IEC 62282-4-102

Edition 2.0 2022-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fuel cell technologies – Part 4-102: Fuel cell power systems for electrically powered industrial trucks – Performance test methods

Technologies des piles à combustible – Partie 4-102: Systèmes à piles à combustible pour chariots de manutention électriques – Méthodes d'essai des performances

IEC 62282-4-102:2022-12(en-fr)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 27.070

ISBN 978-2-8322-6175-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FUEL CELL TECHNOLOGIES –

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FOREWORD

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IEC 62282-4-102 has been prepared by IEC technical committee 105: Fuel cell technologies. It is an International Standard.

This second edition cancels and replaces the first edition published in 2017. This edition constitutes a technical revision.

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

a) alignment of the Scope with the second edition of IEC 62282-4-101:2022;
b) deletion of terms and definitions (previous entries 3.5, 3.10, and 3.15);
c) addition of new terms in Clause 3: "delivered power" (3.13) and "regenerated power" (3.14);
d) revision of symbols and their meanings in alignment with those of IEC 62282-3-201;
e) replacement of "reference conditions" with "standard conditions" as seen in Clause 5;
f) revision of the test method for the accessory load voltage spike test (13.3.2);

g) addition of clarifications in Clause 14 (Power stability under operation);

h) addition of a checklist for performance criteria dealt with in this document (Annex C).

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

Draft	Report on voting
105/947/FDIS	105/954/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 62282 series, published under the general title *Fuel cell technologies*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

This part of IEC 62282-4 provides consistent and repeatable test methods for the electric, thermal and environmental performance of fuel cell power systems for electrically powered industrial trucks.

The IEC 62282-4 series deals with categories such as safety, performance, and interchangeability of fuel cell power systems for propulsion other than road vehicles and auxiliary power units (APUs). This document (IEC 62282-4-102) focuses on performance test methods for fuel cell power systems used to drive industrial electric trucks, which are being manufactured and used increasingly worldwide. This is because such applications are urgently needed in the world.

This part of IEC 62282-4 describes type tests and their test methods only. No routine tests are required or identified, and no performance targets are set in this document.

Fuel cell systems used in electrically powered industrial trucks, such as forklift trucks, use both batteries and fuel cells, and so operate in several different modes. Similarly, forklift trucks operate in different modes. The purpose of this document is to evaluate the fuel cell system in the various combinations of fuel cell modes and forklift truck modes. This document breaks down these different modes and provides a framework for designing and evaluating a fuel cell system for use specifically in a forklift truck.

This part of IEC 62282-4 is intended to be used by either manufacturers of fuel cell power systems used for electrically powered industrial trucks or those who evaluate the performance of the systems used in them for certification purposes or both.

Users of this document can select and perform the tests they need from those described. This document is not intended to exclude any other tests.