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INTERNATIONAL STANDARD



Power capacitors – Low-voltage power factor correction banks

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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LOW-VOLTAGE POWER FACTOR CORRECTION BANKS****FOREWORD**

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International Standard IEC 61921 has been prepared by IEC technical committee 33: Power capacitors and their applications.

This second edition cancels and replaces the first edition published in 2003. It constitutes a technical revision.

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

- numerous changes regarding verification methods to align with IEC 61439-1;
- modification of marking;
- add routine verification of rated output;
- new Annex D with guidance on methods for temperature rise verification;
- update of normative references;
- general editorial review.

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

FDIS	Report on voting
33/607/FDIS	33/611/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.

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

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

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POWER CAPACITORS – LOW-VOLTAGE POWER FACTOR CORRECTION BANKS

1 Scope

This International Standard is applicable to low-voltage AC **shunt** capacitor banks intended to be used for power factor correction purposes, **possibly** equipped with a built-in switchgear and controlgear apparatus capable of connecting to or disconnecting from the mains part(s) of the bank with the aim to correct its power factor.

Low-voltage power factor correction banks if not otherwise indicated hereinafter and where applicable ~~shall~~ comply with the requirements of ~~IEC 60439-1 and those of IEC 60439-3~~ **IEC 61439-1 and IEC 61439-2.**

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 60439-1:1999, Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies~~

~~IEC 60439-3:1990, Low-voltage switchgear and controlgear assemblies – Part 3: Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access for their use – Distribution boards~~

IEC 60831-1:1996 **2014**, Shunt power capacitors of the self-healing type for AC 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

IEC 60931-1:1996, Shunt power capacitors of the non-self-healing type for AC systems having a rated voltage up to and including 1000 V – Part 1: General – Performance, testing and rating – Safety requirements – Guide for installation and operation

IEC 61439-1:2011, Low-voltage switchgear and controlgear assemblies – Part 1: General rules

IEC 61439-2:2011, Low-voltage switchgear and controlgear assemblies – Part 2: Power switchgear and controlgear assemblies

IEC 61642:1997, Industrial AC networks affected by harmonics – Application of filters and shunt capacitors

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Power capacitors – Low-voltage power factor correction banks

**Condensateurs de puissance – Batteries de compensation du facteur de
puissance basse tension**

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IEC 61439-2:2011, *Low-voltage switchgear and controlgear assemblies – Part 2: Power switchgear and controlgear assemblies*

IEC 60831-1:2014, *Shunt power capacitors of the self-healing type for AC 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*

IEC 60931-1:1996, *Shunt power capacitors of the non-self-healing type for AC systems having a rated voltage up to and including 1000 V – Part 1: General – Performance, testing and rating – Safety requirements – Guide for installation and operation*

IEC 61642:1997, *Industrial AC networks affected by harmonics – Application of filters and shunt capacitors*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

CONDENSATEURS DE PUISSANCE – BATTERIES DE COMPENSATION DU FACTEUR DE PUISSANCE BASSE TENSION

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La Norme internationale IEC 61921 a été établie par le comité d'études 33 de l'IEC: Condensateurs de puissance et leurs applications.

Cette deuxième édition annule et remplace la première édition parue en 2003. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- nombreuses modifications concernant l'alignement des méthodes de vérification sur l'IEC 61439-1;
- modification de marquage;
- ajout d'une vérification individuelle systématique de la puissance assignée;

- nouvelle Annexe D avec préconisations portant sur les méthodes de vérification de l'échauffement;
- actualisation des références normatives;
- révision rédactionnelle générale.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
33/607/FDIS	33/611/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

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CONDENSATEURS DE PUISSANCE – BATTERIES DE COMPENSATION DU FACTEUR DE PUISSANCE BASSE TENSION

1 Domaine d'application

La présente Norme internationale s'applique aux batteries de condensateurs shunt à basse tension en courant alternatif destinées à être utilisées pour la compensation du facteur de puissance, ces batteries comportant éventuellement des appareillages de connexion et de commande intégrés capables de mettre sous tension ou hors tension une ou des fractions de l'ensemble afin de compenser le facteur de puissance du réseau.

Sauf indication contraire dans la présente norme et le cas échéant, les batteries de compensation du facteur de puissance basse tension satisfont aux exigences de l'IEC 61439-1 et de l'IEC 61439-2.

2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 61439-1:2011, *Ensembles d'appareillage de basse tension – Partie 1: Règles générales*

IEC 61439-2:2011, *Ensembles d'appareillage à basse tension – Partie 2: Ensembles d'appareillage de puissance*

IEC 60831-1:2014, *Condensateurs shunt de puissance autoregénérateurs pour réseaux à courant alternatif de tension assignée inférieure ou égale à 1 000 V – Partie 1: Généralités – Caractéristiques fonctionnelles, essais et valeurs assignées – Règles de sécurité – Guide d'installation et d'exploitation*

IEC 60931-1:1996, *Condensateurs shunt de puissance non autorégénérateurs pour réseaux à courant alternatif de tension assignée inférieure ou égale à 1000 V – Partie 1: Généralités – Caractéristiques fonctionnelles, essais et valeurs assignées – Règles de sécurité – Guide d'installation et d'exploitation*

IEC 61642:1997, *Réseaux industriels à courant alternatif affectés par les harmoniques – Emploi de filtres et de condensateurs shunt*