

Superconductivity - Part 4: Residual resistance ratio
measurement - Residual resistance ratio of Nb-Ti and
Nb₃Sn composite superconductors

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English Version

**Superconductivity - Part 4: Residual resistance ratio
measurement - Residual resistance ratio of Nb-Ti and Nb₃Sn
composite superconductors
(IEC 61788-4:2016)**

Supraconductivité - Partie 4: Mesurage du rapport de
résistance résiduelle - Rapport de résistance résiduelle des
composites supraconducteurs de Nb-Ti et de Nb₃Sn
(IEC 61788-4:2016)

Supraleitfähigkeit - Teil 4: Messung des
Restwiderstandsverhältnisses - Restwiderstandsverhältnis
von Nb-Ti und Nb₃Sn Verbundsupraleitern
(IEC 61788-4:2016)

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

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European foreword

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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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-815	-	International Electrotechnical Vocabulary- (IEV) -- Part 815: Superconductivity		-

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INTRODUCTION

Copper, Cu/Cu-Ni or aluminium is used as matrix material in Nb-Ti and Nb₃Sn composite superconductors and works as an electrical shunt when the superconductivity is interrupted. It also contributes to recovery of the superconductivity by conducting heat generated in the superconductor to the surrounding coolant. The cryogenic-temperature resistivity of copper is an important quantity, which influences the stability and AC losses 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.

This part of IEC 61788 specifies the test method for residual resistance ratio of Nb-Ti and Nb₃Sn composite superconductors. The curve method is employed for the measurement of the resistance just above the superconducting transition. Other methods are described in A.3.