

INTERNATIONAL STANDARD



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



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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Construction, power of binary power generation system	8
4.1 General construction of binary power generation system.....	8
4.2 Net power (Sending-end output) / Gross power (Generating power).....	8
5 Test condition.....	8
5.1 General test condition.....	8
5.2 Rated test condition	9
5.2.1 General	9
5.2.2 Tolerance of the rated net power	9
5.3 Accuracy of instruments used for measurement	9
5.3.1 Thermometer.....	9
5.3.2 Flowmeter.....	9
5.3.3 Three-phase power meter.....	9
5.3.4 Calibration.....	10
6 Measurement and calculation method of power output and power generation efficiency.....	10
6.1 Measurement method of net power (sending-end output).....	10
6.2 Measurement method of flow rate and temperature of hot water	11
6.2.1 Temperature measurement of hot water.....	11
6.2.2 Flow rate measurement of hot water.....	12
6.3 Measurement method of flow rate and temperature of cooling water	12
6.4 Calculation method of power output and power generation efficiency.....	12
6.4.1 Receiving heat amount from hot water in the evaporator Q_H (kW).....	12
6.4.2 Net power (sending-end output) L_{net} (kW).....	12
6.4.3 Power generation efficiency η_{eout}	13
7 Marking documentation.....	13
7.1 Marking on the product	13
7.2 Description of the technical documentation	13
Annex A (informative) Specification of grid-connected inverter for power generation systems	15
A.1 Outline of the equipment.....	15
A.2 Required specification.....	15
Annex B (informative) Calculation of electric power efficiency	16
Annex C (informative) Items of test report.....	17
Figure 1 – Binary power generation system	8
Figure 2 – Performance measuring method.....	11
Figure 3 – Example of arrangement of hot water flowmeter.....	12
Figure A.1 – Interconnection circuit diagram using grid-connect inverter.....	15
Table 1 – Test conditions.....	9

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

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Draft	Report on voting
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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.

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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

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