

Superconductivity —

Part 11: Residual resistance ratio measurement — Residual resistance ratio of Nb₃Sn composite superconductors

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National foreword

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Part 11: Residual resistance ratio measurement -
Residual resistance ratio of Nb₃Sn composite superconductors
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Supraconductivité
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de résistance résiduelle -
Rapport de résistance résiduelle
des supraconducteurs composites
de Nb₃Sn
(CEI 61788-11:2003)

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Teil 11: Messung des
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Restwiderstandsverhältnis von
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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

The text of document 90/131/FDIS, future edition 1 of IEC 61788-11, prepared by IEC TC 90, Superconductivity, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61788-11 on 2003-03-01.

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- latest date by which the national standards conflicting
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Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61788-11:2003 was approved by CENELEC as a European Standard without any modification.

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INTRODUCTION

Copper or aluminium is used as stabilizer material in multifilamentary Nb₃Sn 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 Nb₃Sn 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.2.