**STA/SD/OP/04/F2**

**KENYA BUREAU OF STANDARDS**

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| **Document Type:** | **Adoption proposal** | |
| **Dates:** | Circulation date | Closing date |
| 2021-01-18 | 2020-02-18 |
| **TC Secretary** | **This form shall be filled, signed and returned to Kenya Bureau of Standards for the attention of Robert Njoroge (njoroger@kebs.org)** | |

The Kenya Bureau of Standards intends to adopt the International Standards listed below.

We are therefore seeking views from potential users in respect of the same. The Standards are available at the Kenya Bureau of Standards Information Resource Centre. Please tick and fill your preference of the listed option in the attached table against each of the standards.

Where the option is that the adoption is not acceptable, you **MUST** give a reason(s) and recommendation(s).

**NOTE 1:** Absence of any reply or comments shall be deemed to be an acceptance of the proposal for adoption and **shall constitute an approval vote**.

1. **Number**: IEC 61557-1:2019 RLV to replace KS IEC 61557-1:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 1: General requirements, Second Edition

**Scope**: IEC 61557-1:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-1:2019 specifies the general requirements applicable to measuring and monitoring equipment for testing the electrical safety in low-voltage distribution systems with nominal voltages up to 1 000 V AC and 1 500 V DC. When measuring equipment or measuring installations involve measurement tasks of various measuring equipment covered by this series of standards, then the part of this series relevant to each of the measurement tasks is applicable. Other parts of IEC 61557 can specify additional requirements or deviations. This document does not cover functional safety or cybersecurity. IEC 61557-1:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This third edition includes the following significant technical changes with respect to the previous edition:

a) terms aligned with IEC 60050;

b) measurement of uncertainty revised according to the equations in 4.2 of ISO/IEC Guide 98-3:2008 (GUM);

c) updated references for safety and EMC requirements;

d) updated references for marking and operating instructions;

e) updated references for testing safety and EMC;

f) Annex A contains an explanation of GUM;

g) Annex B addresses environmental aspects.

<https://webstore.iec.ch/publication/65550>

1. **Number**: IEC 61557-2:2019 RLV to replace KS IEC 61557-2:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 2: Insulation resistance, Second Edition

**Scope**: IEC 61557-2:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-2:2019 specifies the requirements applicable to equipment for measuring the insulation resistance of equipment and installations in the de-energized state IEC 61557-2:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) addition of requirements as regards measurement category;

b) addition of new requirements for operating instructions;

c) alignment of the structure with that of the the whole IEC 61557 series.

<https://webstore.iec.ch/publication/65551>

1. **Number**: IEC 61557-3:2019 RLV to replace KS IEC 61557-3:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 3: Loop impedance, Second Edition

**Scope**: IEC 61557-3:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-3:2019 specifies the requirements applicable to equipment for measuring the loop impedance between a line conductor and protective conductor; between a line conductor and neutral; or between two line conductors by using the voltage drop when the circuit under test is loaded. IEC 61557-3:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) addition of equirements as regards the measurement category;

b) addition of new requirements for operating instructions;

c) alignment of the structure with that of the whole IEC 61557 series.

<https://webstore.iec.ch/publication/65552>

1. **Number**: IEC 61557-4:2019 RLV to replace KS IEC 61557-4:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding, Second Edition

**Scope**: IEC 61557-4:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-4:2019 specifies the requirements applicable to equipment for measuring the resistance of earth conductors, protective earth conductors and conductors for equipotential bonding, including their connections and terminals, with an indication of the measured value or an indication of the limits. IEC 61557-4:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) complement to the measurement category in Clause 4;

b) correction of the equation for operating uncertainty;

c) complement to the requirements for measuring with DC;

d) alignment of the structure with that of the whole IEC 61557 series.

<https://webstore.iec.ch/publication/65553>

1. **Number**: IEC 61557-5:2019 RLV to replace KS IEC 61557-5:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 5: Resistance to earth, Second Edition

**Scope**: IEC 61557-5:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-5:2019 specifies the requirements applicable to measuring equipment for measuring the resistance to earth using an AC voltage. IEC 61557-5:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) definitions and symbols in Clause 3 modified;

b) subclauses in Clause 4 restructured and aligned with other parts of the series;

c) limits for reduced voltages 25 V RMS or 35 V peak removed from 4.5;

d) requirements for clamps added;

e) marking for rated voltages to earth and measurement category added to Clause 5;

f) warning about absence of hazardous voltage added in Clause 5;

g) the term "percentage operating uncertainty" replaced by "operating uncertainty" in Clause 6;

h) equation for uncertainty corrected in Table 1;

i) new Annex A on test measurements with loop clamps added.

