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American National Standard for Thermal Demand Meters

National Electrical Manufacturers Association

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(This Foreword is not a part of American National Standard for Thermal Demand Meters, ANSI C12.5-1978.)

Foreword

This American National Standard provides recommended minimum requirements for general-service-type thermal watt demand meters and watthour-thermal watt demand meters.

Except that performance requirements are now part of American National Standard Code for Electricity Metering, ANSI C12-1975, this standard is equivalent to and supersedes the requirements of the former AEID-EEI-NEMA standards for Thermal Demand Meters, EEI Pub. No. MSJ-5-1967, NEMA Pub. No. EI-15-1967. For convenience in using this standard, the performance requirements are included as an Appendix.

This standard and other former AEIC-EEI-NEMA standards on meters and meter devices were referred to the American National Standards Committee on Electricity Metering, C12, for approval and publication as an American National Standard.

Suggestions for improvement of this standard will be welcome. They should be sent to the American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.

This standard was processed and approved for submittal to ANSI by American National Standards Committee for Electricity Metering, C12. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the C12 Committee had the following members:

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(General Electric Company)
J. H. Malloy, Jr.
(Philadelphia Electric Company)
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American National Standard for Thermal Demand Meters

1. Scope

This standard covers the class designations, voltage and frequency ratings, scale values, demand intervals, multiplying constants, mounting dimensions, terminal arrangements, and other features of general-service-type thermal watt demand meters and watthour-thermal watt demand meters. Although this standard specifically refers to watt demand meters, it is suggested that ampere and volt-ampere demand meters follow the applicable requirements so far as practicable.

2. Definitions

Only definitions not included in American National Standard Code for Electricity Metering, ANSI C12-1975, are provided here. Definitions that pertain to this standard and are part of ANSI C12-1975 are included in Appendix A.

2.1 Bottom-Connected Thermal Watt or Watthour-Thermal Watt Demand Meter. A bottom-connected thermal watt demand meter or watthour-thermal watt demand meter is one having a bottom-connection terminal assembly.

2.2 Detachable (Socket-Mounted) Thermal Watt or Watthour-Thermal Watt Demand Meter. A detachable thermal watt demand meter or watthour-thermal watt demand meter is one having bayonet-type terminals arranged on the back of the demand meter for insertion into matching jaws of a meter socket.

2.3 Self-contained Thermal Watt or Watthour-Thermal Watt Demand Meter. A self-contained thermal watt demand meter or watthour-thermal watt demand meter is one in which the terminals are arranged for connection to the circuit being measured without the use of external instrument transformers.

2.4 Thermal Watt Demand Meter. A thermal watt demand meter is a lagged-demand meter that transforms electric energy to heat energy and indicates or records the maximum kilowatt demand.

2.5 Transformer-Rated Thermal Watt or Watthour-Thermal Watt Demand Meter. A transformer-rated thermal watt demand meter or watthour-thermal watt demand meter is one in which the terminals are arranged for connection to the secondary windings of external instrument transformers.

2.6 Watthour-Thermal Watt Demand Meter. A watthour-thermal watt demand meter is a thermal watt demand meter and a watthour meter installed in a common case.

3. Requirements Applicable to All Thermal Demand Meters

3.1 General

3.1.1 Thermal demand meters shall be substantially constructed of good material in a workmanlike manner with the objective of attaining stability of performance and sustained accuracy over long periods of time and over wide ranges of operating conditions with a minimum of maintenance.

3.1.2 The watthour meter contained in a watthour-thermal watt demand meter shall be in accordance with applicable standards for watthour meters insofar as practicable. (See ANSI C12-1975 and American National Standard for Watthour Meters, ANSI C12.10-1978.)

3.1.3 The envelope dimensions and terminal arrangements and dimensions shall conform with applicable standards for watthour meters. (See ANSI C12.10-1978.)

3.1.4 Finish. All thermal watt demand meters and watthour-thermal watt demand meters shall meet the Class I general-purpose finish requirements or, if specified, Class II finish, as shown in Section 4.

3.1.5 Raintightness. When mounted in normal operating position in or on a meter mounting intended for outdoor installation, thermal demand meters shall pass the test described in Underwriters Laboratories Research Bulletin No. 23, "Rain Tests of Electrical Equipment - Methods and Apparatus," September 1941.[1]

3.1.6 General. Other performance requirements not specifically covered by this standard shall be consistent with ANSI C12-1975.

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[1] Available from Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, Ill. 60062.