

# C62.32™

## IEEE Standard Test Methods for Low-Voltage Air Gap Surge-Protective Device Components (Excluding Valve and Expulsion Types)

IEEE Power Engineering Society

Sponsored by the  
Surge Protective Devices Committee



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(Revision of  
IEEE Std C62.32-1981)

# IEEE Standard Test Methods for Low-Voltage Air Gap Surge-Protective Device Components (Excluding Valve and Expulsion Types)

Sponsor

**Surge Protective Devices Committee**  
of the  
**IEEE Power Engineering Society**

Approved 12 April 2005

**American National Standard Institute**

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**IEEE-SA Standards Board**

**Abstract:** This standard applies to air gaps for overvoltage protection applications on systems with operating voltages equal to or less than 600 V rms. This standard contains a series of standard tests for determining the electrical characteristics of these air gap devices. This standard's test criteria and definitions provide a common engineering language beneficial to users and manufacturers of air gap surge protective devices.

**Keywords:** ac discharge current, air backup gap, air gap, air gap surge protector, back up gap, capacitance, current, discharge current, dc breakdown voltage, dc holdover voltage, dc impulse voltage, dc sparkover voltage, discharge voltage, fail safe, follow on current, impulse life, insulation resistance, maximum single discharge, sparkover, wave shape

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# Introduction

**This introduction is not a part of IEEE Std C62.32-2004, IEEE Standard Test Methods for Low-Voltage Air Gap Surge-Protective Device Components (Excluding Valve and Expulsion Types).**

The low-voltage air gap surge-protective device is a gap-type overvoltage limiter for use on communications, power, and signaling circuits. It has been used in one form or another for many years.

With the development of newer and more sophisticated electronic apparatus, which was usually more vulnerable to the electrical environment, it became evident that there was an industry-wide requirement for improved protective devices. An effort to address this problem was initiated in 1970 when the IEEE Surge Protective Devices Committee formed its Low-Voltage Surge-Protective Devices Working Group.

It soon became apparent that there were no standard terms to describe these devices or standard tests that would permit comparison with other similar or different devices. The working group first addressed the gas tube arrester and published IEEE Std 465.1-1977 (later redesignated as ANSI/IEEE Std C62.31), IEEE Standard Test Specifications for Gas Tube Surge-Protective Devices.

Experts were drawn from any fields ranging from communications and power utilities, through electronics manufacturers, to manufacturers of Air Gap Surge-Protective Devices. The diverse requirements, experiences, and vocabularies of these representatives were melded to produce this standard, which should be of service to all potential users.

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Other former members of the working group who contributed to this standard were:

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