



BSI Standards Publication

Fuel cell technologies

Part 6-400: Micro fuel cell power systems – Power and data interchangeability (IEC 62282-6-400:2019)

National foreword

This British Standard is the UK implementation of EN IEC 62282-6-400:2019. It is identical to IEC 62282-6-400:2019.

The UK participation in its preparation was entrusted to Technical Committee GEL/105, Fuel cell technologies.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2019
Published by BSI Standards Limited 2019

ISBN 978 0 580 80681 0

ICS 27.070

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2019.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

English Version

Fuel cell technologies - Part 6-400: Micro fuel cell power
systems - Power and data interchangeability
(IEC 62282-6-400:2019)

Technologies des piles à combustible - Partie 6-400:
Systèmes à micropiles à combustible - Interchangeabilité
de la puissance et des données
(IEC 62282-6-400:2019)

Brennstoffzellentechnologien - Teil 6-400: Mikro-
Brennstoffzellen-Energiesysteme - Austauschbarkeit von
Leistung und Daten
(IEC 62282-6-400:2019)

This European Standard was approved by CENELEC on 2019-06-26. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

European foreword

The text of document 105/721/FDIS, future edition 1 of IEC 62282-6-400, prepared by IEC/TC 105 "Fuel cell technologies" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62282-6-400:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-03-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-06-26

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62282-6-400:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62684	NOTE	Harmonized as EN IEC 62684
IEC 62282-6-100	NOTE	Harmonized as EN 62282-6-100
IEC 62282-6-200	NOTE	Harmonized as EN 62282-6-200
IEC 62680-2-2:2015	NOTE	Harmonized as EN 62680-2-2:2015 (not modified)

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TS 62282-1	-	Fuel cell technologies - Part 1: Terminology	-	-

This page deliberately left blank

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references	6
3 Terms, definitions and abbreviated terms	6
3.1 Terms and definitions.....	6
3.2 Abbreviated terms.....	6
4 Power interface	7
4.1 Configuration of micro fuel cell power system	7
4.2 Type of power hybridization	8
4.2.1 General	8
4.2.2 Micro fuel cell power system with internal battery	8
4.2.3 Micro fuel cell power system without internal battery	9
4.3 Type of power connector.....	9
4.3.1 Micro fuel cell power system as battery replacement	9
4.3.2 Micro fuel cell power system as external power source	11
5 Data interface.....	12
5.1 General.....	12
5.2 Data communication protocol	13
5.3 Data specification	13
5.4 Modes of operation of the micro fuel cell power system	13
5.4.1 General	13
5.4.2 Power-OFF mode	14
5.4.3 Battery mode	14
5.4.4 Start-up mode.....	14
5.4.5 Idle mode	14
5.4.6 Power-ON mode	14
5.4.7 Hybrid mode	15
5.5 Alert specification	15
Bibliography.....	16
Figure 1 – Micro fuel cell power system and micro fuel cell power unit block diagram	5
Figure 2 – Micro fuel cell power system configuration	8
Figure 3 – Power hybridization of micro fuel cell power system with internal battery	9
Figure 4 – Power hybridization of micro fuel cell power system without internal battery.....	9
Figure 5 – Schematic diagram of power connection in the case of battery replacement.....	10
Figure 6 – Power connector of micro fuel cell power system as battery replacement.....	10
Figure 7 – Schematic diagram of power connection in the case of external power source	11
Figure 8 – Power connector of micro fuel cell power system as AC adapter	12
Figure 9 – Modes of operation diagram for micro fuel cell power system.....	14
Table 1 – Abbreviated terms	7
Table 2 – Potential data functions for use with micro fuel cell power system	13