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Fuel cell technologies - Part 3-202: Stationary fuel cell power systems - Performance test methods for small fuel cell power systems for multiple units operation

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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**EN IEC 62282-3-202**

May 2025

ICS 27.070

English Version

**Fuel cell technologies - Part 3-202: Stationary fuel cell power systems - Performance test methods for small fuel cell power systems for multiple units operation  
(IEC 62282-3-202:2025)**

Technologies des piles à combustible - Partie 3-202:  
Systèmes à piles à combustible stationnaires - Méthodes  
d'essai des performances pour petits systèmes à piles à  
combustible destinés à l'exploitation d'unités multiples  
(IEC 62282-3-202:2025)

Brennstoffzellentechnologien - Teil 3-202: Stationäre  
Brennstoffzellen-Energiesysteme -  
Leistungskennwerteprüfverfahren für kleine  
Brennstoffzellen-Energiesysteme hinsichtlich eines  
Parallelbetriebs mehrerer Einheiten  
(IEC 62282-3-202:2025)

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 62282-3-202:2025 (E)****European foreword**

The text of document 105/1094/FDIS, future edition 1 of IEC 62282-3-202, prepared by TC 105 "Fuel cell technologies" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62282-3-202:2025.

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|                            |      |                                              |
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| IEC 61850-7-420            | NOTE | Approved as EN IEC 61850-7-420               |
| IEC 62282-3-200:2025       | NOTE | Approved as EN 62282-3-200:2023 <sup>1</sup> |
| IEC 62282-3-201:2025       | NOTE | Approved as EN 62282-3-201:2023 <sup>2</sup> |
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| ISO 6975                   | NOTE | Approved as EN ISO 6975                      |
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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Fuel cell technologies –**

**Part 3-202: Stationary fuel cell power systems – Performance test methods for small fuel cell power systems for multiple units operation**

**Technologies des piles à combustible –**

**Partie 3-202: Systèmes à piles à combustible stationnaires – Méthodes d'essai des performances pour petits systèmes à piles à combustible destinés à l'exploitation d'unités multiples**



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IEC 62282-3-202

Edition 1.0 2025-03

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Fuel cell technologies –**

**Part 3-202: Stationary fuel cell power systems – Performance test methods for small fuel cell power systems for multiple units operation**

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**Partie 3-202: Systèmes à piles à combustible stationnaires – Méthodes d'essai des performances pour petits systèmes à piles à combustible destinés à l'exploitation d'unités multiples**

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## CONTENTS

|                                                                                     |    |
|-------------------------------------------------------------------------------------|----|
| FOREWORD.....                                                                       | 4  |
| INTRODUCTION.....                                                                   | 6  |
| 1 Scope.....                                                                        | 7  |
| 2 Normative references .....                                                        | 7  |
| 3 Terms and definitions .....                                                       | 7  |
| 4 Symbols .....                                                                     | 12 |
| 5 Configuration of small stationary fuel cell power system .....                    | 14 |
| 6 Reference conditions .....                                                        | 15 |
| 7 Heating value base .....                                                          | 15 |
| 8 Test preparation .....                                                            | 15 |
| 8.1 General.....                                                                    | 15 |
| 8.2 Uncertainty analysis.....                                                       | 16 |
| 8.3 Data acquisition plan .....                                                     | 16 |
| 9 Test set-up .....                                                                 | 16 |
| 10 Instruments and measurement methods .....                                        | 18 |
| 10.1 General.....                                                                   | 18 |
| 10.2 Measurement instruments .....                                                  | 18 |
| 10.3 Measurement points.....                                                        | 19 |
| 10.4 Minimum required measurement systematic tolerance .....                        | 20 |
| 11 Test conditions .....                                                            | 21 |
| 11.1 Laboratory conditions.....                                                     | 21 |
| 11.2 Installation and operating conditions of the system .....                      | 21 |
| 11.3 Test fuel .....                                                                | 21 |
| 12 Parameter list.....                                                              | 21 |
| 12.1 Electrical characteristics for fuel cell power system.....                     | 21 |
| 12.1.1 Power generation electrical efficiency (rated, partial load) .....           | 21 |
| 12.1.2 Start-up, shut-down energy.....                                              | 21 |
| 12.1.3 Ramp-up rate and ramp-down rate between rated and minimum load .....         | 21 |
| 12.1.4 Waiting time for restart (hot restart) .....                                 | 21 |
| 12.2 Thermal characteristics for fuel cell power system .....                       | 21 |
| 12.2.1 Heat recovery efficiency .....                                               | 21 |
| 12.2.2 Full heat storage amount of hot water tank .....                             | 21 |
| 12.2.3 Remaining hot storage amount of hot water tank .....                         | 22 |
| 12.2.4 Heat insulating performance of hot water tank .....                          | 22 |
| 12.2.5 Heat recovery temperature .....                                              | 22 |
| 12.2.6 Pressure drop characteristics from feed water inlet to hot water outlet..... | 22 |
| 13 Test methods.....                                                                | 22 |
| 13.1 Electrical characteristics for fuel cell power system.....                     | 22 |
| 13.1.1 Power generation electrical efficiency (rated, partial load) .....           | 22 |
| 13.1.2 Start-up, shut-down energy.....                                              | 27 |
| 13.1.3 Ramp-up rate and ramp-down rate between rated and minimum load .....         | 30 |
| 13.1.4 Waiting time for restart (hot restart) .....                                 | 35 |
| 13.2 Thermal characteristics for fuel cell power system .....                       | 35 |
| 13.2.1 Heat recovery test .....                                                     | 35 |
| 13.2.2 Full heat storage amount of hot water tank .....                             | 37 |

