NEMA Standards Publication


ANSI/NEMA C93.1-1999

# American National Standard for Requirements for Power-Line Carrier Coupling Capacitors and Coupling Capacitor Voltage Transformers (CCVT)

National Electrical Manufacturers Association

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900 • Rosslyn. VA 22209
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# Requirements for Power-Line Carrier Coupling Capacitors and Coupling Capacitor Voltage Transformers (CCVT)

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*Published by*

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Rosslyn, Virginia 22209

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## Foreword (This Foreword is not part of American National Standard ANS/NEMA C93.1-1999)

This document was developed by Accredited Standards Committee C93, Power-Line Carrier Equipment and Coupling Capacitor Voltage Transformers. During the development of the standard, the Committee considered input from a balanced group representing consumer, producer, and general-interest viewpoints, which it harmonized and integrated into the standard in its present, approved form.

Accredited Standards Committee C93 was established to coordinate, revise, and update the existing documents into an effective group of American National Standards, including this standard for coupling capacitors and CCVTs. A separate standard will be developed to cover each type of equipment described in the Committee scope.

This standard is related to American National Standard Requirements for Power-Line Carrier Line Traps, ANSI/NEMA C93.3, and American National Standard Requirements for Power-Line Carrier Line Tuning Equipment, ANSI/NEMA C93.4.

It is recognized that there are no requirements for ferroresonance suppression or primary short-circuit transient response; however, the recommended test procedures are given in 6.2.16 and 6.2.17 of the standard. If meaningful requirements are determined by the industry, they will be adopted in future revisions of this standard.

For metering service coupling capacitor voltage transformers, this standard aligns with American National Standard Requirements for Instrument Transformers, ANSI C57.13, where applicable.

Suggestions for improvement of this standard will be welcome. They should be sent to the Secretary, ASC C93, c/o National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

This standard was processed and approved for submittal to ANSI by Accredited Standards Committee on Power-Line Carrier Equipment and Coupling Capacitor Voltage Transformers, C93. Committee approval of the standard does not necessarily imply that all members voted for its approval. At the time it approved this standard, the C93 committee had the following members:

| Walter Seamon, Chairman | Khaled Masri, Secretary |
|---|---|
| *Organization Represented* | *Name of Representative* |
| Edison Electric Institute | James Benton<br>Gary Miller (Alternate)<br>Robert Morton |
| Institute of Electrical & Electronics Engineers | George Morgan |
| Manufacturers | Ross Presta (Alternate)<br>Roger Ray<br>Jorge Ribeiro<br>Miriam Sanders (Alternate)<br>Tim Phillipe (Alternate)<br>Hans Backskog<br>Walter Seamon |
| Tennessee Valley Authority | Robert Bratton |

# for Power-Line Carrier Coupling Capacitors and Coupling Capacitor Voltage Transformers (CCVT) – Requirements

## 1 Scope

This standard applies to capacitors for coupling power-line carriers and for reducing rate of rise of breaker transient recovery voltage, and to coupling capacitor voltage transformers (CCVT) for connection to a high voltage power circuit, between line and ground, to supply a low voltage for measurement, control, and protective functions. A CCVT may or may not have provision for power-line carrier coupling.

This standard does not include bushing potential devices, or secondary compensated-field adjustable CCVTs.

## 2 Referenced and related standards

### 2.1 Referenced American National Standards

This standard is intended to be used with the following American National Standards. When these referenced standards are superseded by a revision approved by the American National Standards Institute, Inc., the revision shall apply:

| | |
|---|---|
| ANSI/NEMA C93.4-1984, | *Requirements for Power Line Carrier Line Tuning Equipment* |
| ANSI/IEEE 4-1995, | *Techniques for High-Voltage Testing* |
| ANSI/IEEE 100-1992, | *The Standard Dictionary of Electrical and Electronics Terms* |
| ANSI/IEEE C62.11-1993, | *IEEE Standard for Metal-Oxide Surge Arresters for Alternating Current Power Circuits* |
| ANSI/IEEE C62.31-1987 (R1993), | *IEEE Standard Test Specifications for Gas-Tube Surge-Protective Devices* |
| ANSI/ISA S82.01-1988, | *Safety Standard for Electrical and Electronic Test, Measuring, Controlling and Related Equipment—General Requirements* |
| ANSI/ISA S82.02-1988, | *Safety Standard for Electrical and Electronic Test, Measuring, Controlling and Related Equipment—Electrical and Electronic Test and Measuring Equipment* |
| ANSI/ISA S82.03-1988, | *Safety Standard for Electrical and Electronic Test, Measuring, Controlling and Related Equipment—Electrical and Electronic Process Measurement and Control Equipment* |

### 2.2 Other referenced standards

This standard is also intended to be used with the following standard:

NEMA Standards Publication No. 107-1964, *Methods of Measurement of Radio Influence Voltage (RIV) of High Voltage Apparatus* (R1971, 1976, 1981).