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offers the possibility to work without filters in the feeding and output circuit (necessary for multipliers with parallel fields) which take much space. 2) The approximation of the core magnetizing curve by the arcus tangens permits a rather precise computation of the basic characteristics of an idling multiplier with double frequency output. 3) A multiplier with ground frequency output operates in the way of a transformer and - in contrast to the frequency doubler - does not provide any amplification. 4) The fundamental frequency multiplier has a much higher value of the lower threshold of limiting sensitivity than the frequency doubler. Its advantage is the fact that it operates almost without idling and that its transmission ratio does not depend on the voltage and frequency of the source and the temperature of the environment when changing it within wide limits. There are 9 figures, 1 table, and 11 references, 8 of which are Soviet.

SUBMITTED: November 11, 1957

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.A.

PHASE I BOOK EXPLOITATION SOV/4915

Boyarchenkov, Mikhail Aleksandrovich, and Moisey Aronovich Rozenblat

Bystrodeystvuyushchiye reversivnyye elektroprivody s magnitnymi usilitelyami (High-Speed Reversible Electric Drives With Magnetic Amplifiers) Moscow, 1959. 40 p. 5,000 copies printed. (Series: Peredovoy opyt proizvodstva. Seriya "Elektroenergetika," vyp. 1)

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR and Moskovskiy Dom nauchno-tekhnicheskoy propagandy imeni F. E. Dzerzhinskogo.

Ed.: A. V. Shinyanskiy; Resp. Ed.: I. A. Manin; Tech. Ed.: R. A. Sukhareva.

PURPOSE: This booklet is intended for designers of automation devices used for electric drives.

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COVERAGE: The booklet is based on results obtained by the Laboratory of Automation Components of the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics of the Academy of Sciences USSR) in the development and experimental investigation of two high-speed reversible electric drives, one of which is activated by a d-c motor of the PN2.5(P11) type, and the other by a two-phase induction motor of the DAD2-350/50 type. The booklet is divided in two parts. Part I, entitled "Reversible D-C Drive With Magnetic Amplifiers," contains the following chapters: "Selection of the Circuit of a Power Magnetic Amplifier"; "Mechanical Characteristics of the Drive"; "Feedback Drive System"; "Amplifier of the Excitation Circuit and General Diagram of the Drive"; and "Basic Structural Parameters of a Magnetic Amplifier and Drive Characteristics." Part II, entitled "High-Speed Reversible Drive With a Two-Phase Induction Motor and a Transistor-Magnetic Amplifier," consists of the following chapters: "Motor"; "Selection of Magnetic-Amplifier Circuit"; "Selection of Magnetic-Amplifier Bias"; "Reduction of the Effect of the

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High-Speed Reversible Electric Drives (Cont.) SOV/4915

Feedback Circuit on the Inertness of the Magnetic Amplifier"; "Structural Parameters of the Amplifier and Its Static Characteristics"; "Transistorized Phase-Sensitive Amplifier"; "Matching of Magnetic and Transistor Stages"; and "Drive Characteristics." No personalities are mentioned. There are 9 references: 6 Soviet, and 3 English.

TABLE OF CONTENTS: None

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.A.

Magnetic modulating head for reproducing the magnetic recording of impulses in a retarded motion of the carrier. Trudy VNAIZ no.5:19-29 '59. (MIRA 15:4)
(Magnetic recorders and recording)

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28(1) PHASE I BOOK EXPLOITATION SOV/2087

Elementy sistem avtomaticheskogo regulirovaniya. ch. 1: Chuvstvitel'nyye usilitel'nyye i ispolnitel'nyye elementy (Elements of Automatic Control Systems. pt. 1: Sensing, Amplifying and Control Elements) Moscow, Mashgiz, 1959. 722 p. (Series: Osnovy avtomaticheskogo regulirovaniya, t 2) Errata slip inserted. 13,000 copies printed.

