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**NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC
OF CHINA**

中华人民共和国国家标准

GB/T 3048.4-2007

Replace GB/T 3048.4-1994

**Test methods for electrical properties of electric
cables and wires-Part 4: Test of DC resistance of
conductors**

电线电缆电性能试验方法

第 4 部分：导体直流电阻试验

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Foreword

GB/T 3084 *Test methods for electrical properties of electric cables and wires* divided into 14 parts are as follows:

- Part 1: General;
- Part 2: Test of electrical resistivity of metallic materials;
- Part 3: Test of volume resistivity of semi conducting rubbers and plastics;
- Part 4: Test of DC resistance of conductors;
- Part 5: Test of insulation resistance;
- Part 7: Tracking resistance test;
- Part 8: AC voltage test;
- Part 9: Spark test of insulated cores;
- Part 10: Spark test of extruded protective sheaths;
- Part 11: Test for dielectric dissipation factor;
- Part 12: Partial discharge test
- Part 13: Impulse voltage test
- Part 14: DC voltage test
- Part 16: Surface resistance test

This part is part 4 of GB/T 3084.

This part will replace GB/T 3048.4-1994 *Test Methods for Determining Electrical Properties of Electric Cables and Wires-Measurement of D.C. Resistance of Conductors*.

This revision makes modifications to this part based on GB/T 1.1-2000 *Directives for Standardization-Part 1: Rules for the Structure and Drafting of Standards*.

The main changes in this part with respect to GB/T 3048.4-1994 are listed below:

- The title of the standard in English has been changed to “Test methods for electrical properties of electric cables and wires -Part 4: Test of DC resistance of conductors”;
- The general structure and layout of this part have been changed according to GB/T 1.1-2000:
 - 1) Clause 1 is “scope” (Clause 1 in 1994 edition; Clause 1 in this edition);
 - 2) Clause 2 is “normative references” (Clause 2 in 1994 edition; Clause 2 in this edition);

- 3) Clause 3 is “testing equipment” (Clause 3 in 1994 edition; Clause 3 in this edition);
 - 4) Clause 4 is “sample preparation” (Clause 4 in 1994 edition; Clause 4 in this edition);
 - 5) Clause 5 is “test procedure” (Clause 5 in 1994 edition; Clause 5 in this edition);
 - 6) Clause 6 is “test result and calculation” (Clause 6 in 1994 edition; Clause 6 in this edition);
 - 7) Clause 7 is “test record” (none in 1994 edition, clause 7 in this edition);
- The part including requirements is deleted from Clause 1 “scope” (Clause 1 in 1994 edition; Clause 1 in this edition);
 - Relevant standards are supplemented in Clause 2 “normative references” (Clause 2 in 1994 edition; Clause 2 in this edition);
 - Digital test instruments are clearly added to Clause 3 “testing equipment” (3.3 in 1994 edition; 3.3 in this edition);
 - Technical adjustment is made and the requirements of preparing water-blocked conductor samples is added to Clause 4 “sample preparation” (Clause 4 in 1994 edition; Clause 4, 4.3 in this edition);
 - The requirements on ambient temperature in Clause 1 and 4.5 in 1994 edition are incorporated into 5.1 in Clause 5 “test procedure” (Clause 1, 4.5 in 1994 edition, 5.1 in this edition);
 - Clause 6 “test result and calculation” is altered as follows:
 - 1) The calculation formula of the bridge method is deleted, and regulations on digital instrument readings are added (6.1, 6.2 in 1994 edition, 6.1.1, 6.1.2 in this edition);
 - 2) The calculation formula of temperature correction for routine tests is added (none in 1994 edition, 6.2.2 in this edition);
 - 3) The requirements for rules for rounding-off of computing results are deleted (6.4 in 1994 edition, none in this edition);
 - Clause 7 “test record” is added, specifying the specific contents the test records should write down (none in 1994 edition, and Clause 7 in this edition).

This part is proposed by China Electrical Equipment Industrial Association.

This part is under the jurisdiction of National Technical Committee on Wire and Cables of Standardization Administration of China.

Draft unit of this part: Shanghai Cable Research Center.

Main drafters of this part: Wang Shude, Xia Kairong, Yu Zhenming, Zhu Zhongzhu and Jin Biaoyi.

This part replaces the following historical editions issued:

GB 764-1965, GB 3048.4-1983, GB 3048.4-1994

Test methods for electrical properties of electric cables and wires-Part 4: Test of DC resistance of conductors

1 Scope

This Standard specifies the test apparatus, specimen preparation, test procedure for test of DC resistance of conductors as well as calculation and test record.

This Standard is applicable to measure DC resistance of conductors of electric wires and cables, the measuring range as follows:

- Kelvin (double) bridge ($2 \times 10^5 - 99.9$) Ω .
- Wheatstone (single) bridge 1 Ω -100 Ω and above.

The test methods specified in this Standard is not applicable to measure DC resistance of electric wires and cables which installed.

This Standard should be used with GB/T 3048.1.

2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 3048.1 *Test methods for electrical properties of electric cables and wires—Part 1: General*

3 Test Apparatus

3.1 Schematic diagram of bridge is given in Figure 1 and Figure 2.

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