

**American National Standard
for Transformers —
Pad-Mounted, Compartmental-Type, Self-Cooled, Single-
Phase Distribution Transformers with Separable Insulated
High-Voltage Connectors; High Voltage, 34 500 GrdY/
19 920 Volts and Below; Low Voltage, 240/120 Volts;
167 kVA and Smaller — Requirements**

Secretariat

National Electrical Manufacturers Association

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American National Standards Institute, Inc

Foreword (This Foreword is not part of American National Standard C57.12.25-1990.)

Accredited Standards Committee on Transformers, Regulators, and Reactors, C57, has for many years been developing and correlating standards on transformers and regulators. The data used in this work have been gathered from many sources, including the standards of the Institute of Electrical and Electronics Engineers and the National Electrical Manufacturers Association, reports of committees of the Edison Electric Institute, and others.

This standard was prepared by the Subcommittee on Distribution Transformers, Overhead and Pad-Mounted, C57.12.2.

Suggestions for improvement of this standard will be welcome. They should be sent to the National Electrical Manufacturers Association, 2101 L Street, NW, Washington, DC 20037.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Transformers, Regulators, and Reactors, C57. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the C57 Committee had the following members:

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1. Scope

1.1

This standard is intended for use as a basis for determining performance, interchangeability, and safety of the equipment covered, and to assist in the proper selection of such equipment.

1.2

This standard covers certain electrical, dimensional, and mechanical characteristics, and takes into consideration certain safety features of single-phase, 60-Hz, mineral-oil-immersed, self-cooled, pad-mounted, compartmental-type distribution transformers with separable insulated high-voltage connectors. These transformers are rated 167 kVA and smaller, with high voltages of 34500 GrdY/19 920 volts and below for operation between one phase and grounded neutral, and low voltages of 240/120 volts. These transformers are generally used for step-down purposes from an underground primary cable supply.

NOTE – Refer to latest federal regulations concerning PCB contamination in transformers.

1.3

This standard covers two connector and terminal arrangements for loop feed systems. Either Type 1 (see Figure 1) or Type 2 (see Figure 2) arrangements shall be specified.

1.4

This standard does not cover the electrical and mechanical requirements of any accessory devices that may be supplied with the transformer.

2. Normative references

2.1 General

All characteristics, definitions, terminology, voltage designation, and tests, except as otherwise specified herein, shall be in accordance with the following American National Standards. The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI C57.12.20-1988, Transformers - Overhead-Type Distribution Transformers, 500 kVA and Smaller: High Voltage, 34 500 Volts and Below; Low Voltage, 7970/13 800Y Volts and Below

ANSI C57.12.28-1988, Switchgear and Transformers - Pad-Mounted Equipment - Enclosure Integrity

ANSI C57.12.70-1978 (R1986), Terminal Markings and Connections for Distribution and Power Transformers

ANSI/IEEE C57.12.00-1987, General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers

ANSI/IEEE C57.12.80-1978 (R1986), Terminology for Power and Distribution Transformers

ANSI/IEEE C57.12.90-1987, Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers and Guide for Short-Circuit Testing of Distribution and Power Transformers

ANSI/IEEE C57.91-1981, Guide for Loading Mineral-Oil-Immersed Overhead and Pad-Mounted Distribution Transformers Rated 500 kVA and Less with 65°C or 55°C Average Winding Rise

ANSI/IEEE 386-1985, Separable Insulated Connector Systems for Power Distribution Systems above 600 V

3. Ratings

3.1 Kilovolt-ampere ratings

Kilovolt-ampere ratings are continuous and based on not exceeding either a 65°C average winding temperature rise or an 80°C hot-spot conductor temperature rise. The temperature rise of the insulating oil shall not exceed 65°C when measured near the top of the tank. These kilovolt-ampere ratings are based on the usual temperature and altitude service conditions specified in ANSI/IEEE C57.12.00-1987. The kilovolt-ampere ratings shall be as follows:

25	75
37.5	100
50	167

3.2 Voltage ratings and tap ratings

3.2.1

Voltage ratings shall be in accordance with Table 1 and 6.2.1. For series-multiple transformers, the voltage change shall be made with a switch handle located in the high-voltage portion of the terminating compartment. The handle shall be designed to prevent accidental operation by requiring a preliminary step before the voltage setting can be changed. Actual voltages or position numbers corresponding to the nameplate shall be clearly identifiable near the