Reviewers: F. F. Galteyev, Candidate of Technical Sciences, V. A. Karasev, Doctor of Technical Sciences, P. P. Klobukov, Candidate of Technical Sciences, V. V. Petrov, Candidate of Technical Sciences, Yu. D. Ragozin, Candidate of Technical Sciences, Yu. R. Reyngol'd, Engineer, B. A. Ryabov, Doctor of Technical Sciences, B.D. Sadovskiy, Candidate of Technical Sciences, A. G. Saybel', Candidate of Technical Sciences, and A. A. Shevyakov, Candidate of Technical Sciences; Scientific Eds.: I. M. Vitenberg, Candidate of Technical Sciences, A. I. Moldaver, Candidate of Technical Sciences, and Yu. Ye. Ruzskiy, Candidate of Technical Sciences; Ed. of Series: V. V. Solodovnikov, Doctor of Technical Sciences, Professor; Eds. of Publishing House: G. P. Polyakov, A. G. Akimova, and G. M. Konovalov; Tech. Eds.: A. Ya. Tikhanov and T. F. Sokolova; Managing Ed. for Literature on Machine Building and Instrument Construction (Masngiz): N. V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for engineering and scientific personnel and for instructors of vtuzes concerned with problems of automatic control.

COVERAGE: The authors explain the principle of operation of automatic control elements and servomechanisms. They also discuss typical automatic control circuits and present equations of motion and static and dynamic characteristics of automatic control elements. They describe sensing elements, amplifiers, control elements and transducers. The book contains Sections I, II, and III of Part 1, Volume II, "Principles of Automatic Control." The following persons participated in writing the present work: D. A. Braslavskiy, Candidate of Technical Sciences, paragraph 4 of Chapter III and paragraphs 1-8 and 14 of Chapter IV; L. S. Gol'dfarb, Doctor of Technical Sciences, paragraphs 1, 2, 6 and 7 of Chapter I; A. I. Guzenko, Candidate of Technical Sciences, paragraph 1 of Chapter VIII; K. Ye. Dmitriyev, Candidate of Technical Sciences, paragraph 2 of Chapter XIII; V. A. Kalashnikov, Engineer, Chapter XIV; P. P. Klobukov, Candidate of Technical Sciences, paragraphs 2 and 3 of Chapter VIII; P. V. Kluhnikin, Candidate of Technical Sciences, Chapter XII; I. M. Krassov, Candidate of Technical Sciences, paragraph 1 of Chapter XIII, and Chapter XIV; D. S. Pel'por, Doctor of Technical Sciences, paragraphs 1-3 of Chapter III; V. V. Petrov, Candidate of Technical Sciences, paragraph 1 of Chapter XIII, and Chapter XIV; D. A. Rozenblat, Doctor of Technical Sciences, Chapter VII; Yu. Ye. Ruzskiy, Candidate of Technical Sciences, paragraphs 1, 3-5 and 8-10 of Chapter 1, paragraphs 2-5, 12, 13 and 17 of Chapter II, paragraph 3 of Chapter XIII, and Chapter IX; B. D. Sadovskiy, Candidate of Technical Sciences, paragraphs 1 and 2 of Chapter X; A. A. Sokolov, Candidate of Technical Sciences, Chapter VI; V.K. Titov, Candidate of Technical Sciences, paragraphs 9-13 of Chapter IV, paragraph 4 of Chapter X, and Chapter XI; G. M. Ulanov, Candidate of Technical Sciences, paragraph 1 of Chapter II; Ye. V. Filipchuk, Candidate of Technical Sciences, paragraphs 6-11, 14-16 and 18-29 of Chapter II; A. Ye. Kharybin, Candidate of Technical Sciences, Chapter V; and V. A. Khokhlov, Candidate of Technical Sciences, paragraph 1 of Chapter IX and paragraph 1 of Chapter XIII. References appear at the end of each chapter.

