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Standards

Irish Standard  
I.S. EN IEC 62812:2019

# Low resistance measurements - Methods and guidance

**I.S. EN IEC 62812:2019**

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## National Foreword

I.S. EN IEC 62812:2019 is the adopted Irish version of the European Document EN IEC 62812:2019, Low resistance measurements - Methods and guidance

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EUROPEAN STANDARD

**EN IEC 62812**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2019

ICS 31.040.01

English Version

## Low resistance measurements - Methods and guidance (IEC 62812:2019)

Mesures de faibles résistances - Méthodes et  
recommandations  
(IEC 62812:2019)

Messung niederohmiger Widerstände - Verfahren und  
Leitfaden  
(IEC 62812:2019)

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Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 62812:2019 (E)****European foreword**

The text of document 40/2665/FDIS, future edition 1 of IEC 62812, prepared by IEC/TC 40 "Capacitors and resistors for electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62812:2019.

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) 2020-03-06
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-06-06

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60115-2	NOTE	Harmonized as EN 60115-2
IEC 60115-8	NOTE	Harmonized as EN 60115-8
IEC 60301	NOTE	Harmonized as EN 60301
IEC 61249-5-1	NOTE	Harmonized as EN 61249-5-1

## Annex ZA

### (normative)

### Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60115-1 (mod)	2008	Fixed resistors for use in electronic equipment - Part 1: Generic specification	EN 60115-1	2011
-	-		+ A11	2015
IEC 60294	-	Measurement of the dimensions of a cylindrical component with axial terminations	EN 60294	-

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**IEC 62812**

Edition 1.0 2019-05

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Low resistance measurements – Methods and guidance**

**Mesures de faibles résistances – Méthodes et recommandations**



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**IEC 62812**

Edition 1.0 2019-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Low resistance measurements – Methods and guidance**

**Mesures de faibles résistances – Méthodes et recommandations**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LOW RESISTANCE MEASUREMENTS –  
METHODS AND GUIDANCE**

## FOREWORD

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The text of this International Standard is based on the following documents:

FDIS	Report on voting
40/2665/FDIS	40/2671/RVD

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

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

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## LOW RESISTANCE MEASUREMENTS – METHODS AND GUIDANCE

### 1 Scope

Resistance measurements are typically compromised by a variety of phenomena, for example serial resistance in the measurement path, self-heating or non-ohmic properties. Whether the effect of such phenomena on a resistance measurement is acceptable or not depends on the magnitude of each effect in comparison to the resistance and to the required accuracy. Hence, the risk of erroneous resistance measurements increases with decreasing resistance and with a tightening of the permissible tolerance.

This document specifies methods of measurement and associated test conditions that eliminate or reduce the influence of adverse phenomena in order to improve the attainable accuracy of low-resistance measurements.

The methods described in this document are applicable for the individual measurements of the resistance of individual resistors, and also for resistance measurements as part of a test sequence. They are applied if prescribed by a relevant component specification, or if agreed between a customer and a manufacturer.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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

IEC 60115-1:2008, *Fixed resistors for use in electronic equipment – Part 1: Generic specification*

IEC 60294, *Measurement of the dimensions of a cylindrical component with axial terminations*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60115-1 and the following apply.

A list of used letter symbols and abbreviated terms is provided in Annex A.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **electromotive force**

e.m.f.

difference in potential that gives rise to an electric current



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