<https://webstore.iec.ch/publication/65554>

1. **Number**: IEC 61557-6:2019 RLV to replace KS IEC 61557-6:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 6: Effectiveness of residual current devices (RCD) in TT, TN and IT systems, Second Edition

**Scope**: IEC 61557-6:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-6:2019 specifies the requirements applicable to measuring equipment for testing the effectiveness of protective measures of residual current devices (RCD) installed in TT, TN and IT systems. It is not the purpose of this document to verify the RCD according to their product standards. IEC 61557-6:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) addition of requirements for testing a new type of RCD;

b) addition of requirements for type B RCDs (former Annex B);

c) addition of new Annex B on recommended tripping times;

d) alignment of the structure with that of the whole IEC 61557 series.

<https://webstore.iec.ch/publication/65555>

1. **Number**: IEC 61557-7:2019 RLV to replace KS IEC 61557-7:2007

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 7: Phase sequence, Second Edition

**Scope**: IEC 61557-7:2019 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-7:2019 specifies the requirements applicable to measuring equipment for testing the phase sequence in three-phase distribution systems. Indication of the phase sequence can be mechanical, visual and/or audible. This document does not apply to additional measurements for other quantities. It does not apply to monitoring relays. IEC 61557-7:2019 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision. This edition includes the following changes with respect to the previous edition:

a) alignment of the structure with that of the whole IEC 61557 series;

b) updated requirements in 4.3 in accordance with new editions of IEC 61010-1 and IEC 61010-031;

c) the information on markings was extended;

d) the information on the operating instructions was extended;

e) complement to the information on the testing of leads;

f) test leads for insulated conductors were introduced;

g) Annex B was added with information on phase sequence tests and indications.

<https://webstore.iec.ch/publication/65556>

1. **Number**: IEC 61557-11:2020 RLV

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 11: Effectiveness of residual current monitors (RCM) in TT, TN and IT systems, First Edition

**Scope**: IEC 61557-11:2020 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-11:2020 specifies the requirements for test equipment applied to the testing of the effectiveness of residual current monitors (RCM) that are already installed in distribution systems. This test equipment can be used in any kind of network, such as a TN, TT or IT system. The test equipment can also be used for testing directionally discriminating residual current monitors (RCM) in IT systems. It is not the purpose of this document to verify the residual current monitors (RCM) according to their product standards. IEC 61557-11:2020 cancels and replaces the first edition published in 2009. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) document title modified to include all types of RCM;

b) terms aligned with IEC 60050;

c) addition of requirements for testing new types of RCM;

d) moving of requirements for RCM Type B from former Annex A to main body text;

e) alignment of the structure with that of the whole IEC 61557 series.

<https://webstore.iec.ch/publication/67248>

1. **Number**: IEC 61557-12:2018 RLV

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 12: Power metering and monitoring devices (PMD), First Edition

**Scope**: IEC 61557-12:2018 RLV contains both the official IEC International Standard and its Redline version. The Redline version is available in English only and provides you with a quick and easy way to compare all the changes between the official IEC Standard and its previous edition.

IEC 61557-12:2018 specifies requirements for power metering and monitoring devices (PMD) that measure and monitor the electrical quantities within electrical distribution systems, and optionally other external signals. These requirements also define the performance in single- and three-phase AC or DC systems having rated voltages up to 1 000 V AC or up to 1 500 V DC. These devices are fixed or portable. They are intended to be used indoors and/or outdoors. Power metering and monitoring devices (PMD), as defined in this document, give additional safety information, which aids the verification of the installation and enhances the performance of the distribution systems. The power metering and monitoring devices (PMD) for electrical parameters described in this document are used for general industrial and commercial applications. This document does not address functional safety and cyber security aspects. This document is not applicable for:

– electricity metering equipment that complies with IEC 62053-21, IEC 62053-22, IEC 62053-23 and IEC 62053-24. Nevertheless, uncertainties defined in this document for active and reactive energy measurement are derived from those defined in IEC 62053 (all parts);

– the measurement and monitoring of electrical parameters defined in IEC 61557-2 to IEC 61557-9 and IEC 61557-13 or in IEC 62020;

– power quality instrument (PQI) according IEC 62586 (all parts);

– devices covered by IEC 60051 (all parts) (direct acting analogue electrical measuring instrument). IEC 61557-12:2018 cancels and replaces the first edition published in 2007. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) PMD-A has been withdrawn due the fact these devices are now mainly covered by the IEC 62586 series of standards.

b) Three categories of PMD have been created with a list of minimum required functions for each category.

