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(Revision of ANSI Std C37.11-1979)

# IEEE Standard Requirements for Electrical Control for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis

Sponsor  
**Switchgear Committee  
of the  
IEEE Power Engineering Society**

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**Abstract:** Standard requirements for all types of electrical control circuits for ac high-voltage breakers rated above 1000 V are given. This standard is applicable for any type of power-operated mechanism and for both ac and dc control power. Only basic control elements of the circuit breaker, including reclosing where required, are included in this standard. Devices or circuits for protective relaying, special interlocking, etc., are not included.

**Keywords:** ac high-voltage circuit breakers, alarm circuits, auxiliary contacts, auxiliary switch, closing, control schemes, electrical control, grounding, heater circuits, metal-clad switchgear, metal-enclosed switchgear, motor circuits, opening, re-closing, tripping

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## Introduction

(This introduction is not a part of IEEE Standard Requirements for Electrical Control for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.)

This standard is a revision of ANSI Std C37.11-1979. This revision is editorial in nature. There are no substantive changes in Figures 1 through 8, nor of the requirements. The purpose is to bring this standard up-to-date and in line with present-day requirements for ac high-voltage power circuit breakers and to bring it into agreement with IEEE Std C37.100-1992, *IEEE Standard Definitions for Power Switchgear*.

As reflected in the title, this standard applies to ac high-voltage circuit breakers rated on a symmetrical current basis. A wide variety of control schemes is now in use by companies. Many of these users consider it essential that their particular scheme be continued so as to maintain unified operating practices within their company. It has been necessary, therefore, to set up certain preferred arrangements for wiring at the circuit breaker. These arrangements, in effect, constitute standards for production of the circuit breakers. They are, however, sufficiently versatile to permit the majority of users to connect the circuit breaker to their external circuits to achieve the required control scheme without changing the internal wiring of the circuit breaker. Diagrams of typical operating connections are included in this standard to demonstrate this versatility.

This standard includes only the basic control elements of the circuit breaker, including reclosing where required. It does not include devices or circuits for protective relaying, special interlocking, etc., since these are dependent upon the specific application of a particular circuit breaker. This standard is not intended to preclude the possibility of obtaining, as additional equipment, such devices or circuits, including auxiliary switches in excess of the specified minimum requirements, where necessary in a specific application.

It is not intended that the standard be considered inflexible as to future change. Future developments in both application and manufacturing, as well as further study of existing requirements, should result in revision and expansion of the standard.

The explanatory notes that appear in small type are included to give the user of this standard the reason or background for certain requirements.

The Standards Committee on Power Switchgear, C37, which reviewed and approved this standard, had the following personnel at the time of approval:

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This standard was first developed by the Committee on Power Circuit Breaker Control and the Committee on Electric Switching and Switchgear of the Association of Edison Illuminating Companies. The present revision was prepared by the Working Group for the High-Voltage Circuit Breaker Subcommittee of the IEEE Switchgear Committee. The Working Group included the following members:

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