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Irish Standard
I.S. EN 61788-14:2010

Superconductivity -- Part 14: Superconducting power devices - General requirements for characteristic tests of current leads designed for powering superconducting devices (IEC 61788-14:2010 (EQV))

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61788-14

July 2010

ICS 29.050

English version

Superconductivity - Part 14: Superconducting power devices - General requirements for characteristic tests of current leads designed for powering superconducting devices

(IEC 61788-14:2010)

Supraconductivité –
Partie 14 : Dispositifs de puissance supraconducteurs -
Exigences générales concernant les essais caractéristiques des broches de courant conçus pour l'alimentation des dispositifs supraconducteurs
(CEI 61788-14:2010)

Supraleitfähigkeit –
Teil 14: Supraleitende Betriebsmittel – Allgemeine Anforderungen an charakteristische Prüfverfahren für Stromzuführungen für die Versorgung supraleitender Geräte
(IEC 61788-14:2010)

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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 90/244/FDIS, future edition 1 of IEC 61788-14, prepared by IEC TC 90, Superconductivity, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61788-14 on 2010-07-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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)	2011-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61788-14:2010 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 61788-3:2006	NOTE	Harmonized as EN 61788-3:2006 (not modified).
IEC 61788-10:2006	NOTE	Harmonized as EN 61788-10:2006 (not modified).

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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.

Publication	Year	Title	EN/HD	Year
IEC 60050-815	2000	International Electrotechnical Vocabulary (IEV) - Part 815: Superconductivity	-	-
IEC 60071-1	-	Insulation co-ordination - Part 1: Definitions, principles and rules	EN 60071-1	-
IEC 60137	-	Insulated bushings for alternating voltages above 1 000 V	EN 60137	-

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms and definitions 6
4 Principles 7
5 Characteristic test items 8
6 Characteristic test methods 9
6.1 Structure inspection 9
6.2 Stress/strain effect test 10
6.3 Thermal property test 10
6.4 Rated current-carrying test 11
6.5 Contact resistance test 12
6.6 Voltage drop test 12
6.7 High voltage test 12
6.8 Pressure drop test 13
6.9 Leak tightness test 13
6.10 Safety margin test 14
7 Reporting 15
8 Precautions 15
Annex A (informative) Supplementary information relating to Clauses 1 to 8 16
Annex B (informative) Typical current leads 18
Annex C (informative) Explanation figures to facilitate understanding of test methods 22
Annex D (informative) Test items and methods for a HTS component 24
Bibliography 26

Figure B.1 – Schematic diagram of self-cooled normal conducting current leads 18
Figure B.2 – Schematic diagram of forced flow cooled normal conducting current leads 19
Figure B.3 – Schematic diagram of current leads composed of forced flow cooled normal conducting section and HTS section in vacuum environment 19
Figure B.4 – Schematic diagram of current leads composed of forced flow cooled normal conducting section and HTS section in GHe environment 20
Figure B.5 – Schematic diagram of current leads composed of LN_2/GN_2/GHe cooled normal conducting section and self-sufficient evaporated helium cooled HTS section 20
Figure B.6 – Schematic diagram of current leads composed of conduction cooled normal conducting section and HTS section 21
Figure C.1 – Schematic drawing of a temperature profile during the rated current-carrying test 22
Figure C.2 – Schematic drawing of a pressure dependency of the breakdown voltage in the Paschen tightness test 22
Figure C.3 – Schematic drawing of a time dependency of the voltage rise at the quench test 23

Table 1 – Characteristic test items and test execution stages for current leads 9
Table D.1 – Characteristic test items for a HTS component 24

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SUPERCONDUCTIVITY –

Part 14: Superconducting power devices – General requirements for characteristic tests of current leads designed for powering superconducting devices

FOREWORD

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International Standard IEC 61788-14 has been prepared by IEC technical committee 90: Superconductivity.

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

FDIS	Report on voting
90/244/FDIS	90/250/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 the IEC 61788 series, published under the general title *Superconductivity,* 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
- amended.

A bilingual version of this standard may be issued at a later date.

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INTRODUCTION

Current leads are indispensable components of superconducting devices in practical uses such as MRI diagnostic equipment, NMR spectrometers, single crystal growth devices, SMES, particle accelerators such as Tevatron, HERA, RHIC and LHC, experimental test instruments for nuclear fusion reactors, such as ToreSupra, TRIAM, LHD, EAST, KSTAR, W7-X, JT-60SA and ITER, etc., and of advanced superconducting devices in the near future in practical uses such as magnetic levitated trains, superconducting fault current limiters, superconducting transformers, etc.

The major functions of current leads are to power high currents into superconducting devices and to minimize the overall heat load, including heat leakage from room temperature to cryogenic temperature and Joule heating through current leads. For this purpose, current leads are dramatically effective for lowering the overall heat load to use the high temperature superconducting component as a part of the current leads.

On the other hand, the current lead technologies applied to superconducting devices depend on each application, as well as on the manufacturer's experience and accumulated know-how. Due to their use as component parts, it is difficult to judge the compatibility, flexibility between devices, convenience, overall economical efficiency, etc of current leads. This may impede progress in the growth and development of superconducting equipment technology and its application to commercial activities, which is a cause for concern.

Consequently, it is judged industrially effective to clarify the definition of current leads to be applied to superconducting devices and to standardize the common characteristic test methods in a series of general rules.

SAI GLOBAL

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