IEC 62282-3-400

Edition 1.0 2016-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Fuel cell technologies –
Part 3-400: Stationary fuel cell power systems - Small stationary fuel cell power system with combined heat and power output

Technologies des piles à combustible –
Partie 3-400: Systèmes à piles à combustible stationnaires – Petits systèmes à piles à combustible stationnaires avec chaleur et puissance en sortie combinées

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 27.070

ISBN 978-2-8322-3720-5

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FUEL CELL TECHNOLOGIES –

Part 3-400: Stationary fuel cell power systems – Small stationary fuel cell power system with combined heat and power output

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International Standard IEC 62282-3-400 has been prepared by IEC technical committee 105: Fuel cell technologies.

The text of this standard is based on the following documents:

FDIS	Report on voting
105/620/FDIS	105/624/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 reader's attention is drawn to the fact that Annex B, Annex C and Annex D list all of the “in-some-countries” clauses on differing practices of a less permanent nature relating to the subject of this standard.

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FUEL CELL TECHNOLOGIES –

Part 3-400: Stationary fuel cell power systems – Small stationary fuel cell power system with combined heat and power output

1 Scope

This part of IEC 62282 applies to small stationary fuel cell power systems serving as a heating appliance providing both electric power and useful heat with or without a supplementary heat generator providing peak load function.

This standard applies to fuel cell power systems that are intended to be permanently connected to the electrical system of the customer (end user). Direct connection to the mains (parallel operation) is also within the scope of this standard.

NOTE 1 Parallel operation is subject to the permission of the local electric power supply utility.

This standard is limited to gas and liquid fuelled fuel cell CHP appliances that have a heat input based on lower heating value of less than or equal to 70 kW. For some regional applications, the output electric power is limited. Specific limitations are given in Clause C.1 for Japan.

This standard applies to systems as shown in Figure 1.

One is a system where both stationary fuel cell power system and supplementary heat generator are installed in one enclosure without any partition.

This standard does not have to apply to the supplementary heat generator of systems where the stationary fuel cell power system and the supplementary heat generator are not built in one enclosure, and whose ducts are not common (that is, each appliance has its own dedicated duct system).

This standard applies to systems intended for operation on the following supplied input fuels:

– natural gas and other methane rich gases;
– fuels derived from oil refining (liquefied petroleum gases, propane, and butane);
– hydrogen as supply gas for the CHP generator.

NOTE 2 It is possible that other fuels such as alcohols (methanol, ethanol), kerosene, or hydrogen for the supplementary heat generatorwill be added in future amendments or revisions.

This part of IEC 62282 applies to systems where:

– the heat transfer fluid (heat output) is water or a mixture of water and additives to prevent corrosion and to prevent freezing;
– the heat transfer fluid circuit (heat output) can be designed for open or sealed operation;
– the maximum temperature of the heat transfer fluid (heat output) does not exceed 100 °C, or the value given in Clause B.1 for Europe or in Clause D.1 for the USA;
– the maximum pressure of the heat transfer fluid (heat output) circuit does not exceed 0,3 MPa, or the limits given in Clause B.1 for Europe, or C.4.3 for Japan or Clause D.1 for the USA;
– the maximum pressure of the domestic hot water circuit, if installed, does not exceed 0,1 MPa, or the limits as given in Clause D.1 for the USA.