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SOV/24-59-4-26/33

AUTHORS: Volodin, V.S. and Rozenblat, M.A. (Moscow)

TITLE: A Source of Stable Direct Voltage Based on Magnetic and Semiconductor Elements

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 4, pp 208 - 210 (USSR)

ABSTRACT: The device described is based on a magnetic amplifier and a silicon reference diode. It permits the output voltage to be stabilised with a deviation of ± 0.01% for the changes of the input voltage amounting to ± 20%, changes of frequency of ± 20% and temperature changes up to +70 °C. The block schematic of the device is shown in Figure 1, while its detailed diagram is given in Figure 2. The system consists of a single-stage magnetic amplifier, whose input current I_{oc} is a non-linear function of the difference between the reference voltage and the actual output voltage. The difference signal is formed by inserting a reference diode between the input and the output of the amplifier. A filter consisting of

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SOV/24-59-4-26/33

A Source of Stable Direct Voltage Based on Magnetic and Semiconductor Elements

capacitances $C_{\Phi 1}$, $C_{\Phi 2}$, $C_{\Phi 3}$ and $C_{\Phi 4}$, a resistance R_{Φ} and two chokes $Др_1$ and $Др_2$, is connected at the output of the amplifier; this reduces the hum to 0.1% of the output voltage. The system contains two feedback paths:- a negative voltage feedback (rectifiers B_1, resistance R_1 and the winding w_1) and a positive feedback (resistance R_2 and the winding w_2). The performance of the device is illustrated by the curves of Figure 4; the upper curve of Figure 4 gives the percentage change of the output voltage as a function of the input voltage; the lower curve of the figure shows the percentage variation of the output voltage as a function of the frequency. There are 4 figures.

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report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

LERNER, A. Ya., - "The application of a self-adjusting system of automatic control"
MALOV, V. S., PSHENICHNIKOV, A. M., and [illegible] A. - "Industrial telemeasurement systems and digital technique"
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POPOV, E. P. - "Some problems of synthesis of automatic control non-linear systems"
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SOLODOVNIKOV, Y. V., BATKOV, A. M., BABURIN, V. M., VAL'DEYBERG, Yu. S., MATVEYEV, P. S., and POKROVSKIY, A. K. - "Analyses and synthesis of automatic control systems with the aid of calculating machine facilities"
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VENCHKOVSKIY, D. B., KASHIRIN, V. A., CHUGIN, Yu. I., and SHASTOVA, G. A. - "Static stability of telemeasurement"
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LIPMAN, Roydzhoy Aleksandrovich; NEGNEVITSKIY, Iosif Borisovich; ROZENBLAT, M.A., prof., doktor tekhn.nauk, retsenzent; BARYSHNIKOVA, R.A., red.; VORONIN, K.P., tekhn.red.

[Quickly responding magnetic and magnetic-semiconductor amplifiers] Bystrodeistvuiushchie magnitnye i magnitno-poluprovodnikovye usiliteli. Moskva, Gos.energ.izd-vo, 1960. 403 p. (MIRA 13:10)
(Magnetic amplifiers)

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ROZENBLAT, M.A.

Vsesoyuznoye ob'yedinennoye soveshchaniye po avtomatizatsii proizvodstvennykh protsessov v mashinostroyenii i avtomatizirovannomu elektroprivodu v promyshlennosti. 3d, Moscow, 1959

Elektroprivod i avtomatizatsiya promyshlennykh ustanovok; trudy soveshchaniya (Electric Drive and Automation in Industrial Systems; Transactions of the Conference) Moscow, Gosenergoizdat, 1960. 470 p. 11,000 copies printed.

General Eds.: I.I. Petrov, A.A. Sirotin, and M.G. Chilikin; Eds.: I.I. Sud, and E.F. Silayev; Tech. Eds.: K.P. Voronin, and G.Ye. Larionov.

PURPOSE: The collection of reports is intended for the scientific and technical personnel of scientific research institutes, plants and schools of higher education.

