77		
A.5.2.9.3	77		

	Page		Page
A.7.1.2	89	A.7.2.4.2	94
A.7.1.5	89	A.7.3	94
A.7.1.5.3	89	A.7.3.1	94
A.7.1.5.4	89	A.7.3.2	94
A.7.1.5.5	89	A.7.3.3	95
A.7.1.5.6	90	A.7.3.4	95
A.7.1.5.7	90	A.7.3.5	95
A.7.1.5.8	90	A.7.3.6	95
A.7.1.5.9	90	A.7.3.7	95
A.7.1.6	90	A.8	95
A.7.1.6.1	90	A.8.3.3.1	95
A.7.1.6.3	90	A.9	95
A.7.1.6.4	90	A.9.1.1.1	95
A.7.1.6.5	91	A.9.1.1.5	96
A.7.1.7	91	A.9.4	96
A.7.1.7.2	91	A.9.4.2.3	96
A.7.1.7.7	91	A.9.4.2.4	96
A.7.1.8	91	A.9.4.2.5	96
A.7.1.8.1	91	A.9.4.2.6	96
A.7.1.8.2	91	A.9.4.2.7	96
A.7.1.8.3	91	A.9.4.3.4	96
A.7.1.8.4	91	A.9.4.3.5	96
A.7.1.8.5	91	A.9.4.5.3	96
A.7.1.8.6	91	A.9.4.6.4	96
A.7.1.8.7	91	A.9.4.6.5	96
A.7.1.8.8	92	A.9.4.8	99
A.7.1.9	92	Annex B (informative) Tables and figures	99
A.7.1.9.1	92	Figure 1 — Arrangement of fuses in sub-assemblies and in installations	18
A.7.1.10	92	Figure 2 — Functional summary of protective measures against electric shock	19
A.7.1.10.2	92	Figure 3 — Examples for protection against direct contact	20
A.7.1.10.3	93	Figure 4 — Flow chart leading to requirements when using EE(s) behind an RCD	26
A.7.1.12	93	Figure 5 — Typical waveform for case a) a.c. voltage	27
A.7.1.12.1	93	Figure 6 — Typical waveform for case b) d.c. voltage	27
A.7.1.12.2	93	Figure 7 — Typical waveform for case c) pulsating voltage	28
A.7.2	93		
A.7.2.2	93		
A.7.2.3.5	94		
A.7.2.4	94		
A.7.2.4.1	94		

	Page		Page
Figure 8 — Determination of insulation within a circuit	31	Table 7 — Climatic conditions	49
Figure 9 — Determination of insulation between live parts and accessible surfaces	32	Table 8 — Heating of accessible parts	54
Figure 10 — Determination of insulation between circuits and environment and of insulation between circuits	33	Table 9 — General test conditions	58
Figure 11 — Determination of functional insulation	34	Table 10 — Overview of tests	60
Figure 12 — Determination of basic insulation	35	Table 11 — Dry heat test	62
Figure 13 — Determination of double or reinforced insulation	36	Table 12 — Damp heat test	62
Figure 14 Protective separation (with the respective subclauses in parentheses)	44	Table 13 — Topple test	63
Figure 15 — Clearances and creepage distances for protective separation	46	Table 14 — Vibration test	63
Figure 16 — Voltage test procedures	68	Table 15 — Non-accessibility test	64
Figure A.1 — Examples for protection in the case of direct contact	76	Table 16 — Impulse voltage test	65
Figure A.2 — Fault-current in connections with semiconductor devices.	78	Table 17 — Impulse test voltage	66
Figure A.3 — Planning example for application of RCD Type B	79	Table 18 — A.c. or d.c. insulation test voltage	67
Figure A.4 — Examples of subdivided insulation against accessible surfaces of EE	80	Table 19 — Partial discharge test	69
Figure A.5 — Examples for the insulation of control elements	81	Table 20 — Minimum value of insulation resistance	70
Figure A.6 — Examples for the design of clearances (continued)	82	Table 21 — Short-circuit withstand capability	71
Figure A.7 — Correlation between humidity and temperature of the air	86	Table A.1 — Values of accessible capacitance and charging voltage (threshold of pain)	77
Figure A.8 — Periodical momentary dips of a.c. mains voltage caused by convertors	88	Table A.2 — Maximum concentration of corrosive gases	86
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_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		

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.*