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Residential Controls - Temperature Limit Controls for Electrical Baseboard Heaters

National Electrical Manufacturers Association

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Residential Controls—Temperature Limit Controls for Electrical Baseboard Heaters

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Foreword

This Standards Publication defines the basic standards for rating, classification, construction, testing, and performance of temperature limits controls for application on electric baseboard heaters. It has been developed in the public interest and is designed to promote a better understanding between the manufacturer and the user, where possible, to provide direct interchangeability through industry standardization, and to assist the user in selecting the proper controls for his or her particular application.

These standards are periodically reviewed by the Residential Controls Section of NEMA for any revisions necessary to keep them up-to-date with advancing technology. Proposed or recommended revisions should be submitted to:

Vice President, Technical Services
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Rosslyn, Virginia 22209

This Standards Publication was developed by the Residential Controls Section. Section approval of the standard does not necessarily imply that all Section members voted for its approval or participated in its development. At the time it was approved, the group was composed of the following members:

Apcom Inc.—Franklin, TN
Emerson Electric Company, White-Rodgers Division—St. Louis, MO
GE Industrial Systems—Morrison, IL
Honeywell, Inc.—Golden Valley, MN
Therm-O-Disc—Mansfield, OH

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History of Standards

The Residential Controls Section of NEMA was formed in 1940 to promote the standardization of products within the scope of the Section. These product standards cover definitions, ratings, performance, testing, and dimensions. NEMA standards are voluntary and are designed to eliminate misunderstandings between the purchaser and the manufacturer.

This publication is one of a series sponsored by the Residential Controls Section. Other publications in this series are identified as Pub. No. DC XX (followed by the year of issue).

The Technical Committee of the Residential Controls Section of NEMA first formed a subcommittee to develop temperature limit control standards for electric baseboard heaters in 1960. The deliberations of this committee resulted in the NEMA Standards Publication for *Temperature Limit Controls for Electric Baseboard Heaters*, DC 10-1964, which was later revised and superseded first by DC 10-1971, by DC 10-1977, and then by DC 10-1983.

The present publication, DC 10-2009, is published in accordance with NEMA's policy of periodic review and revision to keep NEMA Standards contemporary with industry needs and technological advancement. It revises the 1983 edition.

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Section 1
GENERAL

1.1 SCOPE

This Standards Publication describes constructional details, classifications, ratings, and other characteristics of temperature limit controls and control systems of the linear-sensing or spot types which are suitable for mounting inside electric baseboard heaters for the purpose of disconnecting the electrical load when the heater reaches abnormally high temperatures.

The controls and control systems described in this Standards Publication are nonadjustable, operate at factory preset temperatures, and may be of the automatic- or manual-reset type.

1.2 REFERENCES

The following normative documents contain provisions, which through reference in this text, constitute provisions of this Standards Publication. By reference herein these publications are adopted, in whole or in part as indicated, in this Standards Publication.

Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL 60062

ANSI UL 873 *Standard for Temperature-Indicating and -Regulating Equipment*

1.3 DEFINITIONS

automatic-reset control: A control that opens and recloses the circuit automatically.

cut-in temperature: The temperature in degrees C (degrees F) at which the circuit to the electrical load is restored automatically or can be restored by manual resetting action.

cut-out temperature: The factory preset temperature in degrees C (degrees F) at which the control opens the circuit to the electrical load.

cut-out temperature drift: The change in degrees C (degrees F) in the cut-out temperature as a result of a continuous cycling of the temperature limit control.

differential: The difference between the cut-out and the cut-in temperatures.

hot spot: That portion of the sensing element that causes the control to cut-out when it is subjected to the abnormally high temperature that it is intended to limit. It is stated in terms of a specific length. (See Table 4-1.)

load, electrical: The resistive noninductive controlled load expressed in volts and amperes or watts; or the inductive controlled load expressed in volts and amperes.

manual-reset control: A control that opens the circuit automatically and is reclosed manually.

pilot duty: A class of operation in which the ultimate electrical load is controlled by auxiliary means.

rating, electrical: The maximum specified electrical load capability of the control.