



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

GB/T 1971-2021

**Rotating electrical machines - Terminal markings and direction
of rotation**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Terms and Definitions...	5
4 Symbols...	7
5 Direction of Rotation...	9
6 Rules for Terminal Markings...	9
7 Auxiliary Terminal Marking Rules...	21
Annex A (Normative) Connection Diagrams for Common Applications...	25
Bibliography...	37

Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1. Rules for the Structure and Drafting of Standardizing Documents.

This Document replaced GB/T 1971-2006 Rotating Electrical Machines - Terminal Markings and Direction of Rotation. Compared with GB/T 1971-2006, the major technical changes of this Document are as follows besides the structural adjustments and editorial modifications.

- a) Add the primary winding of the synchronous motor (see 6.5.1 of this Edition);
- b) Add the excitation winding of the synchronous motor (see 6.5.2 of this Edition);
- c) Add permanent magnet synchronous motor (see 6.5.3 of this Edition);
- d) Revise Figures 16 and 24, changing the symbol X into A (see Figures 16 and 24 of this Edition; Figures 16 and 24 of 2006 Edition);
- e) Add Figure A.11 "Variable Torque, Dual Voltage ($1.\sqrt{3}$), Nine Terminals" in the Annex (see Annex A of this Edition);
- f) Revise the symbol of the shunt winding terminal in Figures A.22 and A.23 in the Annex from F to E (see Annex A of this Edition; Annex A of 2006 Edition).

This Document equivalently adopts IEC 60034-8:2014 Rotating Electrical Machines - Part 8.

Terminal Markings and Direction of Rotation.

The Chinese documents that have a consistent correspondence with the international documents

cited in this document are as follows.

--- GB/T 755-2019 Rotating Electrical Machines - Rating and Performance (IEC 60034-1:2017, IDT);

--- GB/T 4026-2019 Basic and Safety Principles for Man-Machine Interface, Marking and Identification - Identification of Equipment Terminals, Conductor Terminations and Conductors (IEC 60445-2017, IDT);

--- GB/T 5465.1-2009 Graphical Symbols for Use on Electrical Equipment - Part 1. Overview and Classification (IEC 60417 Database. 2007-01, MOD).

This Document made the following editorial modifications.

--- Change the standard name into Rotating Electrical Machines - Terminal Markings and Direction of Rotation, so as to keep consistent with Chinese technical standard system.

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by China Electrical Equipment Industry Association.

This Document shall be under the jurisdiction of National Technical Committee on Rotating Motor of Standardization Administration of China (SAC/TC 26).

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The historical editions replaced by this Document are as follows.

--- GB 1971-1980 was first-time published in 1980; first-time revised in 2006;

--- It is the second-time revised hereby.

Rotating Electrical Machines - Terminal Markings and
Direction of Rotation

1 Scope

This Document applies to A.C. and D.C. machines and specifies.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

IEC 60034-1 Rotating Electrical Machines - Part 1.Rating and Performance

IEC 60417-1 Graphical Symbols for Use on Equipment - Part 1.Overview and
Application

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in IEC 60034-1 and the following apply.

One or more winding elements associated with a particular phase.

Order in which the voltages successively reach their maximum positive values between

supply

conductors.

4 Symbols

BA. AC brakes

BD. DC brakes

BW. Brush-wear detector

5 Direction of Rotation

The direction of rotation shall be that of the shaft observed when facing the D-end.

Machines with terminal markings according to this standard shall have a clockwise direction of

rotation.

6 Rules for Terminal Markings

When several leads or conductors are provided to share the current, the terminal markings shall

be identified by an additional numerical suffix separated by a hyphen. See Figure 10.

The termination for the protective earthing conductor shall be marked with the letters PE

according to IEC 60445 (or marked with symbol IEC 60417-5019.2006-08). No other terminals

shall be so marked.

When several ends of winding elements are joined, the terminal marking shall use the lower suffix; see Figure 8.

7 Auxiliary Terminal Marking Rules

Three-phase, single voltage

The auxiliary terminal marking for single voltage of three-phase machine is shown in Figure 27.

The auxiliary terminal marking for two-lead devices of types TB, TC, TM, TN and TP is shown

in Figure 29.