DOCUMENT NO.:

Kenya Power

VACUUM INTERRUPTER TESTER – SPECIFICATION.

A Document of the Kenya Power & Lighting Co. Ltd
JANUARY 2026

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0.1 CIRCULATION LIST

COPY NO.	COPY HOLDER
1	1st AE, E/plant Nairobi
2	Senior Engineer, E/Plant Nairobi

0.2 AMENDMENT RECORD

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)
0	2025-02-21	New issue	Beatrice Gitonga	Zacheus Oluoch

FOREWORD

This specification has been prepared by the E/plant Nairobi of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for vacuum interrupter tester intended for use by KPLC engineers to test and analyze the integrity of medium voltage circuit breakers vacuum interrupters. The tester shall be light and portable, easy to use. The tester shall be shall be used for day to day circuit breaker corrective and predictive maintenance works.

This specification was prepared to ensure the adaptability of vacuum tester to the existing operating and climatic conditions in Kenya.

There are no other specifications in this series.

This specification stipulates the minimum requirements for vacuum interrupter tester acceptable for use in the company and it shall be the responsibility of the suppliers and manufacturer to ensure that the offered design is of the highest quality and guarantees excellent service to KPLC, good workmanship and good engineering practice in the manufacture of the Plant/Equipment for KPLC.

Users of Kenya Power specifications are responsible for their correct interpretation and application.

1. SCOPE

1.1. This specification is for vacuum tester for use by company's E/plant department mainly in distribution circuit breakers.

1.2. The specification covers requirements, design, tests and inspection and schedule of Guaranteed Technical Particulars of the vacuum tester.

2. NORMATIVE REFERENCES

The following standards contain provision which, through reference in this text, constitute provisions of this specification. For dated editions the cited edition will apply; for undated editions the latest edition of the referenced document shall apply.

IEC 60529 is an international standard that defines the IP (Ingress Protection) Code system. This system classifies and rates the level of protection that electrical equipment enclosures provide against the intrusion of solid foreign objects (including dust) and water.

IEC 60068-2-27 is an international standard that provides procedures for determining the ability of electrical and electronic components and equipment to withstand mechanical shocks.

IEC 60068-2-6 is a foundational international standard within the IEC 60068 series that specifies procedures for testing the ability of electrical and electronic components and equipment to withstand sinusoidal vibrations.

IP54 indicates that an enclosure provides a specific, moderate level of protection against both solid foreign objects and water intrusion.

IEC 62271 High Voltage switchgear and control gear.

IEEE C37 Standard requirements for all types of electrical control circuits for ac high voltage.

3. DEFINITIONS AND ABBREVIATIONS

For this specification the definitions and abbreviations given in the reference standards shall apply together with the following abbreviations.

3.1. ABBREVIATIONS

KPLC- Kenya Power and Lighting Company Limited

ISO – International Organization for Standardization.

IEC- International electrotechnical commission

Kg –Kilogram

USB- Universal Serial Bus

CB- Circuit Breaker

Gb- Giga bits

LCD- Liquid crystalline Display

PC- Personal Computer

IP-Ingress Protection

4. REQUIREMENTS

4.1. SERVICE CONDITIONS

4.1.1. Operating conditions.

The Vacuum interrupter tester shall be suitable for continuous

Outdoor operation in tropical areas with the following conditions.

(a) Altitude: Up to 2200 meters above sea level.

(b) Temperature: Average of +30°C with minimum of -1°C and Maximum of +40°C.

4.1.2 Weight- the total weight of the equipment together with its associated accessories shall not exceed 12 Kg

4.2.0 **Applications of the Vacuum Interrupter tester.**

4.2.1 The tester shall be used to check the integrity of medium and high voltage circuit breaker vacuum interrupters by application of test voltage across the vacuum terminals.

