SLOVENSKI STANDARD
SIST EN 61788-11:2011

01-oktober-2011

Superprevodnost - 11. del: Meritve razmerja preostale upornosti - Preostala upornost za superprevodnike iz kompozita Nb3Sn

Superconductivity - Part 11: Residual resistance ratio measurment - Residual resistance ratio of Nb3Sn composite superconductors

Supraconductivité - Partie 11: Mesures de résistance résiduelle - Rapport de résistance résiduelle des supraconducteurs composites de Nb3Sn

Ta slovenski standard je istoveten z: **EN 61788-11:2011**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
29.050	Superprevodnost in prevodni materiali	Superconductivity and conducting materials

SIST EN 61788-11:2011 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61788-11

August 2011

ICS 17.220; 29.050

Supersedes EN 61788-11:2003

English version

Superconductivity - Part 11: Residual resistance ratio measurement - Residual resistance ratio of Nb_3Sn composite superconductors

(IEC 61788-11:2011)

Supraconductivité - Partie 11: Mesure du rapport de résistance résiduelle - Rapport de résistance résiduelle des supraconducteurs composites de Nb_3Sn (CEI 61788-11:2011)

Supraleitfähigkeit - Teil 11: Messung des Restwiderstandsverhältnisses - Restwiderstandsverhältnis von Nb_3Sn-Verbundsupraleitern (IEC 61788-11:2011)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 90/268/FDIS, future edition 2 of IEC 61788-11, prepared by IEC TC 90, Superconductivity was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61788-11:2011.

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)	2012-05-15
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2014-08-15

This document supersedes EN 61788-11:2003.

The main revisions are the addition of two new annexes "Uncertainty considerations" (Annex B) and "Uncertainty evaluation in test method of RRR for Nb_3Sn" (Annex C).

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Endorsement notice

The text of the International Standard IEC 61788-11:2011 was approved by CENELEC as a European Standard without any modification.

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	-	International Electrotechnical Vocabulary (IEV) - Part 815: Superconductivity	-	-

IEC 61788-11

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Superconductivity –
Part 11: Residual resistance ratio measurement – Residual resistance ratio of Nb_3Sn composite superconductors

Supraconductivité –
Partie 11: Mesure du rapport de résistance résiduelle – Rapport de résistance résiduelle des supraconducteurs composites de Nb_3Sn

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SUPERCONDUCTIVITY –

Part 11: Residual resistance ratio measurement – Residual resistance ratio of Nb_3Sn composite superconductors

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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International Standard IEC 61788-11 has been prepared by IEC Technical Committee 90: Superconductivity.

This second edition cancels and replaces the first edition published in 2003. It constitutes a technical revision. The main revisions are the addition of two new annexes, "Uncertainty considerations" (Annex B) and "Uncertainty evaluation in test method of RRR for Nb_3Sn" (Annex C).

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

FDIS	Report on voting
90/268/FDIS	90/279/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.

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.

INTRODUCTION

Copper or aluminium is used as stabilizer material in multifilamentary Nb_3Sn superconductors and works as an electrical shunt when the superconductivity is interrupted. It also contributes to recovery of the superconductivity by conducting the heat generated in the superconductor to the surrounding coolant. The resistivity of copper used in the composite superconductor in the cryogenic temperature region is an important quantity which influences the stability of the superconductor. The residual resistance ratio is defined as a ratio of the resistance of the superconductor at room temperature to that just above the superconducting transition.

In this International Standard, the test method for the residual resistance ratio of Nb_3Sn composite superconductors is described. The curve method is employed for the measurement of the resistance just above the superconducting transition. Other methods are described in Clause A.3.