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Binary power generation systems with capacity less than 100 kW – Performance test methods

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BINARY POWER GENERATION SYSTEMS WITH CAPACITY LESS THAN 100 KW – PERFORMANCE TEST METHODS

FOREWORD

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International Standard IEC 63277 has been prepared by IEC project committee 126: Binary power generation systems.

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

Draft	Report on voting
126/35/FDIS	126/38/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/standardsdev/publications.

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- withdrawn,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
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INTRODUCTION

This document deals with the performance test methods for binary power generation systems.

Binary power generation systems are capable of generating electric power even with a relatively low temperature heat source, such as factory waste heat as well as renewable energy, such as hot spring water, geothermal heat, solar heat, etc..

The system utilizes the heat of said heat source by transferring it to a working fluid via a heat transport medium, instead of directly heating working fluid. Hence, it is called “binary system.”

By standardizing the performance measuring method of binary power generation systems, energy conservation performance can be assessed legitimately, and it will also be reflected in energy saving measures based on actual use. Increase of suppliers motivation for realizing high energy saving performance is expected, and energy saving products will be promoted around the world.

In addition, the world demand for binary power generation systems is also rising, and it is expected to grow rapidly in the future.

BINARY POWER GENERATION SYSTEMS WITH CAPACITY LESS THAN 100 KW – PERFORMANCE TEST METHODS

1 Scope

This document specifies the performance test methods for binary power generation systems.

It defines the normalized test conditions and estimates the power generation efficiency of binary power generation systems.

It specifies the binary power generation systems having heating medium of non-pressurized hot water, with a maximum temperature less than 100 °C created by renewable energy or wasted heat in the industrial field and cold water as cooling medium.

It is applied to binary power generation systems with electric power generation capacity of less than 100 kW.

This document specifies performance testing, the standard conditions and the test methods for determining the electric power output and power generation efficiency of binary power generation systems.

It includes heating conditions (temperature, flow rate) and cooling conditions (temperature, flow rate).

The requirements of testing and rating contained in this document are based on the use of matched assemblies.

This document does not include binary power generation systems more than 100 kW in electric power generation capacity.

The subject heating medium here is non-pressurized hot water with a temperature of less than 100 °C.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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