

**Fuel cell technologies -- Part 6-300: Micro fuel cell power systems - Fuel cartridge interchangeability**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 62282-6-300:2009 sisaldab Euroopa standardi EN 62282-6-300:2009 ingliskeelset teksti.

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Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 62282-6-300:2009 consists of the English text of the European standard EN 62282-6-300:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 27.11.2009.

The standard is available from Estonian standardisation organisation.

ICS 27.070

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**Fuel cell technologies -  
Part 6-300: Micro fuel cell power systems -  
Fuel cartridge interchangeability  
(IEC 62282-6-300:2009)**

Technologies des piles à combustible -  
Partie 6-300: Systèmes à micro-piles  
à combustible -  
Interchangeabilité de la cartouche  
de combustible  
(CEI 62282-6-300:2009)

Brennstoffzellentechnologie -  
Teil 6-300: Mikrobrennstoffzellen-  
Energiesysteme -  
Austauschbarkeit der Brennstoffkartusche  
(IEC 62282-6-300:2009)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 105/214/FDIS, future edition 1 of IEC 62282-6-300, prepared by IEC TC 105, Fuel cell technologies, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62282-6-300 on 2009-09-01.

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- latest date by which the EN has to be implemented  
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- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2012-09-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 62282-6-300:2009 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| <u>Publication</u> | <u>Year</u> | <u>Title</u>                                                                                                | <u>EN/HD</u>     | <u>Year</u>  |
|--------------------|-------------|-------------------------------------------------------------------------------------------------------------|------------------|--------------|
| IEC 60950-1 (mod)  | 2005        | Information technology equipment - Safety - Part 1: General requirements                                    | EN 60950-1 + A11 | 2006<br>2009 |
| IEC/PAS 62282-6-1  | 2006        | Fuel cell technologies - Part 6-1: Micro fuel cell power systems - Safety                                   | -                | -            |
| IEC 62282-6-200    | 2007        | Fuel cell technologies - Part 6-200: Micro fuel cell power systems - Performance test methods               | EN 62282-6-200   | 2008         |
| ISO 1302           | 2002        | Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation | EN ISO 1302      | 2002         |

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## INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning fuel connectors given in 4.3.1, 4.3.2, 4.3.3 and 4.3.4, patents concerning mechanical keys given in 4.2.3, and patents concerning fuel quality in 5.5.

IEC takes no position concerning the evidence, validity and scope of this patent right.

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## FUEL CELL TECHNOLOGIES –

### Part 6-300: Micro fuel cell power systems – Fuel cartridge interchangeability

#### 1 Scope

This International Standard covers interchangeability of micro fuel cell (MFC) fuel cartridges to provide the cartridge compatibility for a variety of MFC power units while maintaining the safety and performance of MFC power systems. For this purpose, the standard covers fuel cartridges and their connector designs. Fuel type, fuel concentration and fuel quality are also covered. This standard also provides for the means to avoid the miss-connection of an improper fuel cartridge. Test methods for verifying the compliance with the interchangeability requirements for fuel and fuel cartridges are also provided in this standard.

IEC/PAS 62282-6-1 and IEC 62282-6-200 do not cover fuel cartridge or fuel from the cartridge. IEC 62282-6-300 describes the performance test methods of fuel cartridges, the fuel from the cartridge, and markings to realize the interchangeability of fuel cartridges. These include performance effect of fuel cartridges, such as fuel quality which may affect the performance of MFC power units and usable fuel volume from fuel cartridges.

A MFC power system block diagram is shown in Figure 1. MFC power systems and MFC power units are defined as those wearable or easily carried by hand, providing d.c. outputs that do not exceed 60 V d.c. and power outputs that do not exceed 240 VA. This standard covers the fuel cartridge for MFC power units and the mechanical interface of connectors between fuel cartridges and MFC power units. The main body of this standard includes methanol liquid fuel cartridges, including methanol and water solution. Annex A shows the background used to determine the forces expected in normal operation and in foreseeable misuse. Annex B shows the example design for test fixtures for the fuel connector and fuel cartridge type tests.

NOTE Liquid fuel means fuel transported from a cartridge to a MFC power unit in the liquid state, and gas fuel means fuel transported from a cartridge to a power unit in the gaseous state.