c) Added a new Annex A explaining the different applications linked to the relevant standards and devices, and another new Annex C about the power factor conventions. <https://webstore.iec.ch/publication/64047>

1. **Number**: IEC 61557-13:2011

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 13: Hand-held and hand-manipulated current clamps and sensors for measurement of leakage currents in electrical distribution systems, First Edition

**Scope**: IEC 61557-13:2011 defines special performance requirements for hand-held and hand-manipulated current clamps and sensors for measurement of leakage currents in electrical distribution systems up to 1 000 V a.c. and 1 500 V d.c., taking into account the influence of high external low-frequency magnetic fields and other influencing quantities. This standard does not apply to current clamps or sensors which are used in combination with devices for insulation fault location according to IEC 61557-9, unless it is specified by the manufacturer.

<https://webstore.iec.ch/publication/5572>

1. **Number**: IEC 61557-14:2011

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V a.c and 1 500 V d.c - Equipment for testing, measuring or monitoring of protective measures - Part 14: Equipment for testing the safety of electrical equipment for machinery, First Edition

**Scope**: IEC 61557-14:2013 defines special requirements for test and measurement equipment used to determine the electrical safety of electrical equipment of machinery according to IEC 60204-1. IEC 61010 and the existing parts of series IEC 61557 do not cover all safety aspects of testing electrical equipment of machinery. IEC 61557-14 provides additional protection against electric shock for the testing person and bystanders during high-voltage-tests and in case of unintended use of the test equipment. It defines performance requirements for each measuring and testing function to ensure comparable results.

<https://webstore.iec.ch/publication/5573>

1. **Number**: IEC 61557-15:2014

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 15: Functional safety requirements for insulation monitoring devices in IT systems and equipment for insulation fault location in IT systems, First Edition

**Scope**: IEC 61557-15:2014 specifies requirements related to functional safety and is based on the IEC 61508 standard series for the realization of Insulation Monitoring Devices (IMD) as specified in IEC 61557-8 and for Insulation Fault Location Systems (IFLS) according to IEC 61557-9, according to phase 10 of the IEC 61508-1 lifecycle. These devices provide safety related functions for IT systems. This part of IEC 61557 is

- concerned only with functional safety requirements intended to reduce the functional risk during the use of IMDs and IFLSs;

- restricted to risks arising directly from the device itself or from several IMDs or IFLSs working together in a system; and

- intended to define the basic safety functions provided by the devices. This part of IEC 61557 does not

- deal with electrical safety according to IEC 61010-1 and the requirements of IEC 61557-8 and IEC 61557-9;

- cover the hazard and risk analysis of a particular use of the IMD or IFLS;

- identify all the safety functions for the application in which the IMD or IFLS is used; and

- cover the IMD or IFLS manufacturing process. Functional safety requirements depend on the application and should be considered as part of the overall risk assessment of the specific application. The supplier of IMDs and IFLSs is not responsible for the application. The application designer is responsible for the risk assessment and for specifying the overall functional safety requirements of the complete IT system and he should select the functional safety level (SIL) of the IMD and/or IFLS when their safety function is part of the functional safety assessment in the IT system.

This publication is to be read in conjunction with IEC 61557-8:2007 and IEC 61557-9:2009

<https://webstore.iec.ch/publication/5574>

1. **Number**: IEC 61557-16:2014

**Title**: Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c - Equipment for testing, measuring or monitoring of protective measures - Part 16: Equipment for testing the effectiveness of the protective measures of electrical equipment and/or medical electrical equipment, First Edition

**Scope**: IEC 61557-16:2014 defines performance requirements for test and measurement equipment to determine the effectiveness of the protective measures of electrical measures for electrical equipment and/or medical electrical equipment described in IEC 62353. It is the intention of this standard to achieve comparable measuring results, additional safety for the testing person and negligible electrical stress for the unit under test. Keywords: leakage current, patient applied part

This publication is to be read in conjunction with IEC 61557-1:2007.

<https://webstore.iec.ch/publication/5575>

1. **Number**: IEC 60898-1:2019

**Title**: Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation, First Edition

**Scope**: IEC 60898-1:2015+A1:2019 applies to a.c. air-break circuit-breakers for operation at 50 Hz, 60 Hz or 50/60 Hz, having a rated voltage not exceeding 440 V (between phases), a rated current not exceeding 125 A and a rated short-circuit capacity not exceeding 25 000 A. This second edition cancels and replaces the first edition published in 2002, Amendment 1:2002 and Amendment 2:2003. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) revision of 9.5 Terminals

b) revision of the test of glow wire

c) simplification of the figures for short circuit tests.

