

Telecontrol equipment and systems —

Part 2: Operating conditions —

Section 1. Power supply and electromagnetic compatibility

The European Standard EN 60870-2-1:1996 has the status of a
British Standard

ICS 29.020; 33.200

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PEL/57, Power systems control and associated communications, upon which the following bodies were represented:

- BEAMA Metering Association (BMA)
- Building Automation & Mains Signalling Association (BASMA)
- Electricity Association
- Federation of the Electronics Industry
- GAMBICA
- Institution of Electrical Engineers
- Transmission and Distribution Association (BEAMA Ltd.)

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 December 1996

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Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text on EN 60870-2-1	3
List of references	Inside back cover

National foreword

This British Standard has been prepared by Technical Committee PEL/57 and is the English language version of EN 60870-2-1:1996 *Telecontrol equipment and systems. Part 2: Operating conditions. Section 1: Power supply and electromagnetic compatibility*, published by the European Committee for Electrotechnical Standardization (CENELEC). It is identical with IEC 870-2-1:1995; second edition, published by the International Electrotechnical Commission (IEC).

This British Standard supersedes BS 7404-2.1:1991 which is withdrawn. It implemented HD 546.2.1 S1 which was based on IEC 870-2-1:1987. Other Parts of the IEC 870 series with their corresponding British Standards, which are necessary reading for those developing complete telecontrol systems, are as follows.

IEC publication	Corresponding British Standard
	BS 7404 <i>Telecontrol equipment and systems</i> Part 1 <i>General considerations</i>
IEC 870-1-1:1988	Section 1.1:1991 <i>General principles</i>
IEC 870-1-2:1989	Section 1.2:1991 <i>Guide for specifications</i>
IEC 870-1-3:1990	Section 1.3:1991 <i>Glossary</i>
IEC 870-1-4:1994	Section 1.4:1995 <i>Guide for basic aspects of telecontrol data transmission and organization of standards</i> <i>BS 7404-5 and BS 7404-6</i>
IEC 870-3:1989	Part 3:1991 <i>Specification for interfaces (electrical characteristics)</i> Implements HD 546.3 S1:1990
IEC 870-4:1990	Part 4:1991 <i>Specification for performance</i> Implements HD 546.4 S1:1992 <i>BS EN 60870 Telecontrol equipment and systems</i> Part 5 <i>Transmission protocols</i>
IEC 870-5-1:1990	Section 5.1:1994 <i>Transmission frame formats</i>
IEC 870-5-2:1992	Section 5.2:1994 <i>Link transmission procedures</i>
IEC 870-5-3:1992	Section 5.3:1992 <i>Specification for general structure of application data</i>
IEC 870-5-4:1993	Section 5.4:1994 <i>Definition and coding of application information elements</i>
IEC 870-5-5:1995	Section 5.5:1996 <i>Basic application functions</i>
IEC 870-5-101:1995	Section 5.101:1996 <i>Companion standard for basic telecontrol tasks</i> Part 6 <i>Telecontrol protocols compatible with ISO standards and ITU-T recommendations</i>
IEC 870-6-2:1995	Section 6.2:1996 <i>Use of basic standards (OSI layers 1-4)</i>
IEC 870-6-601:1994	Section 6.601:1995 <i>Functional profile for providing connection-oriented transport service in end system connected via permanent access to a packet switched data network</i>
Cross-references	
Publication referred to	Corresponding British Standard
HD 472 S1:1989 (IEC 38 (mod) 1983)	BS 7697:1993 <i>Nominal voltages for low voltage public electricity supply system</i>

Publication referred to	Corresponding British Standard
IEC 50(161):1990	BS 4727 <i>Glossary of electrotechnical, power, telecommunication, electronics, lighting and colour terms</i> Part 1 <i>Terms common to power, telecommunications and electronics</i> Group 09:1991 <i>Electromagnetic compatibility</i>
HD 588.1 S1:1991 (IEC 60 series)	BS 923 <i>Guide on high-voltage testing techniques</i> Part 1:1990 <i>General</i>
EN 60060-2 (IEC 602)	BS EN 60060 <i>High-voltage test techniques</i> Part 2:1995 <i>Measuring systems</i>
IEC 664-1:1992	BS 7822 <i>Insulation coordination for equipment within low-voltage systems</i> Part 1:1995 <i>Principles, requirements and tests</i> BS EN 61000 <i>Electromagnetic compatibility (EMC)</i> Part 3 <i>Limits</i>
EN 61000-3-2:1995 (IEC 1000-3-2:1995)	Section 3.2:1995 <i>Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)</i>
EN 61000-3-3:1995 (IEC 1000-3-3:1994)	Section 3.3:1995 <i>Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to and including 16 A.</i> Part 4 <i>Testing and measurement techniques</i>
EN 61000-4-1:1994 (IEC 1000-4-1:1992)	Section 4.1:1994 <i>Overview of immunity tests. Basic EMC publication</i>
EN 61000-4-2:1995 (IEC 1000-4-2:1995)	Section 4.2:1995 <i>Electrostatic discharge immunity tests Basic EMC publication</i>
EN 61000-4-4:1995 (IEC 1000-44:1995)	Section 4.4:1995 <i>Electrical fast transient / burst immunity test. Basic EMC publication</i>
EN 61000-4-5:1995 (IEC 1000-4-5:1995)	Section 4.5:1995 <i>Surge immunity test</i>
EN 61000-4-8:1993 (IEC 1000-4-8:1993)	Section 4.8:1994 <i>Power frequency magnetic field immunity test. Basic EMC publication</i>
EN 61000-4-9:1993 (IEC 1000-4-9:1993)	Section 4.9:1994 <i>Pulse magnetic field immunity test. Basic EMC publication</i>
EN 61000-4-10:1993 (IEC 1000-4-10:1993)	Section 4.10:1994 <i>Damped oscillatory magnetic field immunity test. Basic EMC publication</i>
EN 61000-4-11:1994 (IEC 1000-4-11:1994)	Section 4.11:1994 <i>Voltage dips, short interruptions and voltage variations immunity tests</i>
EN 55022:1994 (CISPR 22:1993)	BS EN 55022:1995 <i>Limits and methods of measurement of radio disturbance characteristics of information technology equipment</i>