|                       |                                                                                                                                                                  |    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 13.2.3                | Remaining heat storage amount of hot water tank .....                                                                                                            | 38 |
| 13.2.4                | Heat insulating performance of hot water tank .....                                                                                                              | 39 |
| 13.2.5                | Heat recovery temperature .....                                                                                                                                  | 39 |
| 13.2.6                | Pressure drop characteristics from feed water inlet to hot water outlet.....                                                                                     | 40 |
| 14                    | Test reports .....                                                                                                                                               | 40 |
| 14.1                  | General.....                                                                                                                                                     | 40 |
| 14.2                  | Title page.....                                                                                                                                                  | 40 |
| 14.3                  | Table of contents .....                                                                                                                                          | 40 |
| 14.4                  | Summary report .....                                                                                                                                             | 41 |
| Annex A (informative) | Heating values for components of natural gases .....                                                                                                             | 42 |
| Annex B (informative) | Examples of nominal composition for natural gas and propane gas .....                                                                                            | 44 |
| Annex C (informative) | Guidelines for the contents of detailed and full reports .....                                                                                                   | 47 |
| C.1                   | General.....                                                                                                                                                     | 47 |
| C.2                   | Detailed report.....                                                                                                                                             | 47 |
| C.3                   | Full report .....                                                                                                                                                | 47 |
| Annex D (informative) | Pressure drop characteristics from feed water inlet to hot water outlet .....                                                                                    | 48 |
| Bibliography          | .....                                                                                                                                                            | 49 |
| Figure 1              | – Configuration of a fuel cell power system that can be complemented with a supplementary heat generator or thermal storage system covered by this document..... | 14 |
| Figure 2              | – Test set-up for small stationary fuel cell power system fed with gaseous fuel which supplies electricity and useful heat.....                                  | 17 |
| Figure 3              | – Test set-up for small stationary fuel cell power system fed with gaseous fuel which supplies only electricity .....                                            | 18 |
| Figure 4              | – Example of electric power chart during start-up time .....                                                                                                     | 27 |
| Figure 5              | – Example of liquid fuel supply systems .....                                                                                                                    | 28 |
| Figure 6              | – Electric power chart during shutdown time .....                                                                                                                | 29 |
| Figure 7              | – Electric power output change pattern for ramp-up and ramp-down rate test.....                                                                                  | 32 |
| Figure 8              | – Example for electric power change stabilization criteria.....                                                                                                  | 33 |
| Figure 9              | – Explanation of temperature sensor locations and $V_j$ .....                                                                                                    | 38 |
| Figure D.1            | – Example for the pressure drop characteristics from feed water inlet to hot water outlet.....                                                                   | 48 |
| Table 1               | – Symbols and their meanings for electric and thermal performance .....                                                                                          | 12 |
| Table A.1             | – Heating values for components of natural gases at various combustion reference conditions for ideal gas .....                                                  | 42 |
| Table B.1             | – Examples of composition of natural gas (%).....                                                                                                                | 45 |
| Table B.2             | – Examples of composition of propane gas (%).....                                                                                                                | 46 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FUEL CELL TECHNOLOGIES –

**Part 3-202: Stationary fuel cell power systems – Performance test methods for small fuel cell power systems for multiple units operation**

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IEC 62282-3-202 has been prepared by IEC technical committee 105: Fuel cell technologies. It is an International Standard.

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

| Draft         | Report on voting |
|---------------|------------------|
| 105/1094/FDIS | 105/1101/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 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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

This part of IEC 62282 provides consistent and repeatable test methods for the electrical thermal and environmental performance of small stationary fuel cell power systems.

This document limits its scope to small stationary fuel cell power systems (electric power output below 10 kW) and provides test methods specifically designed for them in detail. It is based on IEC 62282-3-201.

For multiple units operation, each electric power output of the unit is limited to below 10 kW.

This document is intended for manufacturers of small stationary fuel cell power systems or those who evaluate the performance of their systems for certification purposes.

Users of this document can selectively execute test items that are suitable for their purposes from those described in this document. This document is not intended to exclude any other methods.

This document describes type tests and their test methods only. In this document, no routine tests are required or identified, and no performance targets are set.

## **FUEL CELL TECHNOLOGIES –**

### **Part 3-202: Stationary fuel cell power systems – Performance test methods for small fuel cell power systems for multiple units operation**

#### **1 Scope**

This part of IEC 62282 provides performance test methods specialized for the thermal and electrical characteristics of an energy management system to effectively share the heat and power of networked small stationary fuel cell power systems. These test methods are applied for each small stationary fuel cell power system. This document covers small stationary fuel cell power systems which can be complemented with a supplementary heat generator or a thermal storage system, or both, such as:

- output: rated electric power output of less than 10 kW for each system;
- output mode: grid-connected or independent operation or stand-alone operation with alternating current (AC) output not exceeding 240 V or direct current (DC) output;
- operating pressure: maximum allowable working pressure of less than 0,1 MPa (G) for the fuel and oxidant passages;
- fuel: gaseous fuel (natural gas, liquefied petroleum gas, propane, butane, hydrogen) or liquid fuel (kerosene, methanol);
- oxidant: air.

This document does not apply to small stationary fuel cell power systems with electricity storage other than (small scale) back-up power for safety, monitoring and control.

NOTE Regarding data linkage for conducting the performance tests specified in this document with operating management systems (energy management system) of multiple fuel cell power systems (mFCPS), an appropriate IEC standard can be selected and implemented. The related standards are IEC 61850-7-420, IEC TR 61850-90-27, IEC 62394, IEC 62746-10-1, IEC 62746-10-3, etc. The data linkage and implementation for realizing the functions of the system that monitors mFCPS and peripherals differ depending on the vendor of the mFCPS control system, so the methods for data linkage and implementation are not specified in this document.

#### **2 Normative references**

There are no normative references in this document.

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