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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19749.4-2023

**Coupling capacitors and capacitor dividers - Part 4: DC or AC
single-phase capacitor dividers**

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Standardization Administration**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents"

drafting:

This document is part 4 of GB/T 19749 "Coupling Capacitors and Capacitive Voltage Dividers": GB/T 19749 has issued the following

part:

--- Part 1: General;

--- Part 2: DC or AC single-phase coupling capacitors connected between line and ground for power line carrier (PLC);

--- Part 3: AC or DC coupling capacitors for harmonic filters;

--- Part 4: DC or AC single-phase capacitive voltage divider:

This document is modified to adopt IEC 60358-4:2018 "Coupling capacitors and capacitive voltage dividers - Part 4: DC or AC single-phase capacitive dividers

Compressor":

The technical differences between this document and IEC 60358-4:2018 and their reasons are as follows:

---Changed the content of the scope, according to the requirements of GB/T 1:1-2020, added the specific content specified in the document;

--- Changed the normative reference documents, replaced IEC 60358-1:2012 with GB/T 19749:1-2016, between the two documents

The degree of consistency is modified to meet the requirements of my country's insulation level and increase operability;

---Changed the withstand voltage between the intermediate terminal and the grounding terminal, in order to adapt to the actual situation of my country's power system, according to the relevant requirements

Change to: For medium-voltage terminals, the nominal voltage is not less than 3kV, and the withstand AC voltage between the medium-voltage terminal and the grounding terminal is based on

Table 3 of GB/T 19749:1-2016 is selected; when the nominal voltage of the middle voltage terminal is lower than 3kV, the distance between it and the grounding terminal

The withstand AC voltage is 6 times its nominal voltage, but not less than 3kV (see 6:2:1:400);

--- Changed the sealing test of liquid immersion equipment, in order to cover gas products, the "tightness test of liquid immersion equipment" was revised as

"Sealing test", and the specific content has been revised according to the title (see 9:1);

--- Increased $\tan\delta$ measurement to adapt to actual use (see 9:2:400:1:1):

The following editorial changes were made to this document:

---Replace the source documents of terms and definitions in IEC 60358-4:2018 with Chinese documents (see 3:400:1, 3:400:2 and

3:400:4 etc.);

--- Change the subscript "2:1" in all figures of IEC 60358-4:2018 to "2";

---Change the subscripts of R in all figures of IEC 60358-4:2018 to "RS1 and RS2 or RP1 and RP2" in series and parallel connection;

--- Modify "Figure 402:1" of IEC 60358-4:2018 to "Figure 4A:1:a)" and "Figure 402:2" to "Figure 4A:1:b)";

--- Added references:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying these patents:

Introduction

GB/T 19749 "Coupling Capacitors and Capacitive Dividers" is proposed to consist of the following four parts:

--- Part 1: General: The purpose is to establish the general principles and related rules to be followed by coupling capacitors and capacitive voltage dividers:

--- Part 2: DC or AC single-phase coupling capacitors connected between line and ground

for power line carrier (PLC): The purpose is

to establish special requirements and related rules for such coupling capacitors:

--- Part 3: AC or DC coupling capacitors for harmonic filters: The purpose is to establish the special

requirements and related rules:

--- Part 4: DC or AC single-phase capacitive voltage divider: The purpose is to establish the special requirements and related

rule:

This document is used together with GB/T 19749:1-2016, unless otherwise specified in this document, this document implements GB/T 19749:1-2016

Provisions: In order to simplify the repeated expression of the same requirements, the terms of this document are the same as GB/T 19749:1-2016, when

When a clause in GB/T 19749:1-2016 is not covered in this document, the clause is applicable as long as it is reasonable: When this document states

When "supplement", "modify" or "replace", the relevant content in GB/T 19749:1-2016 shall be adjusted accordingly: Supplements to these terms

Additional clauses are given under the same reference heading, while additional clauses are numbered starting with 400:

Coupling Capacitors and Capacitive Dividers

Part 4: DC or AC single-phase capacitive voltage dividers

1 Scope

This document specifies the conditions of use, ratings, design requirements, test conditions, test categories, and examples of DC or AC single-phase capacitive voltage dividers:

Conduct tests, type tests, special tests and marking:

This document applies to d:c or a:c single-phase capacitive voltage dividers connected between line and earth for potential transformer manufacturing and other applications:

Note 1: An example diagram of a voltage divider applicable to this document is shown in Figure 4A:1 in Appendix 4A [Figure 4A:1:a) and Figure 4A:1:b)]:

Note 2: See GB/T 20840 (all parts) for complete voltage transformer requirements:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 19749:1-2016 Coupling Capacitors and Capacitive Dividers Part 1: General Rules (IEC 60358-1:2012, MOD)

3 Terms and Definitions

The following terms and definitions defined in GB/T 19749:1-2016 apply to this document:

The following supplementary notes are used for 3:1:6:

NOTE: For DC dividers, U_m also includes harmonic peak voltages:

3:400 Definition of Voltage Divider

3:400:1

voltage divider

A device composed of resistors, inductors, capacitors, transformers, or a combination of these devices, between two points of the device can get the required

Fractional value of the applied voltage:

NOTE: In this document, a voltage divider includes a high-voltage part, an internal or external low-voltage part:

[Source: GB/T 2900:89-2012, 312-02-32, modified]

3:400:2

Rated primary voltage rated primary voltage

The primary voltage value used as a benchmark for voltage divider performance during design:

NOTE: For a voltage divider, performance is all that is related to measurement behavior such as divider ratio, accuracy, load, input voltage range, etc:

[Source: GB/T 2900:94-2015, 4:8, modified]

3:400:3

U_{sr}