ANSI B109.4

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Self-Operated Diaphragm-Type Natural Gas Service Regulators

For Nominal Pipe Size 1¼ inches (32 mm) and smaller with outlet pressures of 2 psig (13.8 kPa) and less

Secretariat

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AMERICAN GAS ASSOCIATION (AGA)
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PREFACE

This publication presents a basic standard for the safe and reliable operation and the substantial and durable construction of self-operated diaphragm-type natural gas service regulators for nominal pipe size of 1¼ inches (32 mm) and smaller with outlet pressure of 2 psig (3.48 kPa) and less. This work is the result of years of experience that has been supplemented by extensive research. The standard is intended to meet the minimum design, material, performance and testing requirements for efficient use of service regulators.

It is recognized that during any transition period to the metric system, sizes and dimensions need to be expressed in either the metric system or the inch-pound system or both. In this document, both systems are used with the inch-pound units given preference. In most cases, a soft conversion from existing inch-pound values is shown. Soft conversion implies a change in nomenclature only. In this document, the alternative nomenclatures (metric and inch-pound) are shown by using parentheses and can be used interchangeably.

Nothing in this standard is to be considered as in any way indicating a measure of quality by virtue of compliance with the provisions it contains. It is designed to allow the construction and performance of service regulators that may exceed the various provisions specified in any respect. In this standard's preparation, recognition was intended to be given to the possibility of improvement, through the ingenuity of design or otherwise. As progress takes place, revisions may become necessary. Whenever such revisions are believed desirable, recommendations should be forwarded to the Chairman of ANSI B109 Committee, American Gas Association, 400 N. Capitol St., NW, Washington, DC 20001

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HISTORY OF DEVELOPMENT OF THE STANDARD FOR SELF-OPERATED DIAPHGRAM-TYPE GAS SERVICE REGULATORS

In December 1989 at an ad hoc meeting, representatives of the ANSI Z223.1 and Z21 committees, AGA, Gas Appliance Manufacturers Association (GAMA) and several other industry organizations recommended that an ANSI standard for service regulators be developed. It was recognized that a systems approach to pressure control and over-pressure protection was necessary to ensure consistency between the ANSI standards that cover the houseline and the utilization equipment. In April 1990, a revision that added service regulators to the scope of ANSI B109 ASC was approved.

The AGA Operating Section assembled a service regulator standard development task group with representatives from the AG.A Distribution Measurement Committee, Customer Service and Utilization Committee, Distribution Engineering Committee and the major service regulator manufacturers. A representative from the Committee on Canadian Gas Service Regulator Standard was also included. Throughout the development, consideration was given to harmonizing the new standard with the Canadian standard. A first draft was completed in 1993. The draft was revised a number of times and was approved by the AGA Operating Section before it was presented to the ANSI B109 Accredited Standard Committee in January 1996.

The ANSI B109 Accredited Standard Committee requested comments on the proposed service regulator standard in May 1996. During a public meeting on Jan. 30, 1997, the committee addressed the comments and approved the standard for submittal to ANSI for endorsement as an American National Standard.

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1.0 Scope

This standard shall apply to the minimum design, material, performance and testing requirements of 1¼ inches (32 mm) and smaller self-operated diaphragm-type natural gas service regulators operating at inlet pressures up to 125 psig (861.8 kPa). These regulators are used to control the gas delivery pressure (also referred to as set pressure or P_2) to pressures at 2 psig or less (13.8 kPa). This standard shall apply only to regulators manufactured after the approval date of this standard.