

# IEEE Standard Electrical Power System Device Function Numbers

Sponsor  
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of the  
**IEEE Power Engineering Society**

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**Abstract:** The definition and application of function numbers for devices used in electrical substations and generating plants and in installations of power utilization and conversion apparatus are covered. The purpose of the numbers is discussed, and 94 numbers are assigned. The use of prefixes and suffixes to provide a more specific definition of the function is considered. Device contact designation is also covered.

**Keywords:** device functions, device function numbers, function numbers, switchgear

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## Foreword

(This foreword is not a part of IEEE C37.2-1991, IEEE Standard Electrical Power System Device Function Numbers.)

This standard is an update of IEEE C37.2-1987, IEEE Standard Electrical Power System Device Function Numbers. Definitions of some device functions have been improved for present applications, and additional suggested suffix letters have been indicated. Previous revisions were approved as standards in 1987, 1979, 1962, 1956, 1945, and 1937. The original work on this subject was done by the American Institute of Electrical Engineers and published in 1928 as AIEE No. 26.

Preparation of this standard was done by a working group of the Data Acquisition, Processing, and Control Systems Subcommittee, Substations Committee. Membership of the working group during the preparation of this revision was:

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# IEEE Standard Electrical Power System Device Function Numbers

## 1. Scope and References

**1.1 Scope.** This standard applies to the definition and application of function numbers for devices used in electrical substations and generating plants and in installations of power utilization and conversion apparatus.

**NOTE:** Although the wording of this standard is directed specifically to equipment comprising conventional electromechanical devices, it also applies to equipment consisting totally, or in part, of electronic or solid-state devices.

**1.2 References.** This standard shall be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision shall apply.

[1] ASME Y1.1-1989, Abbreviations for Use on Drawings and in Text.<sup>1</sup>

[2] IEEE Std 315-1975, IEEE Standard Graphic Symbols for Electrical and Electronics Diagrams (ANSI).<sup>2</sup>

[3] IEEE C37.1-1987, IEEE Standard Definition, Specification, and Analysis of Systems Used for Supervisory Control, Data Acquisition, and Automatic Control.

[4] IEEE C37.20.1-1987, IEEE Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear (ANSI).

[5] IEEE C37.20.2-1987, IEEE Standard for Metal-Clad and Station-Type Cubicle Switchgear (ANSI).

## 2. Purpose of Device Function Numbers

A device function number, with an appropriate prefix and suffix where necessary, is used to identify the function of each device in all types of partial-automatic and automatic switchgear and in many types of manual switchgear. These numbers are to be used in drawings, elementary and connection diagrams, instruction books, publications, and specifications. In addition, for automatic switchgear, the number may be placed on, or adjacent to, each device on the assembled equipment so that the device may be readily identified.

**NOTE:** These device function designations, which have been developed as a result of usage over many years, may define the actual function the device performs in equipment, or they may refer to the electrical or other quantity to which the device is responsive. Hence, there may be in some instances a choice of the function number to be used for a given device. The preferable choice to be made in all cases should be the one that is recognized to have the narrowest interpretation so that it most specifically identifies the device in the minds of all individuals concerned with the design and operation of the equipment.

## 3. Standard Device Function Numbers

**3.1 Standard Device Function Numbers.** Each number with its corresponding function name and the general description of each function is listed below.

**NOTE:** When alternate names and descriptions are included under the function, only the name and description that applies to each specific case should be used. In general, only one name for each device, such as relay, contactor, circuit breaker, switch, or monitor, is included in each

<sup>1</sup>ASME publications are available from the American Society of Mechanical Engineers, 22 Law Drive, Fairfield, NJ, 07007, USA.

<sup>2</sup>IEEE publications are available from the Institute of Electrical and Electronics Engineers, Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, USA.