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C828-13

Performance requirements for thermostats used with individual room electric space heating devices

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C828-13

March 2013

Title: *Performance requirements for thermostats used with individual room electric space heating devices*

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C828-13

***Performance requirements for
thermostats used with individual
room electric space heating devices***



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*Published in March 2013 by CSA Group
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6*

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or call toll-free 1-800-463-6727 or 416-747-4044.*

ISBN 978-1-77139-001-9

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Preface

This is the third edition of CSA C828, *Performance requirements for thermostats used with individual room electric space heating devices*. It supersedes the previous editions published in 2006 and 1999.

This Standard deals with the thermal regulation and electromagnetic compatibility of thermostats used with individual room electric space heating devices

The requirements specified in this Standard are intended to enhance user comfort, facilitate energy conservation, and address issues related to electromagnetic interference. Thermostats that use solid state components are capable of producing radiated and conducted electromagnetic interference that can create disturbances on power lines and affect the functioning of communication, security, and other devices. In addition, such thermostats can be susceptible to radiated and conducted electromagnetic interference already present on power lines. It is essential to protect these thermostats from electromagnetic interference and to limit their ability to produce interference.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on Performance of Thermostats, under the jurisdiction of the Technical Committee on Residential Equipment and the Strategic Steering Committee on Performance, Energy Efficiency, and Renewables, and has been formally approved by the Technical Committee.

Notes:

- 1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- 2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- 3) This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.
- 4) To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:
 - a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - b) provide an explanation of circumstances surrounding the actual field condition; and
 - c) where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.
- 5) This Standard is subject to periodic review, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include “Proposal for change” in the subject line:
 - a) Standard designation (number);
 - b) relevant clause, table, and/or figure number;
 - c) wording of the proposed change; and
 - d) rationale for the change.

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Performance requirements for thermostats used with individual room electric space heating devices

1 Scope

1.1 General

This Standard specifies performance requirements for thermostat models intended for line-voltage (120 to 240 V) switching of a controlled resistive heating load.

The models covered by this Standard are as follows:

- a) wall-mounted line-voltage thermostats used with baseboards, panel convectors, fan-forced heaters or radiant floors;
- b) built-in line-voltage thermostats (up to 1500 W) used in baseboards, panel convectors or fan-forced heaters; and
- c) two-component thermostats.

This Standard's requirements apply only to local zone thermostats; they do not apply to central heating units under the control of a single thermostat and thermostats in portable heaters.

1.2 Thermostats not covered by this Standard

Thermostats used exclusively or built-in in the following units are excluded:

- a) ceiling-mounted fan-forced heaters;
- b) floor-mounted fan-forced;
- c) kick space; and
- d) fireplaces.

1.3 Thermal regulation and power line quality

This Standard specifies performance requirements covering thermal regulation and power line quality. The thermal regulation requirements are based on testing in a dual-climate test chamber. The power line quality requirements establish the level of emissions that might be generated by line-voltage thermostats and the extent of line-voltage thermostat susceptibility to electromagnetic disturbances that can be present on power lines.

1.4 Terminology

In CSA Standards, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; “may” is used to express an option or that which is permissible within the limits of the standard; and “can” is used to express possibility or capability. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.