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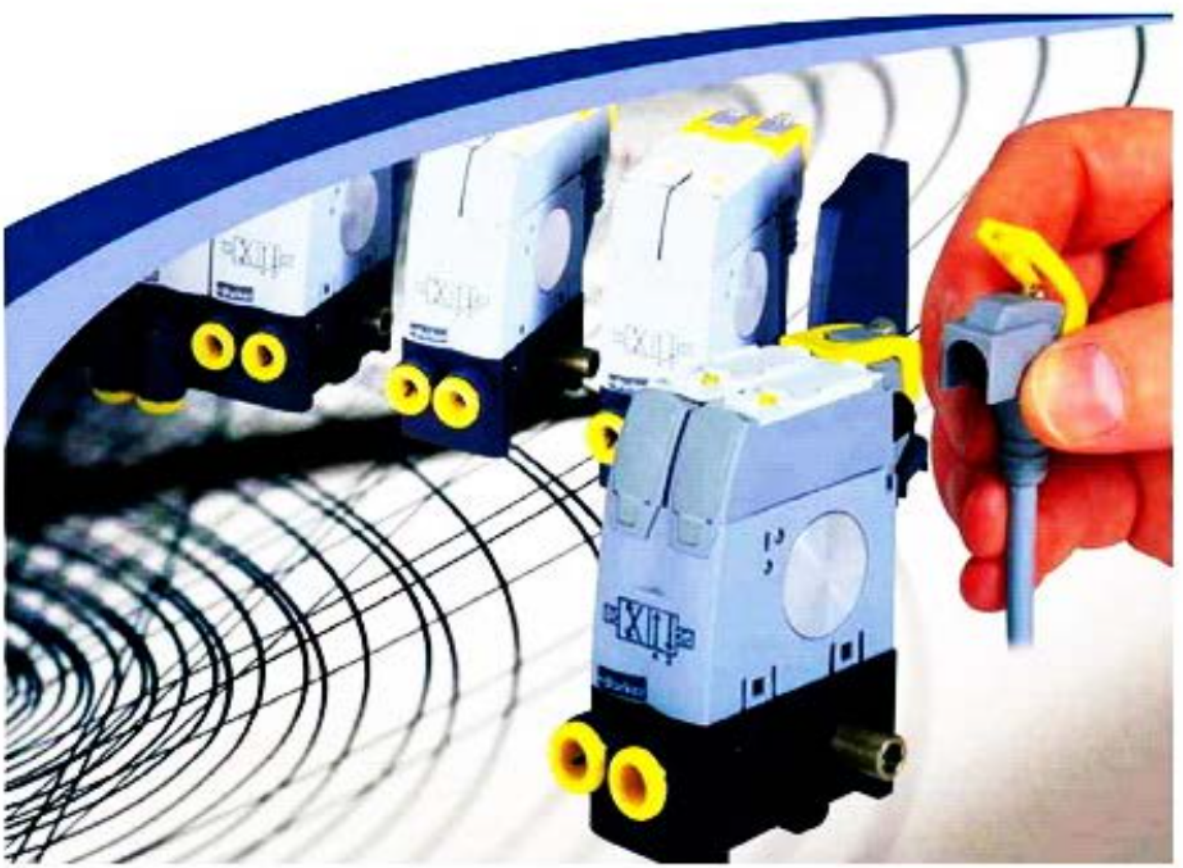
Pneumatic Controls

JOJI P.



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Pneumatic Controls

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Foreword

I am happy to write foreword for this book written by Joji P. I compliment the author for his dedicated and committed efforts to bring out this much-needed book. Pneumatics is basically an emerging technical area, especially in the world of industrial automation. The engineering design of a pneumatic system requires the knowledge of how to interconnect various components of the system, such as actuators, valves, sensors, etc., to satisfy various control requirements.

There are only a few books available for reference in this field. A student has to refer to many books to get the complete information on this subject. This book provides a comprehensive study of pneumatic and electro-pneumatic systems and presents all related information together. The fundamentals of pneumatic systems, typical pneumatic and electro-pneumatic circuits, and the maintenance aspects of pneumatic systems are all well covered. Interfacing of pneumatic system components with PLCs and their programming aspects are also well covered. This book also carries latest topics, such as fluidic muscle, vacuum equipment, valve terminals, etc., which have, perhaps, been presented for the first time compared to other contemporary books on this subject. So the students need only one book for their study of pneumatics.

Further, the author has tried to project a comprehensive account of the subject matter in a proper logical sequence and in an easy-to-understand language. The balanced treatment of theory, technology, and circuits makes this book rather unique and educational. I recommend Joji's timely book not only for undergraduate students but also for professionals and industrial technicians involved in pneumatics. I believe that this informative book will benefit many readers and be a fine reference.

H A Keshava Murthy
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Preface

Pneumatic Controls is an introductory textbook designed to provide basic technical information for dealing with pneumatic components, circuit diagrams, PLC programs and systems. Educating people to properly use pneumatic power is crucial for the economical use of energy. The three aspects having a vital bearing on the efficient use of pneumatic power are: proper designing of pneumatic circuits, selection of appropriate components for a pneumatic system, and top-class maintenance of a system. This textbook covers the operation and maintenance procedures of pneumatic devices thoroughly. It has been designed to make students, engineers, and technicians feel at ease while trying to understand the 'why' and 'how' of the operating principles of pneumatic and electro-pneumatic equipment and their control aspects including Programmable Logic Controller (PLC)-based controls.

The contents of this book evolved gradually over the last 10 years from the notes used by the author in training the participants attending programmes on 'Pneumatic Controls', 'Electro-pneumatics', and 'Programmable Logic Controllers' at the Foremen Training Institute, Bangalore. Besides, a number of books, manuals and catalogues were consulted, and information from the electronic media was used in the preparation of this book. The author has tried to acknowledge all these sources in the bibliography. As pneumatics is among the fastest growing engineering fields, the book's text has been kept as current as possible. The illustrations and their explanatory text graciously supplied by many manufacturers are greatly acknowledged.

The author expresses his appreciation of H.A.K. for his, professional advice and constant encouragement that helped a lot in the book completion. The writing of this

book was inspired and assisted by numerous scholars working in the area especially S.D.L., B.V.S., D.V.K, K.R.G., G.N.E., G.C.R., C.R.S., B.N.S., and J. Mukhopadhyay. It is a pleasure to thank each one of them for their intellectual exchanges, valuable suggestions, critical reviews and technical assistance. Several organizations have also contributed significantly to this effort. The author also extends his thanks to his former students for their evaluation and suggestions during the early stages of the manuscript preparation. Most of the text material have been reviewed and tested in the classroom by both trainers and students. To everyone involved goes my deepest appreciation. Thanks to Paras Bansal, the editorial, and the production team at Wiley India for handling the production of the first edition of this book. The author also wishes to express his thanks to all friends who have helped in any manner in the preparation and writing of this book.

While working on this book, the author had spent long hours, numerous evenings and weekends in isolation during the last few years that had a bearing on his personal life. He appreciates the patience and understanding of his friends, students and his family members during these tense periods.

The author requests all prospective readers to offer their valuable suggestions for further improvements. Finally, the book has been completed and the author hopes you enjoy reading it. Have fun and good luck!

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