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

GB/T 22582-2023

Replacing GB/T 22582-2008

Power capacitors - Low-voltage power factor correction banks

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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 replaces GB/T 22582-2008 "Low Voltage Power Factor Compensation Device for Power Capacitors" and is consistent with GB/T 22582-2008

In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Changed some terms and definitions (see Chapter 3, Chapter 3 of the:2008 edition);
- b) Change the information requirements on the nameplate, allowing other information such as the maximum allowable current to be given on the nameplate or in the manual (see Chapter 4,;2008 Chapter 4 of the annual edition);
- c) Changed the "Conditions of Use" (see 5:1, 5:2, 5:2:1 of the:2008 edition);

- d) Changed the "Conditions for Transport, Storage and Installation" (see Section 5:3, Chapter 9 of the:2008 edition);
- e) The classification of inrush current amplitude is added (see 6:3), and the classification of product structure form is deleted (see 5:2:2:1 of the:2008 edition);
- f) Changed the overvoltage action threshold range of power frequency overvoltage protection (see 7:2:4, 5:2:5:2 of the:2008 edition);
- g) Added "undervoltage protection" (see 7:2:5);
- h) The rated current of "circuit breakers, knife switches and capacitor switching devices" has been changed (see 7:2:10:4, 5:3:3 of the:2008 edition);
- i) Changed "Installation and Operation" (see 7:3, 5:4 of the:2008 edition);
- j) Changed the "system connection" (see 7:4:6, 5:5:6 of the:2008 edition);
- k) The "Structure and Performance Requirements" has been changed, see "Design Verification" for relevant technical content changes (see 7:2:8, 7:2:9, 8:2, 8:4, 8:5, 8:6, 8:7, 8:9, 8:10, 8:11, 5:2:3:2 of the:2008 edition);
- l) Changed "Test Classification" and "Test Method", deleted "Acceptance Test", changed "Type Test" to "Design Verification" (see Section Chapter 8 and Chapter 9, Chapter 7 and Chapter 8 of the:2008 edition);
- m) Added requirements and tests for product structure and strength (see 8:2);
- n) The "enclosure protection level" has been changed, and related technical content changes refer to "design verification" and so on (see 8:3, 5:2:6 of the:2008 edition);
- o) Changed the temperature rise test method (see 8:10, 8:2:8 of the:2008 edition);
- p) Changed product electromagnetic compatibility requirements and tests (see 8:12, Chapter 6 of the:2008 edition);
- q) Changed the "minimum and maximum cross-sectional area of copper wires suitable for connection" (see Appendix D, Appendix A of the:2008 edition);
- r) Deleted the "Calculation method for the cross-sectional area of the protective conductor in the case of thermal stress caused by short-term current" (see the appendix of the:2008 edition)

B):

This document is modified to adopt IEC 61921:2017 "Low-voltage power factor correction device for power capacitors":

Compared with IEC 61921:2017, this document has more structural adjustments:

Comparison list of structure number changes between two files

See Appendix A:

Compared with IEC 61921:2017, this document has more technical differences, and vertical
A single line (|) is marked: See Appendix B for a list of these technical differences and their
causes:

The following editorial changes have been made to this document:

--- Added Appendix A (informative);

--- Added Appendix B (informative);

--- Changed the references, replaced IEC 60050-436:1990 with GB/T 2900:16-1996, and
used GB/T 16927:1-

2011 replaced IEC 60060-1:2010:

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

1 Scope

This document specifies the signs, conditions of use,

Product classification, design, installation, operation and safety guidelines, design
verification and routine tests, etc:

This document applies to low-voltage power factor correction for adjusting the power factor
of the power grid with an AC frequency of 50Hz and a rated voltage of 1000V or below

The device has a low-voltage AC shunt capacitor bank for power factor correction inside the
device, which can be equipped with a main power supply that can connect or disconnect
the capacitor bank:

Switchgear and control equipment of the circuit to correct the power factor: Unless
otherwise stated below, low-voltage power factor correction devices comply with

GB/T 7251:1-2013 and GB/T 7251:12-2013 requirements:

Refer to this document for low-voltage power factor correction devices with an AC
frequency of 50Hz and a rated voltage of 1140V:

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 156-2017 Standard Voltage (IEC 60038:2009, MOD)

GB/T 3047:1 Basic dimension series of panels, racks and cabinets with a height system of
20mm

GB/T 4025-2010 Basic and safety rules for human-machine interface signs and
identification Code rules for indicators and operators

(IEC 60073:2002, IDT)

GB/T 4026-2019 Basic and safety rules for marking and marking of human-machine
interface Marking of equipment terminals, conductor terminals and conductors

(IEC 60445:2017, IDT)

GB/T 7251:1-2013 Low-voltage switchgear and controlgear assemblies - Part 1: General
principles (IEC 61439-1:2011, IDT)

GB/T 7251:12-2013 Low-voltage switchgear and controlgear complete part 2: Complete
power switchgear and controlgear

(IEC 61439-2:2011, IDT)

GB/T 12747:1 Self-healing shunt capacitors for AC power systems with nominal voltages
up to and including 1000 V - Part 1: General

Performance, test and rating safety requirements installation and operation guidelines
(GB/T 12747:1-2017, IEC 60831-1:2014, IDT)

GB/T 14598:26-2015 Measuring relays and protective devices - Part 26: Requirements for
electromagnetic compatibility (IEC 60255-26:

2013, IDT)

GB/T 17886:1 Non-self-healing shunt capacitors for AC power systems with nominal
voltages up to and including 1 kV Part 1: General rules-

Performance, Test and Rating - Safety Requirements - Guidelines for Installation and
Operation (GB/T 17886:1-1999, IEC 60931-1:1996, IDT)

GB/T 26870 Application of filters and shunt capacitors in industrial AC power grids affected
by harmonics (GB/T 26870-

2011, IEC 61642:1997, MOD)