**IS 16075 : 2024**

***भारतीय मानक***

***Indian Standard***

**IEC 62501: 2024**

***उच्च - वोल्टता दिष्ट धारा (एच.वी.डी.सी.) पावर प्रेषण हेतु वोल्टेज चलित परिवर्तक (वी.एस.सी.) वाल्व — विद्युत परीक्षण***

***(*** पहला पुनरीक्षण )

**Voltage Sourced Converter (VSC) Valves for High - Voltage Direct Current (HVDC) Power Transmission — Electrical Testing**

( *First Revision )*

ICS 29.200, 29.240.99

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HVDC Power Systems Sectional Committee, ETD 40

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical with IEC 62501: 2024 ‘Voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) power transmission – Electrical testing’ issued by the International Electrotechnical Commission (IEC) was adopted by the Bureau of Indian Standards on the recommendation of the HVDC Power Systems Sectional Committee and approval of the Electrotechnical Division Council.

The text of the IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

1. Wherever the words ‘International Standard’ appears referring to this standard, they should be read as ‘Indian Standard’.
2. Comma (,) has been used as a decimal marker, while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this revision, scope of the standard has been updated to a guide for testing of high-voltage VSC valves used in energy storage systems (ESS) and can be used for all types of valves. Checklist and conditions for use of evidence in lieu have been added in Table 1. Clauses of Frequency for testing, Dielectric tests, and short-circuit current test have been updated. An alternative method of testing (method 2) has also been introduced.

In this adopted standard, reference appears to International Standards for which Indian Standards also exists. The corresponding Indian Standards, which are to be substituted, are listed below along with their degree of equivalence for the editions indicated:

|  |  |  |
| --- | --- | --- |
| *International Standard* | *Corresponding Indian Standard* | *Degree of Equivalence* |
| IEC 60060 (all parts), High-voltage test techniques | IS 2071 (Part 1) : 2016/ IEC 60060-1 : 2010 High - Voltage test techniques Part 1 General definitions and test requirements (*third revision*) | Identical |
| IS/IEC 60060-2: 2010 High - Voltage test techniques Part 2 measuring systems | Identical |
| IS/IEC 60060-3: 2006 High - Voltage test techniques Part 3 definitions and requirements for on - Site testing | Identical |
| IEC 60071 (all parts), Insulation co-ordination | IS/IEC 60071-1: 2019 Insulation coordination Part 1 Definition principles and rules *(first revision)* | Identical |
| IS/IEC 60071-2 : 2018 Insulation coordination Part 2 Application guide | Identical |
| IS/IEC 60071-4 : 2004 Insulation coordination Part 4 Computational guide to insulation Co-ordination and modeling of electrical networks | Identical |
| IS/IEC/TR 60071-5 : 2014 Insulation Co-ordination Part 5 Procedures for High-Voltage Direct Current (HVDC) Converter Stations | Identical |
| IEC 60270, High-voltage test techniques – Partial discharge measurements | IS/IEC 60270 : 2000 High -Voltage test techniques – Partial discharge measurements | Identical |
| IEC 60700-1:2015, Thyristor valves for high voltage direct current (HVDC) power transmission – Part 1: Electrical testing | IS 14911 (Part 1) : 2020/ IEC 60700-1 : 2015 Thyristor Valves for high voltage direct current (HVDC) power Transmission Part 1 Electrical testing *( first revision )* | Identical |
| IEC 62747, Terminology for voltage-sourced converters (VSC) for high-voltage direct current (HVDC) systems | IS 18461 : 2024/ IEC 62747: 2014+Amd 1: 2019 Terminology for Voltage-Sourced converters (VSC) for High-Voltage direct current (HVDC) Systems | Identical |
| ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories | IS/ISO/IEC 17025 : 2017 General requirements for the competence of testing and calibration laboratories (*second revision*) | Identical |

Only English language text has been retained while adopting it in this Indian Standard, and as such the page numbers given here are not the same as in the International Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test, shall be rounded off in accordance with IS 2: 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.