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IEC 60870-2-1:1995

Australian Standard®

Telecontrol equipment and systems

Part 2.1: Operating conditions—Power supply and electromagnetic compatibility

[IEC title: Telecontrol equipment and systems, Part 2: Operating conditions—Section 1: Power supply and electromagnetic compatibility]

This Australian Standard was prepared by Committee IT/24, Supervisory Control and Data Acquisition. It was approved on behalf of the Council of Standards Australia on 5 January 1998 and published on 5 April 1998.

The following interests are represented on Committee IT/24:

Association of Consulting Engineers Australia

Australasian Railway Association

Australian Communications Authority

Australian Electrical and Electronic Manufacturers Association

Australian Fire Authorities Council

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PREFACE

This Standard was prepared by the Standards Australia Committee IT/24, Supervisory Control and Data Acquisition.

The Standard is identical with and has been reproduced from IEC 60870-2-1:1995, *Telecontrol equipment and systems*, Part 2: *Operating conditions*, Section 1: *Power supply and electromagnetic compatibility*.

IEC has decided to apply a new numbering system, the 60000 series, to all its existing and future publications, including amendments to existing Standards. As a consequence, IEC has modified the bibliographic references in its databases to accord with the new numbering system. All IEC publications issued since the beginning of 1997 will carry references in terms of the 60000 series numbering. Publications printed earlier than 1997 will continue to carry the old series of numbers. For example, a reference to the IEC 60870 series of Standards will be to IEC 870 if the current edition of the Standard was printed prior to 1997.

This Standard is identical with a pre-1997 document therefore it uses the old series of numbers.

The objective of this Standard is to provide manufacturers and users of telecontrol equipment and systems with power supply and EMC specifications in order to ensure optimal performance, under all conditions, in Australia.

As this Standard is reproduced from an international Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

The references to international Standards should be replaced by references to the following Australian Standards:

Reference to International Standard or other Publication		*Australian Standard*	
IEC		AS	
38	IEC standard voltages	—	
50	International Electrotechnical Vocabulary (IEV)		
50(161)	Chapter 161: Electromagnetic compatibility	—	
60	High-voltage test techniques	1931	High-voltage test techniques (all parts)
664	Insulation coordination for equipment within low-voltage systems	—	
664-1	Part 1: Principles, requirements and tests	—	
1000	Electromagnetic compatibility (EMC)		

IEC		AS
1000-3-2	Part 3: Limits—Section 2: Limits for harmonic current emissions (equipment input current less than or equal to 16 A per phase)	—
1000-3-3	Part 3: Limits—Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current less than or equal to 16 A	—
1000-4-1	Part 4: Testing and measurement techniques—Section 1: Overview of immunity tests—Basic EMC Publication	—
1000-4-2	Part 4: Testing and measurement techniques—Section 2: Electrostatic discharge immunity test—Basic EMC Publication	—
1000-4-3	Part 4: Testing and measurement techniques—Section 3: Radiated, radio-frequency, electromagnetic field immunity test	—
1000-4-4	Part 4: Testing and measurement techniques—Section 4: Electrical fast transient/burst immunity test—Basic EMC Publication	—
1000-4-5	Part 4: Testing and measurement techniques—Section 5: Surge immunity test—Basic EMC Publication	—
1000-4-6(DIS)	Part 4: Testing and measurement techniques—Section 6: Immunity to conducted disturbances, induced by radio-frequency fields—Basic EMC Publication	—
1000-4-8	Part 4: Testing and measurement techniques—Section 8: Power frequency magnetic field immunity test—Basic EMC Publication	—
1000-4-9	Part 4: Testing and measurement techniques—Section 9: Pulse magnetic field immunity test—Basic EMC Publication	—
1000-4-10	Part 4: Testing and measurement techniques—Section 10: Damped oscillatory magnetic field immunity test—Basic EMC Publication	—

IEC		AS
1000-4-11	Part 4: Testing and measurement techniques—Section 11: Voltage dips, short interruptions and voltage variations immunity test—Basic EMC Publication	—
CISPR 22	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	—
ITUT Rec. P.53	Psophometer (apparatus for the objective measurement of circuit noise)	—

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NOTES

AUSTRALIAN STANDARD

Telecontrol equipment and systems

Part 2.1:
Operating conditions—Power supply and electromagnetic compatibility

1 Scope and object

This section of IEC 870-2 applies to telecontrol equipment and systems with coded bit serial data transmission for monitoring and control of geographically widespread processes.

It is also a reference document for teleprotection equipment and systems and for equipment included in a distribution line carrier (DLC) system supporting a distribution automation system (DAS).

This standard specifies, with reference to the various components of the systems defined above:

1) the characteristics of the power supply to which these components are connected during the normal operation;

2) the EMC minimum requirements, expressed in terms of immunity and emission test levels.

With reference to EMC, the test levels have been selected among the classes established by the IEC basic publications on EMC, taking into account the particular environmental conditions under which the various types of equipment considered by this section operate; test procedures, test circuits and acceptance criteria are briefly indicated, making reference for detailed information to the IEC basic publications on the various subjects; reference is also made to basic publications on protection techniques and installation practices.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 870-2. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 870-2 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 38: 1983, *IEC standard voltages*

IEC 50(161) 1990, *International Electrotechnical Vocabulary (IEV) — Chapter 161: Electromagnetic compatibility*

IEC 60: *High-voltage test techniques*

IEC 664-1: 1992, *Insulation coordination for equipment within low-voltage systems — Part 1: Principles, requirements and tests*