



**International
Standard**

ISO 5474-3

**Electrically propelled road
vehicles — Functional and safety
requirements for power transfer
between vehicle and external
electric circuit —**

**Part 3:
DC power transfer**

*Véhicules routiers à propulsion électrique — Exigences
fonctionnelles et exigences de sécurité pour le transfert de
puissance entre le véhicule et le circuit électrique externe —*

Partie 3: Transfert de puissance DC

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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This document was prepared by Technical Committee ISO/TC 22 *Road vehicles*, Subcommittee SC 37 *Electrically propelled vehicles*.

A list of all parts in the ISO 5474 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Electrically propelled road vehicles — Functional and safety requirements for power transfer between vehicle and external electric circuit —

Part 3: DC power transfer

1 Scope

This document in combination with ISO 5474-1 specifies requirements for conductive power transfer using direct current (DC) with a voltage up to 1 500 V d.c. between electrically propelled road vehicles and external electric circuits.

This document provides requirements for conductive charging in mode 4 according to IEC 61851-1. For mode 4, this document provides requirements regarding the power transfer only with isolated DC EV supply equipment according to IEC 61851-23.

The requirements in this document are applicable to vehicle power supply circuits.

An outlook of requirements for megawatt charging applications is given in [Annex B](#).

This document does not provide:

- requirements for simultaneous operation of multiple power transfer interfaces and
- requirements for power transfer while driving (electric road systems)

but they are under consideration.

This document does not provide:

- requirements for mopeds and motorcycles (which are specified in ISO 18246);
- comprehensive safety information for manufacturing, maintenance and repair personnel.

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.

ISO 5474-1:2024, *Electrically propelled road vehicles — Functional requirements and safety requirements for power transfer — Part 1: General requirements for conductive power transfer*

ISO 6469-3:2021, *Electrically propelled road vehicles — Safety specifications — Part 3: Electrical safety*

ISO 26262 (all parts), *Road vehicles — Functional safety*

IEC 60364-4-43, *Low-voltage electrical installations — Part 4-43: Protection for safety — Protection against overcurrent (relevant parts will be specified during the project)*

IEC 61000-4-5, *Electromagnetic compatibility (EMC) — Part 4-5: Testing and measurement techniques - Surge immunity test*