

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Electrical installations for lighting and beaconing of aerodromes –  
Part 3-2: Requirements for power supplies – Particular requirements for series  
circuits**

**Installations électriques pour l'éclairage et le balisage des aérodromes –  
Partie 3-2 : Exigences relatives aux alimentations électriques – Exigences  
particulières relatives aux circuits série**





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IEC Secretariat  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL INSTALLATIONS FOR LIGHTING  
AND BEACONING OF AERODROMES –****Part 3-2: Requirements for power supplies –  
Particular requirements for series circuits**

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IEC 61820-3-2 has been prepared by IEC technical committee 97: Electrical installations for lighting and beaconing of aerodromes. It is an International Standard.

This first edition cancels and replaces IEC 61822 published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61822:2009:

- a) introduction of power electronic converter systems (PECS) to be used in the aeronautical ground lighting systems other than the 6,6 A aeronautical ground lighting systems;
- b) introduction of classification for different device types;

- c) introduction of IEC 62477-1:2022 and IEC 62477-2:2018 as the basis for safety related requirements.

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

Draft	Report on voting
97/264/FDIS	97/265/RVD

Full information on the voting for its approval 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/publications](http://www.iec.ch/publications).

A list of all parts in the IEC 61820 series, published under the general title *Electrical installations for lighting and beaconing of aerodromes*, can be found on the IEC website.

Future documents in this series will carry the new general title as cited above. Titles of existing documents in this series will be updated at the time of the next edition.

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- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

This document introduces an open specification for power electronic converter systems (PECS) to be used in aeronautical ground lighting (AGL) series circuit systems. The aim of this open specification is to enable various technologies to be used within AGL systems while ensuring the safe operation and function of the AGL system based on specific items in a series circuit topology.

This document also includes updated requirements for 6,6 A constant current regulators (CCR), previously defined in IEC 61822:2009.

The PECS defined in this document are power supplies for AGL circuits with a series circuit topology. It is possible that a PECS is not interoperable with AGL devices designed for the 6,6 A system. It is also possible that a PECS is not interoperable with AGL devices from other PECS-driven AGL systems. Special care should be taken to ensure the interoperability of the AGL components unless they are specifically designed to be operated together.

To clarify the distinction between different series circuit power supplies, a new classification system is introduced in Clause 4. A base class divides the power supplies into PECS and CCRs. In this document the term PECS refers to series circuit power supplies belonging to the class "General PECS for AGL systems" and the term CCR refers to series circuit power supplies belonging to the class "CCR for 6,6 A systems". The term PECS/CCR refers to both device classes. The class "CCR for 6,6 A AGL systems" corresponds to the traditional series circuit power supplies as defined by IEC 61822:2009.

In addition to the base class, classes for voltage ranges and construction mechanics are introduced. Where a part of this document only refers to one or more specific AGL systems, the systems in question will be clearly indicated.

Meanwhile this updated edition can be partially applicable to PECS dedicated to converting power from a mains supply to power suited for AGL other than series circuit topology. The maintenance work of IEC 61822:2009 into IEC 61820-3-2 started before the writing of the related subparts IEC 61820-3-1 and IEC 61820-3-3 had started. This updated version can therefore be partially applicable to PECS dedicated to converting power from a mains supply to power suited for AGL systems with other than series circuit topology.