COVERAGE: The book is a collection of reports submitted by scientific workers at plants, scientific institutes and schools of higher education at the third Joint all-Union Conference on the Automation of Industrial Processes in Machine Building and Automated Electric Drives in Industry held in Moscow on May 12-16, 1959. The Conference was called by the Academy of Sciences USSR, the Gosplan SSSR (State Planning Commission USSR), the GNTK SSSR, the Gosudarstvennyy Komitet po avtomatizatsii i mashinostroyeniyu (State Committee on Automation and Machine Building) and the Natsional'nyy Komitet SSSR po avtomaticheskomu upravleniyu (USSR National Committee on Automatic Controls) and prepared by the Nauchno-tekhnicheskiy komitet po avtomatizirovannomu elektroprivodu (Scientific and Technical Committee on Automated Electric Drives), the MEI (Moscow Institute of Energetics), the VNIIEM, the IAT (Institute of Automation and Telemechanics) of the Academy of Sciences USSR, and the Komissiya po tekhnologii mashinostroyeniya Instituta mashinovedeniya AN SSSR (Commission on the Technology of Machine Building of the Institute of Science of Machines of the Academy of Sciences USSR). It was the purpose of the Editorial Board to arrange the reports in a way which would ensure a relatively systematic presentation of theoretical and practical problems relating to electric drives and automatic controls of industrial mechanisms used in various branches of industry. Basic problems of automated electric drive and their solution are outlined. The book also contains articles on electric machinery and means of automation. Considerable attention is paid to non-contact automatic control systems, including systems with semiconductor devices and magnetic amplifiers, and to computers intended both for the analysis and the synthesis of linear and nonlinear automatic regulation and control systems. Reports already published in journals or official publications have been considerably abbreviated; those which have appeared in volume V of NII EP transactions or in the journal "Elektrichestvo" are marked with an asterisk. No personalities are mentioned. References accompany some of the papers.

PART I. GENERAL PROBLEMS CONCERNING THE THEORY AND PRACTICE OF ELECTRIC DRIVE AND AUTOMATION OF CONTROL

Karpa, B.M., Doctor of Technical Sciences, T.G. Sorokar, Professor, Doctor of Technical Sciences, Iu.V. Mordynov and Ye.B. Plamod'yalo, Engineers. Automation of the Calculations of Electric Drives by Means of Electronic Digital Computers* 41

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Beyngol'd, Iu.R., Engineer. Investigation of the Dynamic Properties of a Motor-Generator System by the Method of Experimental Frequency-Response Characteristics 49

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Agafonov, Iu.P., Engineer. Effect of Transient Electromagnetic Processes on Pulse Regulation Dynamics of Squirrel-Cage Induction Motors 76

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PHASE I BOOK EXPLOITATION SOV/4423

Rozenblat, Moisey Aronovich

Magnitnyye usiliteli, tom 2 (Magnetic Amplifiers, Vol. 2) 3d ed., rev. and enl. Moscow, Izd-vo"Sovetskoye radio," 1960. 435 p. No. of copies printed not given.

Ed.: N.G. Zabolotskiy; Tech. Ed.: B.V. Smurov.

PURPOSE: The book is intended for technical personnel and scientists; it may also be used by students in schools of higher technical education and university departments of electrical engineering.

COVERAGE: The two volumes of this work present a systematic account of the basic principles of the construction and theory of magnetic amplifiers while reviewing the latest achievements in this connection. Basic circuits and methods of computation are given for the more widespread types of amplifiers and much attention is paid to physical processes occurring in these amplifiers and their cores. Recommendations are given on the practical realization of magnetic amplifiers, the selection of connection diagrams, magnetic materials, and semiconductor rectifier structures. The author investigates ways of increasing quick operation and stability of operation of amplifiers. For the 3rd edition,

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

a new chapter on "Transistorized Magnetic Amplifiers" has been added to this 2nd volume. No personalities are mentioned. References accompany each chapter.

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PHASE I BOOK EXPLOITATION SOV/4422

Rozenblat, Moisey Aronovich

Magnitnyye usiliteli, tom 1 (Magnetic Amplifiers, Vol. 1). 3d ed., rev. and enl. Moscow, Izd-vo "Sovetskoye Radio," 1960. 537 p. No. of copies printed not given.

Ed.: N.G. Zabolotskiy; Tech. Ed.: B.V. Smirov.

PURPOSE: This book is intended for technical personnel and scientists; it may also be used by students of schools of higher technical education and university divisions of electrical engineering.

