Electron Tubes in Industry

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THIRD EDITION

McGRAW-HILL BOOK COMPANY, INC. 1952
NEW YORK TORONTO LONDON

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Library of Congress Catalog Card Number: 51-13587

28179

PREFACE

Electronic devices are in evidence in virtually all branches of industry today. In fact, many people credit the electron tube with responsibility for the high standard of living currently enjoyed by the civilized world.

As a result of the electronic revolution that has taken place within the last twenty years, it has become necessary for persons engaged in nonelectronic branches of industry to come in contact with electron-tube terms and techniques. The steel-mill operator depends on tubes to perform many critical operations; the worker depends on electronic instruments to check his work. Doctors use tubes to take much of the guesswork out of their diagnoses. Mining and drilling engineers rely on tubes to locate and evaluate underground mineral deposits. Even at home electronics is playing an important part in the form of television for entertainment, and in such luxuries as automatic garage-door openers, burglar alarms, and so on. It is indeed difficult to imagine a person today who is not in some way affected by some form of electronic circuitry, either directly or indirectly.

The purpose of this book is to provide industrial personnel—engineers and technicians—with enough fundamentals to permit them to talk intelligently about electronics, to know what can be expected of electronic devices and what their limitations are, and to help them visualize new applications. In presenting these fundamentals, practical tried and tested circuits are used as examples. Many of these circuits have already found successful application in industry, and sufficient information is presented to enable the reader to evaluate each circuit with his own requirements in mind. These circuits and techniques will be directly applicable to many new industrial jobs.

The complicated theoretical aspects of electron-tube technology have purposely been held to a minimum to prevent clouding the reader's mind with superfluous information. Extensive references are provided for the reader who requires more advanced or more detailed information. Most of these references

cite original works in the literature that approach the subject at a level that should be useful to the readers of this book.

The authors are indebted to the many engineers who have taken time to describe their developments in the literature. Without this unselfish flow of information, a great deal of wasteful duplication of effort and reinvention would retard progress in this youthful but important industry.

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NEW YORK, N. Y.
August, 1952

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