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NSAI Standards

Irish Standard
I.S. EN 61881-3:2012

Railway applications - Rolling stock equipment - Capacitors for power electronics -- Part 3: Electric double-layer capacitors (IEC 61881-3:2012 (EQV))

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I.S. EN 61881-3:2012

Incorporating amendments/corrigenda issued since publication:
EN 61881-3:2012/A1:2013

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61881-3/A1

November 2013

ICS 45.060

English version

Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 3: Electric double-layer capacitors

(IEC 61881-3:2012/A1:2013)

Applications ferroviaires - Matériel roulant - Condensateurs pour électronique de puissance - Partie 3: Condensateurs électriques à double couche (CEI 61881-3:2012/A1:2013)

Bahnanwendungen - Betriebsmittel auf Bahnfahrzeugen - Kondensatoren für Leistungselektronik - Teil 3: Doppelschichtkondensatoren (IEC 61881-3:2012/A1:2013)

This amendment A1 modifies the European Standard EN 61881-3:2012; it was approved by CENELEC on 2013-10-21. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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Ref. No. EN 61881-3:2012/A1:2013 E

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Foreword

The text of document 9/1819/FDIS, future IEC 61881-3:2012/A1, prepared by IEC/TC 9 "Electrical equipment and systems for railways" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61881-3:2012/A1:2013.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-07-21
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In the Bibliography of EN 61881-3:2012, the following note has to be **added** for the standard indicated:

IEC 60529	NOTE	Harmonized as EN 60529.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61881-3

September 2012

ICS 45.060

English version

Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 3: Electric double-layer capacitors

(IEC 61881-3:2012)

Applications ferroviaires - Matériel roulant - Condensateurs pour électronique de puissance - Partie 3: Condensateurs électriques à double couche (CEI 61881-3:2012)

Bahnanwendungen - Betriebsmittel auf Bahnfahrzeugen - Kondensatoren für Leistungselektronik - Teil 3: Doppelschichtkondensatoren (IEC 61881-3:2012)

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Foreword

The text of document 9/1680/FDIS, future edition 1 of IEC 61881-3, prepared by IEC/TC 9, "Electrical equipment and systems for railways" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61881-3:2012.

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IEC 60077-1:1999	NOTE	Harmonized as EN 60077-1:2002 (modified).
IEC 60077-2:1999	NOTE	Harmonized as EN 60077-2:2002 (modified).
IEC 60384-1:2008	NOTE	Harmonized as EN 60384-1:2009 (not modified).
IEC 60664-1:2007	NOTE	Harmonized as EN 60664-1:2007 (not modified).
IEC 61287-1:2005	NOTE	Harmonized as EN 61287-1:2006 (not modified).
IEC 61881-1:2010	NOTE	Harmonized as EN 61881-1:2011 (not modified).
IEC 61881-2	NOTE	Harmonized as EN 61881-2.

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Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

Publication	Year	Title	EN/HD	Year
IEC 60068-1 + corr. October + A1	1988 1988 1992	Environmental testing - Part 1: General and guidance	EN 60068-1 -[1)]	1994 -
IEC 60068-2-14	2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-17	1994	Environmental testing - Part 2: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-20	-	Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	EN 60068-2-20	-
IEC 60068-2-21	-	Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60571 +A1	1998 2006	Electronic equipment used on rail vehicles	-	-
IEC 60721-3-5	-	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 5: Ground vehicle installations	EN 60721-3-5	-
IEC 61373 + corr. October	2010 2011	Railway applications - Rolling stock equipment - Shock and vibration tests	EN 61373	2010
IEC 62236-3-2	-	Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus	-	-
IEC 62391-1	2006	Fixed electric double-layer capacitors for use in electronic equipment - Part 1: Generic specification	EN 62391-1	2006
IEC 62391-2	2006	Fixed electric double-layer capacitors for use in electronic equipment - Part 2: Sectional specification - Electric double-layer capacitors for power application	EN 62391-2	2006
IEC 62497-1	-	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment	--	-

[1)] EN 60068-1 includes A1 to IEC 60068-1+ corr. October .

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Publication	Year	Title	EN/HD	Year
IEC 62498-1 + corr. November	2010 2010	Railway applications - Environmental conditions for equipment - Part 1: Equipment on board rolling stock	- 	-
IEC 62576	2009	Electric double-layer capacitors for use in hybrid electric vehicles - Test methods for electrical characteristics	EN 62576	2010

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RAILWAY APPLICATIONS – ROLLING STOCK EQUIPMENT – CAPACITORS FOR POWER ELECTRONICS –

Part 3: Electric double-layer capacitors

FOREWORD

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International Standard IEC 61881-3 has been prepared by subcommittee 9: Electrical equipment and systems for railways.

The text of this standard is based on the following documents:

FDIS	Report on voting
9/1680/FDIS	9/1708/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 61881 series, under the general title *Railway applications – Rolling stock equipment – Capacitors for power electronics*, can be found on the IEC website.

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The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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RAILWAY APPLICATIONS – ROLLING STOCK EQUIPMENT – CAPACITORS FOR POWER ELECTRONICS –

Part 3: Electric double-layer capacitors

1 Scope

This part of IEC 61881 applies to d.c. electric double-layer capacitors (cell, module and bank) for power electronics intended to be used on rolling stock.

This standard specifies quality requirements and tests, safety requirements, and describes installation and operation information.

NOTE Example of the application for capacitors specified in this Standard; d.c. energy storage, etc.

Capacitors not covered by this Standard:

– IEC 61881-1: Paper/plastic film capacitors;
– IEC 61881-2: Aluminium electrolytic capacitors with non-solid electrolyte.

Guidance for installation and operation is given in Clause 9.

2 Normative references

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

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*
and Amendment 1:1992

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-17:1994, *Environmental testing – Part 2-17: Tests. Test Q: Sealing*

IEC 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-21, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60571:1998, *Electronic equipment used on rail vehicles*
and Amendment 1:2006

IEC 60721-3-5, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 5: Ground vehicle installations*

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