COVERAGE: The two volumes of this work present a systematic account of the basic principles of construction and theory of magnetic amplifiers, and the latest achievements in this field of engineering are reviewed. Basic circuits and methods of designing are given for the more widespread types of amplifiers. Much attention is paid to physical processes occurring in these amplifiers and in their cores. Recommendations are given on the practical realization of magnetic amplifiers, on the selection of connections diagrams, magnetic materials, and of core and semiconductor rectifier structures. The author investigates ways of increasing quick operation and stability of operation of the amplifiers. In the third edition,

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the chapters of this first volume concerning magnetic amplifier feedback have been entirely rewritten and considerably expanded, and a new chapter, "Introduction to the Theory of Ferromagnetism," has been added. No personalities are mentioned. Each chapter is accompanied by references.

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AUTHORS: Boyarchenkov, M. A., Rozenblatt, M. A. (Moscow)

TITLE: Push-pull Magnetic D.C. Amplifier With Increased Efficiency

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 11, pp. 1503 - 1513

TEXT: The use of magnetic push-pull amplifiers in automatic control systems offers great advantages. It is mainly used for the summation of voltage and current at the output of single-cycle amplifiers. In the first chapter of this extensive paper the design principle of push-pull amplifiers with increased efficiency is dealt with. In the second part the authors discuss the dependence of the efficiency of push-pull amplifiers on different factors. In the third part, three-phase push-pull amplifiers are dealt with, and in the fourth part the transformerless full-wave circuits of magnetic push-pull amplifiers with increased efficiency are described. The authors conclude from the discussion of the results obtained that those circuits which are based on the subtraction of the currents of nonreversive amplifiers are suited best for the

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Push-pull Magnetic D.C. Amplifier With Increased Efficiency

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d.c. amplifiers concerned. To attain increased efficiency, the following conditions must be observed: saturation of one or several cores must not lead to an increase in the terminal voltage of the coils with nonsaturated cores, furthermore the voltage drop at the load must not reduce the back voltage of the valves in the control semi-period. These conditions can be fulfilled by connecting single-cycle amplifiers in a bridge. Furthermore, short current changes in the operating coil of the nonreversive amplifier and low pulsation of the d.c. are necessary to increase the efficiency. Hence, under these conditions, the three-phase push-pull amplifiers have the best efficiency. This paper was presented at the All-Moscow Seminar on Contactless Magnetic Elements on March 23, 1960. There are 12 figures, 2 tables, and 3 Soviet references.

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ROZENBLAT, Moisey Aronovich; LIPMAN, R.A., red. izd-va; GOLUB', S.P., tekhn. red.

[Noncontact magnetic devices of automatic control systems] Beskontaktnye magnitnye ustroistva avtomatiki. Moskva, Izd-vo Akad. nauk SSSR, 1961. 178 p. (MIRA 14:10)
(Automatic control) (Magnetic materials)
(Electronic calculating machines)

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AUTHORS: Rozenblat, M. A., Subbotina, G. V. (Moscow)

TITLE: The Stability of Multistage Magnetic Amplifiers With Negative Feedback

PERIODICAL: Avtomatika i telemekhanika, 1961, Vol. 22, No. 1, pp. 97-106

TEXT: It is the purpose of the present work to determine the stability conditions and to clarify the development problems of amplifiers connected with these conditions, which contain magnetic-amplifier stages with negative feedback. For their studies the authors assume that every amplifier stage operates in the linear part of its static characteristic; the coupling of the amplifier stages by the current source is neglected and it is assumed that the latter has a sufficient power. In the first part of the paper, the dynamic characteristic of a single-stage magnetic amplifier is studied. For the transmission function the following relation is obtained:

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The Stability of Multistage Magnetic Amplifiers With Negative Feedback