The contents of the corrigendum of November 2015 and corrigendum of amendment of March 2020 have been included in this copy. This consolidated version consists of the second edition (2015) and its amendment 1 (2019). Therefore, no need to order amendments in addition to this publication

<https://webstore.iec.ch/publication/66269>

1. **Number**: IEC 60898-2:2016

**Title**: Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 2: Circuit-breakers for AC and DC operation, First Edition

**Scope**: IEC 60898-2:2016 gives additional requirements for single- and two-pole circuit-breakers which, in addition to the above characteristics, are suitable for operation with direct current, and have a rated DC voltage not exceeding 220 V for single-pole and 440 V for two-pole circuit-breakers, a rated current not exceeding 125 A and a rated DC short-circuit capacity not exceeding 10 000 A. This second edition cancels and replaces the first edition published in 2000 and Amendment 1:2003. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) alignment with second edition of IEC 60898-1;

b) introduction of test Icn1.

This publication is to be read in conjunction with IEC 60898-1:2015.

<https://webstore.iec.ch/publication/25675>

1. **Number**: IEC 63024:2017

**Title**: Requirements for automatic reclosing devices (ARDs) for circuit breakers, RCBOs-RCCBs for household and similar uses, First Edition

**Scope**: IEC 63024:2017 applies to automatic reclosing devices (ARDs) for household and similar uses, for rated voltage not exceeding 440 V AC, and which are intended to be used in combination with circuit-breakers, RCCBs and RCBOs, and designed either for factory assembly or for assembly on site.

These devices are intended to reclose main protective devices (MPDs) such as circuit-breakers complying with IEC 60898-1 and/or IEC 60898-2, RCCBs complying with IEC 61008-1 and/or IEC 62423, and RCBOs complying with IEC 61009-1 and/or IEC 62423 after tripping of those devices in order to re-establish continuity of service.

<https://webstore.iec.ch/publication/27837>

1. **Number**: IEC 61009-1:2013

**Title**: Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - Part 1: General rules, First Edition

**Scope**: IEC 61009-1:2010+A1:2012+A2:2013 applies to residual current operated circuit breakers with integral overcurrent protection functionally independent of, or functionally dependent on, line voltage for household and similar uses (hereafter referred to as RCBOs), for rated voltages not exceeding 440 V a.c. with rated frequencies of 50 Hz, 60 Hz or 50/60 Hz and rated currents not exceeding 125 A and rated short circuit capacities not exceeding 25 000 A for operation at 50 Hz or 60 Hz. This third edition cancels and replaces the second edition, published in 1996, amendment 1 (2002) and amendment 2 (2006). It constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

- complete revision of EMC sequences, including the new test T.2.6, already approved in IEC 61543;

- clarification of RCDs current/time characteristics reported in Tables 2 and 3;

- revision of test procedure for IΔn between 5 A and 200 A;

- tests for the use of RCBOs in IT systems;

- testing procedure regarding the 6mA d.c. current superimposed to the fault current;

- improvement highlighting RCDs with multiple sensitivity;

- some alignments with IEC 60898-1.

<https://webstore.iec.ch/publication/4273>

**ADOPTION PROPOSAL**

| **S/No.** | **Standard Number** | **Adoption acceptable as presented** | **Adoption proposal not acceptable** | **Reason why adoption proposal not acceptable** | **Proposed Change/recommendation(s)** |
| --- | --- | --- | --- | --- | --- |
|  | IEC 61557-1:2019 |  |  |  |  |
|  | IEC 61557-2:2019 |  |  |  |  |
|  | IEC 61557-3:2019 |  |  |  |  |
|  | IEC 61557-4:2019 |  |  |  |  |
|  | IEC 61557-5:2019 |  |  |  |  |
|  | IEC 61557-6:2019 |  |  |  |  |
|  | IEC 61557-7:2019 |  |  |  |  |
|  | IEC 61557-11:2009 |  |  |  |  |
|  | IEC 61557-12:2018 |  |  |  |  |
|  | IEC 61557-13:2011 |  |  |  |  |
|  | IEC 61557-14:2013 |  |  |  |  |
|  | IEC 61557-15:2014 |  |  |  |  |
|  | IEC 61557-16:2014 |  |  |  |  |
|  | IEC 60898-1:2019 |  |  |  |  |
|  | IEC 60898-2:2016 |  |  |  |  |
|  | IEC 61009-1:2013 |  |  |  |  |
|  | IEC 63024:2017 |  |  |  |  |

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| --- | --- | --- | --- |
| Name and (of respondent) |  | Position |  |
| Signature |  |  |  |

On behalf of: (Name of organization)

Date (& stamp):