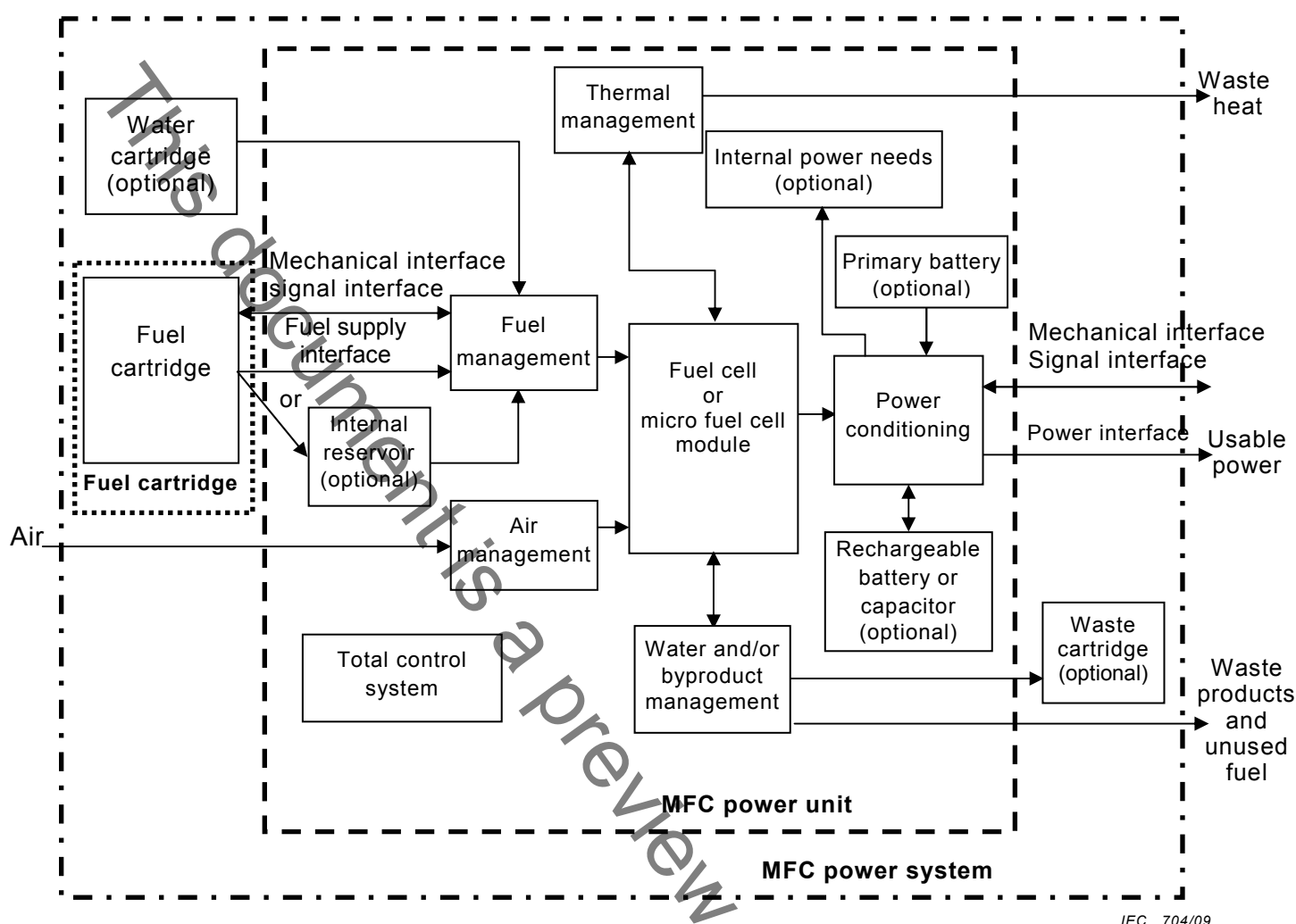


Figure 1 – MFC power system block diagram

## 2 Normative references

The following referenced documents are indispensable for the application 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 60950-1:2005, *Information technology equipment – Safety – Part 1: General requirements*

IEC/PAS 62282-6-1:2006, *Fuel cell technologies – Part 6-1: Micro fuel cell power systems safety*

NOTE IEC/PAS 62282-6-1 will be replaced with IEC 62282-6-100 when it is published as an International Standard. References to IEC/PAS 62282-6-1 will be updated accordingly in subsequent editions of the present standard.

IEC 62282-6-200:2007, *Fuel cell technologies – Part 6-200: Micro fuel cell power systems – Performance test methods*

ISO 1302:2002, *Geometrical Product Specifications (GPS) – Indication of surface texture in technical product documentation*