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Irish Standard
I.S. EN IEC 61083-3:2021

Instruments and software used for measurement in high-voltage and high-current tests - Part 3: Requirements for hardware for tests with alternating and direct voltages and currents

I.S. EN IEC 61083-3:2021

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National Foreword

I.S. EN IEC 61083-3:2021 is the adopted Irish version of the European Document EN IEC 61083-3:2021, Instruments and software used for measurement in high-voltage and high-current tests - Part 3: Requirements for hardware for tests with alternating and direct voltages and currents

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EUROPEAN STANDARD

EN IEC 61083-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2021

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English Version

**Instruments and software used for measurement in high-voltage
and high-current tests - Part 3: Requirements for hardware for
tests with alternating and direct voltages and currents
(IEC 61083-3:2020)**

Appareils et logiciels utilisés pour les mesurages pendant
les essais à haute tension et à courant élevé - Partie 3:
Exigences relatives au matériel pendant les essais avec
des tensions et des courants alternatifs et continus
(IEC 61083-3:2020)

Messgeräte und Software für die Messung in
Hochspannungs- und Hochstromprüfungen - Teil 3:
Anforderungen an Messgeräte für Prüfungen mit Wechsel-
und Gleichspannungen und Wechsel- und Gleichströmen
(IEC 61083-3:2020)

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EN IEC 61083-3:2021 (E)**European foreword**

The text of document 42/380/FDIS, future edition 1 of IEC 61083-3, prepared by IEC/TC 42 "High-voltage and high-current test techniques" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61083-3:2021.

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) 2021-09-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-12-30

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

| | | |
|----------------------------|------|--|
| IEC 60060-1 | NOTE | Harmonized as EN 60060-1 |
| IEC 60060-3 | NOTE | Harmonized as EN 60060-3 |
| IEC 60243-1 | NOTE | Harmonized as EN 60243-1 |
| IEC 61000-4-2 | NOTE | Harmonized as EN 61000-4-2 |
| IEC 61000-4-3 | NOTE | Harmonized as EN IEC 61000-4-3 |
| IEC 61000-4-4 | NOTE | Harmonized as EN 61000-4-4 |
| IEC 61000-4-5 | NOTE | Harmonized as EN 61000-4-5 |
| IEC 61000-4-6 | NOTE | Harmonized as EN 61000-4-6 |
| IEC 61000-4-8 | NOTE | Harmonized as EN 61000-4-8 |
| IEC 61000-4-11 | NOTE | Harmonized as EN IEC 61000-4-11 |
| IEC 61000-6-2 | NOTE | Harmonized as EN IEC 61000-6-2 |
| IEC 61000-6-4 | NOTE | Harmonized as EN IEC 61000-6-4 |
| IEC 61000-6-4:2006/A1:2010 | NOTE | Harmonized as EN 61000-6-4:2007/A1:2011 (not modified) |
| IEC 61083-1 | NOTE | Harmonized as EN 61083-1 |
| IEC 61326-1 | NOTE | Harmonized as EN 61326-1 |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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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.

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|---|--------------|-------------|
| IEC 60060-2 | - | High-voltage test techniques - Part 2: Measuring systems | EN 60060-2 | - |
| IEC 61180 | - | High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment | EN 61180 | - |
| IEC 62475 | - | High-current test techniques - Definitions and requirements for test currents and measuring systems | EN 62475 | - |
| ISO/IEC Guide 98-3 | 2008 | Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995) | - | - |

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Edition 1.0 2020-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Instruments and software used for measurement in high-voltage and high-current tests –

Part 3: Requirements for hardware for tests with alternating and direct voltages and currents

Appareils et logiciels utilisés pour les mesurages pendant les essais à haute tension et à courant élevé –

Partie 3: Exigences relatives au matériel pendant les essais avec des tensions et des courants alternatifs et continus



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Edition 1.0 2020-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Instruments and software used for measurement in high-voltage and high-current tests –
Part 3: Requirements for hardware for tests with alternating and direct voltages and currents**

**Appareils et logiciels utilisés pour les mesurages pendant les essais à haute tension et à courant élevé –
Partie 3: Exigences relatives au matériel pendant les essais avec des tensions et des courants alternatifs et continus**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INSTRUMENTS AND SOFTWARE USED FOR MEASUREMENT
IN HIGH-VOLTAGE AND HIGH-CURRENT TESTS –****Part 3: Requirements for hardware for tests with alternating
and direct voltages and currents**

FOREWORD

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International Standard IEC 61083-3 has been prepared by IEC technical committee 42: High-voltage and high-current test techniques.

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

| | |
|-------------|------------------|
| FDIS | Report on voting |
| 42/380/FDIS | 42/387/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.

A list of all parts in the IEC 61083 series, published under the general title *Instruments and software used for measurement in high-voltage and high-current tests*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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INTRODUCTION

The electric power industry requires standardized tools to provide confidence in testing results, and to prove equivalence between tests performed in different laboratories and test fields.

This part of IEC 61083 specifies requirements for the performance of digital recording instruments used for tests with alternating and direct voltages and currents.

The intention of this document is to provide recommendations on the digital recording instruments to be used in tests with alternating and direct voltages and currents.

Digital recording instruments are considered as black boxes (including hardware, firmware, and software). They are characterized for their intended application by physical calibration with the waveforms needed for that application.

This document does not apply to simple analogue or digital meters that do not have recording capability.

INSTRUMENTS AND SOFTWARE USED FOR MEASUREMENT IN HIGH-VOLTAGE AND HIGH-CURRENT TESTS –

Part 3: Requirements for hardware for tests with alternating and direct voltages and currents

1 Scope

This part of IEC 61083 is applicable to digital recording instruments used for measurements during tests with high alternating and direct voltages and currents. It specifies the measuring characteristics and calibrations required to meet the measuring uncertainties and procedures specified in the relevant IEC standards (e.g. IEC 60060-1, IEC 60060-2, IEC 60060-3, IEC 62475, IEC 61180).

This document is applicable to those digital recording instruments that will be designed and type tested according to this document.

This document

- defines performance requirements for digital recording instruments used during tests with alternating voltages and currents (AC) or direct voltages and currents (DC);
- specifies the necessary requirements for such instruments to ensure their suitability for use under the relevant standards;
- establishes the tests and procedures necessary to demonstrate their compliance;
- defines the terms related to digital recording instruments with recording function and access to raw data.

NOTE Examples of relevant alternating and direct voltages and currents to be measured are listed in Annex D.

This International Standard has the status of a horizontal standard in accordance with IEC Guide 108.

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 60060-2, *High-voltage test techniques – Part 2: Measuring systems*

IEC 61180, *High-voltage test techniques for low-voltage equipment – Definitions, test and procedure requirements, test equipment*

IEC 62475, *High-current test techniques – Definitions and requirements for test currents and measuring systems*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

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