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TELEMETERING. PART II. SYNCHRO SERVO AND PULSE SYSTEMS

[Comment: This report includes the author's foreword and the table of contents of the book Teleizmereniye. Chast' II. Sinkhronno-Sledyashchiye i Impul'snyye Sistemy, by G. M. Zhdanov, Moscow/Leningrad, 1953]

The book presents in a systematic manner the problems of theory, calculation, and design of instruments and systems for remote transmission of signals indicating the values of measured quantities.

The book is intended for use of students of instrument building and design at higher technical schools, and for engineering workers of the instrument-building industry.

AUTHOR'S FOREWORD

The technology of telemetering comprises a complex technical field, fully utilizing the advances in physics, electrical measurement, relay, electric, and remote control.

The importance of this technology has greatly advanced in the past few years. The decree on the Fourth Five-Year Plan (1946-1950) made numerous references to the need for automation and telemechanization of different branches of the national economy of the USSR, and for corresponding growth of equipment production. In the directives of the 19th Party Congress on the subject of the Fifth Five-Year Plan development of the USSR for 1951-55, precise instructions are given on the further automation and telemechanization of industrial processes.

In particular, the Party Congress gave the following directives:

"To accomplish a wide automation of the industrial processes in electric stations.

"To complete full automation of regional hydroelectric stations, and to begin implantation of telemechanics in power systems.

"To increase during the 5-year period the production of instruments for regulation and control, and automatics and telemechanics, roughly by 2.7 times."

The first part of the book deals with the field of intensity-measurement telemetering systems, which is closely allied with electrical measuring techniques. The second part of the book is devoted to sychros, servos, and pulse systems, utilizing the achievements of electrical machine technology, electronics, and radio engineering.

The purpose of the book is to satisfy the requirements of a textbook from the viewpoint of instrument and equipment construction specialties, which are generally presented as individual courses on electronics, communication channels, and computer technology. Contents of the book were selected with this in mind. Sections on selection and operation of telemetering installations, communication channels, equipment of control benches, boards, and dispatcher points, generally absent in the programs of telemetering courses, were excluded; the material on summation, which plays a prominent role in telemetering systems, is presented only briefly and within the limits of specific subjects inherent to pulse telemetering.

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As in the first part, the material of this book is presented from the viewpoint of instrument construction.

In spite of the fact that numerous planning organizations and scientific research institutes are engaged in the problems of construction and utilization of telemetering instruments, there are no books systematizing the material or giving orderly presentations of the principles of construction, theory, and calculation of telemetering systems, especially the pulse type. The author expresses the hope that this work will prove useful to students and other personnel concerned with practical telemetering engineering.

The author realizes the difficulties in writing a good textbook on such a complex subject as telemetering, and will receive with thanks all critical remarks from readers which will help to better the book in any subsequent revision.

During preparation of the second volume, valuable assistance was offered to the author by his academic chair associates, F. Ye. Temnikov and S. V. Alekseyev, to whom the author expresses his thanks.

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