

# **THE DESIGN OF STATIC TRANSFORMERS**

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The Design of static transformers by H. M. Hobart

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**H. M. HOBART**

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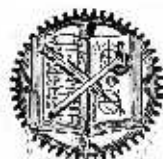


[Frontispiece.

View of assembling department in a transformer manufacturing works.

THE  
DESIGN OF STATIC  
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BY  
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## P R E F A C E

THE present treatise is exclusively of a practical nature. It constitutes, however, merely a brief introduction to the practical aspects of transformer design and construction. If the reader has not already acquired a knowledge of the theory underlying the subject, he could not do better than to study either Prof. Gisbert Kapp's "Transformers," or Prof. J. A. Fleming's "The Alternate-current Transformer." In spite of the ten years which have intervened since the publication of the last edition of the latter work, it still remains, in my opinion, one of the very clearest expositions of the theory of the transformer. My own work in this field, so far as it is set forth in the present volume, simply deals with the application to practice of the theory so admirably set forth by Profs. Fleming and Kapp in the excellent treatises to which I have referred. Although remarkably few books have been written on transformers, nevertheless there exists a fairly extensive literature on the subject, but it is in the form of articles and papers. Amongst the most noteworthy recent contributions may be mentioned the paper by Messrs. A. P. M. Fleming and K. M. Faye-Hansen, which was read in November, 1908, at the Institution of Electrical Engineers, and the paper read in June, 1909, by Mr. E. G. Reed, at the Thirty-second Annual Convention of the National Electric Light Association.

A perusal of my treatise entitled "Electricity" (Constable & Co., London, 1910), will assist to an understanding of the terms "power factor," "inductance," "reactance" and "impedance," if the reader is not already clear as to the meaning of these terms.

It has been deemed desirable that the present work should deal with the fundamental principles of practical designing, but so soon as these principles have been assimilated, the reader should proceed to study carefully the many essential constructional details. A Bibliography of a considerable number of papers relating to static transformers is given at the end of Chapter I. In conclusion, I wish to acknowledge the work of my former assistant, Mr. Evelyn Cood, who carried through many of the calculations, under my direction, and prepared a good many of the curves and diagrams. My assistant, Mr. C. Martin, compiled from my data certain portions of Chapters VIII. and IX. My thanks are due to the several manufacturing companies whose designs are described for their courtesy in providing me with the necessary information and for photographs and drawings.

H. M. HOBART, M. INST. C.E.

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*December, 1910.*



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