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$$W_j(p) = \frac{\bar{U}_{out}(p)}{\bar{U}_{contr}(p)} = \frac{K_U\, e^{-pT/2}}{1 + p\tau_j} \quad (2),$$

where U_{out} is the output voltage and U_{contr} is the voltage of the control circuit. For the time constant τ_j and the voltage amplification coefficient K_{Uj} the relation

$$\tau_j = K_{Uj} \frac{w_{yj}}{2\eta_j f w_{\sim j}} \quad (3)$$

holds. Here, η_j is the efficiency of the load circuit, w_{yj} and $w_{\sim j}$ denote the number of turns of the control and power coils, f - the feeding voltage. The transmission function of an N-stage magnetic amplifier without feedback is obtained by means of the relation

$$W(p) = K_U e^{-pT_a} \prod_{j=1}^{N} \frac{1}{1 + p\tau_j} \quad (4),$$

where $T_a = \sum_{j=1}^{N} T_j$ and $K_U = \prod_{j=1}^{N} K_{Uj}$, and T_j and K_{Uj} are the attenuation-

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The Stability of Multistage Magnetic Amplifiers With Negative Feedback

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and the voltage amplification coefficient of the j-th stage, and τ_j is the time constant. In the case of strong feedback the transmission function reads

$$K(p) = \frac{W(p)}{1+\beta W(p)} = \frac{K_U}{\beta K_U + e^{pT_a} \prod_{j=1} (1+p\tau_j)} \quad (5),$$

where β is the feedback coefficient. The necessary and sufficient condition for the stability of the system with feedback is the lack of roots of the characteristic equation $1 + \beta W(p) = 0$ (6) of the system having positive real parts. From the equation $\beta W(j) = -1$, a stability limit $\beta K_U = f(T_a)$ is constructed, from which the critical feedback factor, corresponding to the stability limit, may be calculated with given T_a and K_U. Furthermore, the relation

$$\beta cr \approx \frac{\tau_1 + \tau_2}{K_{U_1} K_{U_2} T_a} \quad (19)$$

is obtained from the relation

$$\sqrt{(1+\omega^2\tau_1^2)(1+\omega^2\tau_2^2)} = \beta K_{U_1} K_{U_2} \quad (15)$$

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for the critical amplification coefficient of a two-stage magnetic amplifier. Further, the limits of the ratio $\alpha = \tau_2/\tau_1$ and of the product $K_{U_1} K_{U_2} \beta$ are calculated, for which formula (19) warrants an accuracy of about 10%. The result is graphically represented in Fig.3. Application of the stability conditions obtained here to calculating amplifiers is briefly discussed, following which a report is given on an experimental study of the stability of a two-stage magnetic amplifier. A study was made of four of each of the two-stage magnetic amplifiers with internal feedback in each stage, which are shown in Figs.4 and 5. The data of the corresponding amplifiers are given in Table 1. There are 5 figures, 1 table, and 6 references: 5 Soviet and 1 US.

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AUTHORS: Kerbnikov, F. I., Rozenblat, M. A. (Moscow)

TITLE: A sensitive magnetic modulator with two-phase supply

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 3, 1961, 376-382

TEXT: The present study deals with circuit and theory of a magnetic modulator with perpendicular fields and two-phase supply from a source with rectangular voltage. It is pointed out that such a modulator offers considerable advantages as compared to the usual types. Results of experimental examination are given. Fig. 2 shows a circuit diagram of this modulator which was suggested by the authors. The modulator itself (Fig. 1) consists of two ferrite cores 1 each of which has a primary winding W_1 for producing the transverse magnetic alternating field, a control winding W_y, and a secondary winding W_2. A transistor-magnetic two-phase inverted converter generator, consisting of two identical inverted converters and a circuit for synchronizing these, is used as a power supply (Ref. 3: Jewett, W. E., Schmidt, P. Z. "More stable

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A sensitive magnetic modulator ...