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, the EN title page, pages 2 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Descriptors: Telecontrol, electric power supply, electromagnetic compatibility, earthing, operating condition, environmental condition, immunity, emission, harmonic content, insulation withstand voltage, data transmission, teleprotection, distribution line carrier system, distribution automation system

English version

Telecontrol equipment and systems
Part 2: Operating conditions
Section 1: Power supply and electromagnetic compatibility
(IEC 870-2-1:1995)

Matériels et systèmes de téléconduite
Partie 2: Conditions de fonctionnement
Section 1: Alimentation et compatibilité
électromagnétique
(CEI 870-2-1:1995)

Fernwirkeinrichtungen und -systeme
Teil 2: Betriebsbedingungen
Hauptabschnitt 1: Stromversorgung und
elektromagnetische Verträglichkeit
(IEC 870-2-1:1995)

This European Standard was approved by CENELEC on 1995-11-28. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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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

The text of document 57/217/FDIS, future edition 2 of IEC 870-2-1, prepared by IEC TC 57, Power system control and associated communications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60870-2-1 on 1995-11-28.

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) 1996-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-09-01

Annexes designated “normative” are part of the body of the standard. In this standard, annex ZA is normative. Annex ZA has been added by CENELEC.

Contents

	Page		Page
Introduction	3	Table 1 — AC nominal voltages (Volts r.m.s.: 50 Hz or 60 Hz)	5
1 Scope and object	3	Table 2 — AC voltage tolerance classes	5
2 Normative references	3	Table 3 — Frequency tolerances	5
3 Definitions	4	Table 4 — Harmonic level classes	5
4 Power supply	5	Table 5 — DC nominal voltages (V)	5
4.1 General	5	Table 6 — DC voltage tolerance classes	6
4.2 AC supply	5	Table 7 — DC supply earthing condition classes	6
4.2.1 AC voltage tolerances	5	Table 8 — Ripple classes	6
4.2.2 Frequency tolerances	5	Table 9 — List of immunity tests for electronic equipment considered by IEC basic publications and applicability to the various components of the systems considered in this section.	8
4.2.3 Harmonic content	5	Table 10 — List of emission tests for electronic equipment considered by IEC basic publications and applicability to the various components of the systems considered in this section	9
4.3 DC supply	5	Table 11 — Low frequency disturbances: main parameters for the immunity tests on the various components of the systems, according to the applicability defined in Table 9	10
4.3.1 DC voltage tolerances	6	Table 12 — Conducted transients and HF disturbances: main parameters for the immunity tests on the various components of the systems, according to the applicability defined in Table 9	11
4.3.2 Earthing arrangements for d.c. supply	6	Table 13 — Electrostatic discharge: main parameters for the immunity tests on the various components of the systems, according to the applicability defined in Table 9	12
4.3.3 Voltage ripple of the d.c. supply	6	Table 14 — Magnetic fields: main parameters for the immunity tests on the various components of the systems, according to the applicability defined in Table 9	13
5 Electromagnetic compatibility	6	Table 15 — Radiated electromagnetic field: main parameters for the immunity tests on the various components of the systems, according to the applicability defined in Table 9	14
5.1 General	6	Table 16 — Evaluation criteria for test results	14
5.2 Immunity tests	6	Table 17 — Conducted and radiated disturbances: main parameters for the emission tests on the various components of the systems, according to the applicability defined in Table 10	15
5.3 Acceptance criteria for immunity tests	7	Table 18 — Withstand voltage classes	16
5.4 Emission tests	7		
5.5 Protection techniques and installation guidelines	7		
6 Insulation withstand voltages	16		
Annex ZA (normative) Normative references to international publications with their corresponding European publications	17		