

American National Standard

**separable insulated connectors for
power distribution systems
above 600 V**

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An American National Standard

**IEEE Standard for
Separable Insulated Connectors for
Power Distribution Systems
Above 600 V**

Sponsor

**Transmission and Distribution Committee of the
IEEE Power Engineering Society**

Approved September 9, 1976

IEEE Standards Board

Secretariat

**National Electrical Manufacturers Association
Edison Electric Institute
Institute of Electrical and Electronics Engineers, Inc**

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Foreword

(This foreword is not part of ANSI/IEEE Std 386-1977, Separable Insulated Connectors for Power Distribution Systems Above 600 V.)

This standard was developed in response to a need created by the rapid expansion of underground distribution systems. A key element which allowed this expansion to become a reality is the separable insulated connector. This device provides for simple and inexpensive connection and switching to transformers and other equipment used in underground distribution.

When separable insulated connectors become available, the Institute of Electrical and Electronics Engineers and the National Electrical Manufacturers Association worked cooperatively to develop a document that would define the interfaces, ratings, and test conditions for the device. The success of that cooperative effort is apparent from both the vast number of these devices now in interchangeable use in the field and their enviable safety record.

Because the technology within the field of underground distribution is under constant development, with accompanying new products and distribution schemes, it is necessary to provide for constant review of these connector requirements and to make participation in this ongoing activity available to all concerned organizations. To accomplish this purpose and provide a mechanism for development of additional related standards, American National Standards Committee C119 was organized under the joint Secretariat of the Edison Electric Institute, the Institute of Electrical and Electronics Engineers, and the National Electrical Manufacturers Association, with a balanced representation of users', manufacturers', and general interest expertise. It is the hope and the expectation of C119 that those who have comments and additions may assist in the revision activity by forwarding their comments to C119, American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.

This revision was developed by ANSI Subcommittee C119.2 under auspices of the Distribution Subcommittee of the Transmission and Distribution Committee of the IEEE Power Engineering Society. To the extent available, data used in it were gathered from pertinent existing industry standards for power cable, distribution transformers, and other electrical apparatus.

One of the primary objectives of this standard is to provide a basis for interchangeability at the operating interface between connector elements supplied by different manufacturers. However, in order to avoid exclusion of any connector design, a multiplicity of interfaces which are not interchangeable with each other is included. Hence a purchaser must select a design for his particular need. Users and manufacturers are encouraged to use the designs illustrated.

At the time it developed the first revision of this standard, the ANSI Subcommittee on Separable Insulated Connectors had the following membership:

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A. C. Westrom

The present document serves as the basis for a revision activity that is already under way. Present membership of C119 consists of the following organizations:

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Organization Represented

Aluminum Association
Department of the Army
Department of the Navy
Edison Electric Institute

Name of Representative

Paul V. Mara
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When the IEEE Standards Board approved this standard on September 9, 1976, it had the following membership:

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An American National Standard

IEEE Standard for Separable Insulated Connectors for Power Distribution Systems Above 600 V

1. Scope

This standard establishes definitions, electrical ratings, tests, and interchangeable construction features for load-break and dead-break separable insulated connectors rated 601 V and above, 600 A or less, for use on power distribution systems.

2. Definitions

The following definitions are the intended meanings of terms used in this standard. The term *connector* as used in this standard means separable insulated connector.

bushing well. An apparatus bushing having a cavity for insertion of a connector element.

continuous current rating. The designated rms alternating or direct current which the connector can carry continuously under specified conditions.

corona voltage level. The voltage at which corona discharge does not exceed a specified level following the application of a specified higher voltage.

dead-break connector. A connector designed to be separated and engaged on de-energized circuits only.

environmental temperature. The temperature of the surrounding medium, such as air, water, or earth, into which the heat of the connector is dissipated directly, including the effect of

heat dissipation from associated cables and apparatus.

fault-closure current rating. The designated rms fault current which a load-break connector can close under specified conditions.

load-break connector. A connector designed to close and interrupt current on energized circuits.

maximum voltage rating. The highest phase-to-ground voltage (rms) at which a connector is designed to operate.

operating interface. The surfaces at which a connector is normally separated.

separable insulated connector. A fully insulated system for terminating and electrically connecting an insulated power cable to electrical apparatus, other power cables, or both, so designed that the electrical connection can be readily established or broken by engaging or separating mating parts of the connector at the operating interface.

short-time current rating. The designated rms current which a connector can carry for a specified time under specified conditions.

switching current rating. The designated rms current which a load-break connector can connect and disconnect for a specified number of times under specified conditions.

test point. A capacitively coupled terminal for use with sensing devices.

withstand voltage. The specified voltage which, under specified conditions, can be applied to insulation without causing flashover or puncture.