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Sponsor

IEEE Standards Coordinating Committee 14 (Quantities and Units)

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Abstract

In this period of transition, authors and editors of scientific and engineering literature sometimes need basic information on the International System of Units (the "Metric System"), described in this standard. This contains the units, supplementary units, and multiplier prefixes of the International System, along with instructions for their correct use. Numerous examples are given. Conversions between the International and the British-American System are also discussed, and a procedure is described for rounding after such conversions. Three appendixes define the International System base units, list conversion factors, and explain the work of the International Bureau of Weights and Measures.



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Foreword

(This Foreword is not a part of IEEE Std 268-1973, IEEE Recommended Practice for Units in Published Scientific and Technical Work.)

While widespread interest in the International System has been recent in the United States, some groups, notably the IEEE and its predecessor organizations, have been actively engaged in the development of a single, coordinated system of internationally accepted units since 1890, when The American Institute of Electrical Engineers proposed "that the name of henry should be given to the practical unit of self-induction." Before the turn of the century, the Institute had recommended and secured international agreement on three additional electromagnetic units, and it recommended to the United States Congress that these units be legally adopted. That action was taken in 1894. In 1901 the Institute urged the U. S. Congress to establish a national standardizing bureau at Washington, D. C. The National Bureau of Standards was created shortly thereafter, and a particularly close working relationship has been maintained between the Bureau and the Institute's committee on units and quantities. As a result of the early and vigorous pursuit for internationally standardized units within electrical technology, there has developed within the electrical industry a degree of familiarity and acceptance of SI units that is uncommon within the other technical disciplines in the United States.

The IEEE, as one of the largest publishers of technical and scientific information in the English language, recognized a need for a standards document on units that was specifically directed to the use of units in scientific and technical publications. In 1966 it approved and published IEEE Std 268-1966. That standard has been revised and updated to incorporate the latest changes in accepted practice. The appendixes document the development of The International System of Units and are included as an aid to editors and writers who may be unfamiliar with the International System.

It is important for the user to recognize the distinction between the present standard, which is specifically addressed to publishing practice, and such general standards of broad scientific and technical interest as ANSI Z210.1-1973, Metric Practice Guide (ASTM E380-72), and ANSI Z210.2-1972, Rules for the Use of Units of the International System of Units (IEEE Std 322-1971).

It should be noted that U. S. practice favors the spellings kilogram, meter, liter, and deka-, rather than kilogramme, metre, litre, and deca-. A consensus for this practice was established in 1972 in both the IEEE Standards Committee and American National Standards Committee Z39 on Library Work, Documentation, and Related Publishing Practice.

The IEEE will maintain this standard current with the state of the technology, and comments on this standard, as well as suggestions for additional material that should be included, should be addressed to the Secretary, IEEE Standards Board, 345 East 47th Street, New York, NY 10017.

IEEE Standards Coordinating Committee 14 (Quantities and Units), which prepared this standard, had the following members:

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At the time of publication of this standard, American National Standards Committee Z39 had reviewed and approved the document; however, the document had not yet completed all approval procedures within the American National Standards Institute. When American National Standards Committee Z39 approved this standard, it had the following membership:

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