three-phase transistor-core power inverter." Proc. C. M. A. AIEE, 1956). The circuit in Fig. 2 is characterized by two rectangular voltages U_1 and U_2 at the output, which are phase-shifted through 90°. The generator has a high efficiency and few even harmonics in the output voltage. By means of the variable resistors, R_o, these harmonics may practically be reduced to zero. The rectangular voltage of the power supply allows to obtain a practically sinusoidal voltage at the modulator output. The double-frequency voltages induced in W_y (Fig. 2) are compensated if a signal is present. Therefore, a special filter or an inductor coil is superfluous in the control circuit. It is shown that in determining the amplitude of the output voltage it is sufficient to know the maximum permeability of the core from the mean magnetization curve and the permeability μ_{min} corresponding to $B = \pm B_c$. As usually $\mu_{min} \ll \mu_{max}$, it is sufficient for approximative calculations to know μ_{max}. The formulas

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$$U_{\text{вых}} = \frac{3{,}2\,\pi^2 W_2 W_y i_y S_{\parallel}}{l_{\parallel}\,10^8} \cdot \frac{\mu_{\text{макс}} - \mu_{\text{мин}}}{2}. \tag{14}$$

for the amplitude of the output voltage of the modulator and

$$K_U = \frac{3{,}2\,\pi^2 W_2 W_y S_{\parallel}}{R_y l_{\parallel}\,10^8} \cdot \frac{\mu_{\text{макс}} - \mu_{\text{мин}}}{2}, \tag{15}$$

for the voltage amplification factor are obtained, $l_{\parallel}$ denotes the mean core length. The formula

$$L_y = \frac{0{,}8\,\pi W_y^2 S_{\parallel}}{l_{\parallel}\,10^8} \cdot \frac{\mu_{\text{макс}} - \mu_{\text{мин}}}{2}. \tag{18}$$

is written for the inductance of the control winding. The time constant of the control circuit may be calculated from $\tau = L_y/R_y$, where R_y denotes

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the total effective resistance of control circuit. The exact consideration of the effect of the load resistance upon the output voltage leads to voluminous calculations. For the present modulator type it was possible to take this influence approximatively into account by the following method: The modulator is regarded a generator of the e.m.f. U_{output} with double frequency, and with the internal inductive resistance $Z_i = 2\omega L_i$. The dependence of U_{output} and L_i on the load current is neglected. L_i denotes the mean value of the inductances of W_2 during one period and may be calculated in analogy to L_y. The formula

(21)

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A sensitive magnetic modulator ...

is written for the amplitude of the second harmonic of the voltage on effective load. The results of the experimental study showed that the voltage of the parasitic second harmonic at the modulator output corresponds to an input signal of $4 \cdot 10^{-16}$ w. Fig. 5 shows the experimental (dashed line) and the theoretical (as calculated according to Eq. (21)) change in voltage due to load for various load resistances and for a current of $1 \cdot 10^{-6}$ a in the control winding. The circuit presented in this paper allows 1) to obtain a lower sensitivity threshold as compared to a modulator with core, 2) to simplify the circuit of the amplifier with the magnetic modulator considerably, and 3) to obtain a practically sinusoidal output voltage. There are 5 figures, 1 table, and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

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9,253 c. also 1031, 1013

AUTHOR: Rozenblat, M. A. (Moscow)

TITLE: Magnetic modulators with a sinusoidal output voltage of double frequency

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 10, 1961, 1386-1400

TEXT: The conditions are ascertained for a sinusoidal form of output-voltage curve of magnetic modulators with parallel and mutually perpendicular magnetic fields, the modulators operating by the principle of double frequency. The basic relationships for a magnetic modulator are set up. The output voltage is expressed by

$$e_B = 2W_2 S \Delta H \frac{d\mu_D}{dt} \qquad (3)$$

where W_2 denotes the output windings, S--the area of the cross-section

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of one of the cores, H--the magnetic field-strength, $\mu_D = dB/dH$--the differential permeability. The gain of the modulator decreases with the second harmonic E_2 of the output voltage. The lower sensitivity-threshold $\Pi_M = \left(\frac{\mu_{D\,max}}{\mu_2}\right)^2$. Conditions for sinusoidal output-voltage for modulators with parallel fields: Modulators whose excitation- and signal-fields are parallel (antiparallel) have a sinusoidal output-voltage if

$$\mu_D = \mu_0 + \mu_2 \cos 2\omega t \qquad (13)$$

If the magnetization curve is analitically given in the form $B = f(H)$, then, by solving the equation

