



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 61131-2:2007

Programmable controllers - Part 2: Equipment requirements and tests

Speicherprogrammierbare Steuerungen -
Teil 2: Betriebsmittelanforderungen und
Prüfungen

Automates programmables - Partie 2:
Spécifications et essais des équipements

09/2007



National Foreword

This European Standard EN 61131-2:2007 was adopted as Luxembourgish Standard ILNAS-EN 61131-2:2007.

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- Participate in the design of standards
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English version

**Programmable controllers -
Part 2: Equipment requirements and tests
(IEC 61131-2:2007)**

Automates programmables -
Partie 2: Spécifications
et essais des équipements
(CEI 61131-2:2007)

Speicherprogrammierbare Steuerungen -
Teil 2: Betriebsmittelanforderungen
und Prüfungen
(IEC 61131-2:2007)

This European Standard was approved by CENELEC on 2007-08-01. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 65B/623/FDIS, future edition 3 of IEC 61131-2, prepared by SC 65B, Devices & process analysis, of IEC TC 65, Industrial-process measurement, control and automation, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61131-2 on 2007-08-01.

This European Standard supersedes EN 61131-2:2003.

EN 61131-2:2007 includes the following significant technical changes with respect to EN 61131-2:2003.

- a) DC power port requirements have been moved from Clause 8 to Clause 5.
- b) Correction of the following tests of Clause 6:
 - voltage range test;
 - fast supply voltage variation test;
 - slow supply voltage variation test;
 - gradual shut-down/start-up test.
- c) Change of EMC requirements in Clause 8:
 - requirements for radiofrequency interference in Table 33 changed from 3 V to 10 V;
 - for Zone B equipment;
 - reference to EMC basic standards with the last version;
 - reference to generic standards 61000-6-x;
 - cable length aligned to generic standards.
- d) Correction of the following tests in Clause 9:
 - voltage dips and interruptions – power port type tests and verifications.
- e) New organization of Clause 11:
 - equipment types and protection;
 - open PLC-system equipment;
 - enclosed PLC-system equipment:
 - Class I equipment,
 - Class II equipment,
 - Class III equipment;
 - protection against electric shock;
 - definition of secondary circuits which do not pose a risk of electric shock:
 - Class 2 circuit,
 - limited voltage/current circuit,
 - limited voltage circuit,
 - limited energy circuit ≤ 30 V a.c. or 42,2 V peak,
 - limited impedance circuit;
 - protection against the spread of fire within limited power circuits;
 - protective earthing requirements for enclosed equipment;
 - minor improvements in different subclauses;
 - impulse test only for verification of clearances.

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) 2008-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2010-08-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives EMC (89/336/EEC) and EMC2 (2004/108/EC). See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61131-2:2007 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60112	NOTE	Harmonized as EN 60112:2003 (not modified).
IEC 60445	NOTE	Harmonized as EN 60445:2007 (not modified).
IEC 61140	NOTE	Harmonized as EN 61140:2002 (not modified).
IEC 62079	NOTE	Harmonized as EN 62079:2001 (not modified).

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060-1 + corr. March corr. March	1989 1990 1992	High-voltage test techniques - Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	1974	Environmental testing - Part 2: Tests - Tests B: Dry heat	EN 60068-2-2 ¹⁾	1993
IEC 60068-2-6 + corr. March	1995 1995	Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995
IEC 60068-2-14	1984	Environmental testing - Part 2: Tests - Test N: Change of temperature	EN 60068-2-14 ²⁾	1999
IEC 60068-2-27	1987	Basic environmental testing procedures - Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993
IEC 60068-2-30	2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005
IEC 60068-2-31	1969	Basic environmental testing procedures - Part 2: Tests - Test Ec: Drop and topple, primarily for equipment-type specimens	EN 60068-2-31 ³⁾	1993
IEC 60068-2-32	1975	Environmental testing - Part 2: Tests -Test Ed: Free fall	EN 60068-2-32 ⁴⁾	1993
IEC 60364-1 (mod)	2005	Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions	prHD 60364-1	200X
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41 + corr. July	2007 2007
IEC 60417	Data- base	Graphical symbols for use on equipment	-	-

¹⁾ EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

²⁾ EN 60068-2-14 includes A1:1986 to IEC 60068-2-14.

³⁾ EN 60068-2-31 includes A1:1982 to IEC 60068-2-31.

⁴⁾ EN 60068-2-32 includes A2:1990 to IEC 60068-2-32.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
A1	1999		+ corr. May A1	1993 2000
IEC 60664-1	1992	Insulation coordination for equipment within low-voltage systems -		
+ A1	2000			
+ A2	2002	Part 1: Principles, requirements and tests	EN 60664-1 ⁵⁾	2003
IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003
IEC 60695-2-11	2000	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001
IEC 60695-11-10	1999	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	1999
IEC 60947-5-1	2003	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1 + corr. July	2004 2005
IEC 60947-5-2	1997	Low-voltage switchgear and controlgear - Part 5-2: Control circuit devices and switching elements - Proximity switches	EN 60947-5-2	1998
A1	1999		A1	1999
A2	2003		A2	2004
IEC 60947-7-1	2002	Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	EN 60947-7-1	2002
IEC 60950-1 (mod)	2001	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1 ⁶⁾ + corr. August + A11	2001 2007 2004
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
IEC 61000-4-4	2004	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2004
IEC 61000-4-5	2005	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006

⁵⁾ EN 60664-1 is superseded by EN 60664-1:2007, which is based on IEC 60664-1:2007.

⁶⁾ EN 60950-1 is superseded by EN 60950-1:2006, which is based on IEC 60950-1:2005 (mod).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-6	2003	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6 ⁷⁾ + corr. August	2007 2007
IEC 61000-4-8	1993	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	1993
IEC 61000-4-11	2004	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004
IEC 61000-4-18	2006	Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Oscillatory wave immunity test	EN 61000-4-18	2007
IEC 61000-4-29	2000	Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	EN 61000-4-29	2000
IEC 61000-6-1	2005	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments	EN 61000-6-1	2007
IEC 61000-6-2	2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments	EN 61000-6-2 + corr. September	2005 2005
IEC 61000-6-4	2006	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments	EN 61000-6-4	2007
IEC 61010-1	2001	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	EN 61010-1 + corr. June	2001 2002
IEC 61131-1	2003	Programmable controllers - Part 1: General information	EN 61131-1	2003
IEC 61131-3	2003	Programmable controllers - Part 3: Programming languages	EN 61131-3	2003
IEC/TR 61131-4	2004	Programmable controllers - Part 4: User guidelines	-	-
CISPR 14-1	2005	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2006

⁷⁾ EN 61000-4-6 includes A1:2004 + A2:2006 to IEC 61000-4-6.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
CISPR 16-1-2	2003	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Conducted disturbances	EN 55016-1-2	2004
CISPR 16-1-4 A1	2003 2004	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-4: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Radiated disturbances	EN 55016-1-4 ⁸⁾ A1	2004 2005
CISPR 16-2-1 A1	2003 2005	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements	EN 55016-2-1 A1	2004 2005
CISPR 16-2-3	2006	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements	EN 55016-2-3	2006

⁸⁾ EN 55016-1-4 is superseded by EN 55016-1-4:2007, which is based on CISPR 16-1-4:2007.