4.3.0 Test equipment Requirements.

4.3.1 The tester shall be used in medium and high voltage substations and occasionally in industrial environment.

4.3.2 The tester shall be operated within the temperature range of -1°C and 30°C and humidity of between 5% and 95%.

4.3.3 The tester to have mains voltage of 230V AC,50Hz and power consumption of not more than 70VA with overload protection provision.

4.3.4 The tester dimensions shall not be more than 255×215×130mm

4.3.5 Tester shall have strong and rugged carrying case with dimensions not more than 465×435×215mm.

4.3.6 The tester shall have a maximum test output voltage of 60V DC.

4.3.7 The test voltage shall be switchable and selectable from 10kV, 14kV, 25kV, 40kV, 50kV and 60kV.

4.3.8 The tester primary voltage test lead shall not be less than 10m.

4.3.9 The tester shall be equipped with the following indications to facilitate measurement.

Green Lamp: Indicates a good vacuum chamber.

Red Lamp 1: Indicates faulty or defective vacuum chamber.

Red Lamp 2: Flashes when the test is in progress,

Yellow Lamp: Test interrupted.

4.3.10 The tester shall have the power ON/OFF switch and lamp to show indicate equipment on.

4.3.11 The tester shall have provision for the connection of protective earth during the test.

4.3.12 The tester shall have button or control knob for performance of the test.

4.5.0 Physical and Environmental

4.5.1 Weight: Shall not be more than 12 kg.

4.5.2 Encapsulation shall be at least IP54 rated as per IEC 60529

4.5.3 Operating Temperature shall be -1°C to +40°C

4.5.4 Operating humidity 5%-95%.

4.5.5 Operating altitude upto 2200m above the sea level.

APPENDICIES

A: TESTS AND INSPECTION (Normative)

A.1 It shall be the responsibility of the supplier/manufacturer to test or to have all the relevant tests performed.

A.2 On receipt of the CB Analyzer analyzer, Kenya Power will inspect them and may perform or have performed any of the relevant tests in order to verify compliance with the specification. The supplier shall replace without charge to Kenya Power, any part on the equipment which upon examination, test or use fail to meet any or all of the requirements in the specification.

B: QUALITY MANAGEMENT SYSTEM (Normative)

B.1 The bidder shall indicate the delivery time of the equipment

C: DOCUMENTATION AND DEMONSTRATION (Normative)

C.1 The bidder shall submit its tender complete with technical documents for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:

a) Fully filled clause by clause guaranteed technical particulars (GTP) signed by the manufacturer;

b) Copies of the Manufacturer's catalogues, brochures, drawings giving all relevant dimensions, and technical data;

c) Bidder's warranty and guarantee; subject to 12 months from date of delivery to KPLC stores

d) User manual.

C.2 The supplier shall submit recommendations for use, care, storage and routine inspection/testing procedures, all in the English Language, during delivery of the diverter switch to KPLC stores.

D: GUARANTEED TECHNICAL PARTICULARS (Normative)

To be filled and signed by the Bidder and submitted together with relevant copies of the Manufacturer's catalogues, brochures, drawings, technical data, for tender evaluation, all in English Language)

Tender No. .....

Bidder's name and Address.....

Clause number	Requirement	Bidder's offer	
Manufacturer's Name		State	
Country of Manufacture		State	
Name and model Number		State	
1.	Scope	State	
2.	Normative references	Specify	
3	Definitions and abbreviation	Specify	
4.	**Requirements**		
4.1	Service conditions		
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Clause number	Requirement	Bidder's offer	
4.3.8	Length of the primary test leads	State	
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4.4.2	Case IP class	State	
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A	TESTS AND INSPECTION		
A.1	Responsibility to test	State compliance	
A.2	Replacement if it fails to meet any or all of the requirements in the specification.	Specify	
B	Quality Management System		
B.1	Delivery time of the product	state	
C	Documentation and demonstration		
C.1	Documents submitted with tender	State	
C.2	Recommendations for use	State	

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Bidder's Name, Signature, Stamp and Date