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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Shunt power capacitors of the self-healing type for a.c. systems having a rated voltage up to and including 1 000 V – Part 2: Ageing test, self-healing test and destruction test

Condensateurs shunt de puissance autorégénérateurs pour réseaux à courant alternatif de tension assignée inférieure ou égale à 1 000 V – Partie 2: Essais de vieillissement, d'autorégénération et de destruction

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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SHUNT POWER CAPACITORS OF THE SELF-HEALING TYPE FOR A.C. SYSTEMS HAVING A RATED VOLTAGE UP TO AND INCLUDING 1 000 V –

Part 2: Ageing test, self-healing test and destruction test

FOREWORD

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International Standard IEC 60831-2 has been prepared by IEC technical committee 33: Power capacitors and their applications.

This third edition cancels and replaces the second edition published in 1995. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Updating of the normative references;
b) Discharge cycles before ageing test carried out at ambient temperature;
c) Alternative Self-healing test at d.c. voltage;
d) Modified acceptance conditions after Self-healing test;
e) Modifications to Destruction test.

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The text of this standard is based on the following documents:

FDIS	Report on voting
33/544/FDIS	33/551/RVD

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

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

A list of all the parts in the IEC 60831 series, published under the general title *Shunt power capacitors of the self-healing type for a.c. systems having a rated voltage up to and including 1 000 V*, can be found on the IEC website.

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

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SHUNT POWER CAPACITORS OF THE SELF-HEALING TYPE FOR A.C. SYSTEMS HAVING A RATED VOLTAGE UP TO AND INCLUDING 1 000 V –

Part 2: Ageing test, self-healing test and destruction test

1 Scope

This part of IEC 60831 applies to capacitors according to IEC 60831-1 and gives the requirements for the ageing test, self-healing test and destruction test for these capacitors.

NOTE The numbering of the clauses and subclauses in this standard corresponds to that of IEC 60831-1.

2 Normative references

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.

IEC 60831-1:2014, *Shunt power capacitors of the self-healing type for a.c. systems having a rated voltage up to and including 1 000 V – Part 1: General – Performance, testing and rating – Safety requirements – Guide for installation and operation*

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17 Ageing test

17.1 Conditioning

17.1.1 General

The temperature of the case during the first part (17.2a)) and the third part (17.2c)) of the ageing test shall be the highest mean temperature in 24 h (see Table 1, IEC 60831-1:2014) plus the difference between the measured temperature of the case and the cooling air temperature recorded at the end of the thermal stability test carried out on an identical unit. The second part (17.2b)) of the ageing test should be performed at room temperature.

The two test methods indicated below are intended to ensure that the capacitor case temperature is maintained constant during the test.

The two methods are considered as being equivalent.

The units that are not sealed shall be tested in air, with forced circulation.

17.1.2 Testing in air with forced circulation

The capacitor unit is mounted in an enclosure in which heated air is circulated with an air velocity such that temperature variations at any point of the enclosure do not exceed ± 2 °C. The sensitive element of the thermostat regulating the temperature in the capacitor enclosure shall be located on the surface of the capacitor container, three-quarters of the way up.

The capacitor shall be placed in a vertical position with the terminals upright.

When many capacitors are tested together, they shall be placed with sufficient clearance between them in order to have sufficient temperature uniformity.

After placing the capacitor in the unheated enclosure, the thermostat shall be set at a temperature equal to that indicated in 17.1.1.

Then, without energizing the capacitor, the enclosure shall be brought to thermal stability, which shall be deemed to have been reached when the container temperature of the capacitor has reached the stated temperature with a tolerance of ± 2 °C.

The capacitor shall then be energized at the voltage stated in 17.2a).

17.1.3 Testing in a liquid bath

The capacitor unit is immersed in a container filled with a liquid which, by appropriate heating, is kept at the temperature indicated in 17.1.1 during the whole test.

This temperature is maintained with a permissible change of ± 2 °C.

Care shall be taken to ensure that the temperature in the neighbourhood of the capacitor is within these limits.

The capacitor is not energized until it has reached the temperature of the liquid bath.

The capacitor shall then be energized at the voltage stated in 17.2a).

Where the terminal insulation, or the insulation of cables permanently attached to the capacitor, is of material that might be damaged by the heating liquid, it is permissible for the

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