

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Static VAR compensators (SVC) – Testing of thyristor valves**

**Compensateurs statiques de puissance réactive (SVC) – Essais des valves à thyristors**



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**Static VAR compensators (SVC) – Testing of thyristor valves**

**Compensateurs statiques de puissance réactive (SVC) – Essais des valves à thyristors**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**STATIC VAR COMPENSATORS (SVC) –  
TESTING OF THYRISTOR VALVES**

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International Standard IEC 61954 has been prepared by subcommittee 22F: Power electronics for electrical transmission and distribution systems, of IEC technical committee 22: Power electronic systems and equipment.

This third edition cancels and replaces the second edition published in 2011, with Amendment 1:2013 and Amendment 2:2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: important clarifications were made in 4.4.1.2, 5.1.2.2, 5.1.3.2, 5.2.3.2, 6.1.2.2, 6.1.2.4, 6.1.3.2, 6.2.2.2, 6.2.2.4, 6.3.2.2 and 9.3.2.

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

| FDIS         | Report on voting |
|--------------|------------------|
| 22F/642/FDIS | 22F/658/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.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## STATIC VAR COMPENSATORS (SVC) – TESTING OF THYRISTOR VALVES

### 1 Scope

This document defines type, production and optional tests on thyristor valves used in thyristor controlled reactors (TCR), thyristor switched reactors (TSR) and thyristor switched capacitors (TSC) forming part of static VAR compensators (SVC) for power system applications. The requirements of the document apply both to single valve units (one phase) and to multiple valve units (several phases).

Clauses 4 to 7 detail the type tests, i.e. tests which are carried out to verify that the valve design meets the requirements specified. Clause 8 covers the production tests, i.e. tests which are carried out to verify proper manufacturing. Clauses 9 and 10 detail optional tests, i.e. tests additional to the type and production tests.

### 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 (all parts), *High-voltage test technique*

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

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

IEC 60071 (all parts), *Insulation co-ordination*

IEC 60071-1:2019, *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 60270, *High-voltage test techniques – Partial discharge measurements*

IEC 60700-1:2017, *Thyristor valves for high-voltage direct current (HVDC) power transmission – Part 1: Electrical testing*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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>