$$f(H) = \mu_{D\,max}(1 - \xi + \xi \cos 2\omega t) \qquad (16)$$

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One obtains time dependence of H or of B for which the output-voltage is sinusoidal. Several examples are considered. If

$$B = \frac{2}{\pi} B_s \text{ arc tg } \beta H = f(H) \qquad (17)$$

one obtains as the required condition for a sinusoidal output voltage

$$B = \pm \frac{2}{\pi} B_s \omega t = \pm 4fB_s t \qquad (19)$$

Such a relationship applies to a modulator supplied by an altern.-voltage source of rectangular form and amplitude

$$U_m = 8fW_1 SB_s \qquad (20)$$

under the condition that the voltage drop across the excitation-circuit resistance can be neglected. If the arctangens approximation cannot be used or the voltage-drop cannot be neglected, the curve will not be

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absolutely sinusoidal. But in practice it has turned out that such deviations can be fully compensated by appropriate choice of the rectangular voltage and of the resistance, ensuring a sinusoidal output-voltage form. A table lists the measured values of the ratio $E_2/E_{2\,max}$, and of the factor K_d of nonlinear distortions of the output voltage, for a modulator with cores made of the alloy 79HMA, under various conditions of excitation (sinusoidal current, sinusoidal voltage, rectangular voltage). Magnetic modulators with mutually perpendicular fields: For the output voltage one obtains

$$e_B = W_2 S_{\parallel} \frac{dB_{\parallel}}{dt} = W_2 S_{\parallel} \Delta H \frac{d\mu}{dt} = W_2 S_{\parallel} \Delta H \frac{d\mu}{dB} \frac{dB}{dt} \qquad (24)$$

The basic difference between this formula and Eq. (3) consists in μ (Eq. 24) being the static magnetic permeability of the core, whereas μ_D (Eq. 3) was the differential permeability. In the case of weak signals, the

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condition for sinusoidal output-voltage is

$$\frac{B_{\perp}}{H_{\perp}} = \mu = \mu_{max} (1 - \xi + \xi \cos 2\omega t) \qquad (25)$$

If the magnetization curve can be approximated by

$$H = \frac{1}{\beta} \frac{\pi \frac{B}{B_s}}{1 + \cos \pi \frac{B}{B_s}} \qquad (28)$$

the sinusoidal voltage can be obtained by Eq. (19). An experimental [illegible] a large number of modulators with perpendicular fields (with cores of oxifer-2000) showed that a practically sinusoidal voltage can be

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obtained by appropriate choice of the amplitude of the rectangular supply-voltage and of the resistance of the excitation circuit. The most convenient source of rectangular voltage for modulators is a magneto-transistor of d.c. into alt. voltage, possessing high efficiency and small size. For an approximate calculation of the parameters of a modulator with nearly-sinusoidal output-voltage, it is sufficient to know

$$\mu_{D\,max} = \lim_{B \to o} \frac{dB}{dH}$$

For the amplitude of the second harmonic (for both modulators with parallel and with perpendicular fields):

$$E_2 = 2\omega\xi M_{max} I_y \quad , \quad \left(\xi = \frac{\mu_2}{\mu_{D\,max}}\right) \qquad (31)$$

Expressions are derived for the constant component of induction B_0 and for the amplitude of the second harmonic of the voltage:

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$$U_2 = \frac{E_2 R_H}{\sqrt{R_H^2 + (2\omega L_i)^2}} \qquad (39)$$

(R_H is the load resistance). This formula is the theoretical basis of the previously found empirical rule for approximate calculation of the output voltage. It is concluded that nearly sinusoidal output-voltage can be realized by simple means; in most cases it is sufficient to use a rectangular voltage source. Thereby the gain of the modulator increases and the signal-to-noise ratio improves. The conditions for a sinusoidal voltage differ in the case of parallel and perpendicular fields; but with similar core and winding values, the statical and dynamical characteristics of the modulators are practically the same. The use of two modulators with perpendicular fields, supplied by a bi-phasal rectangular voltage source, permitted constructing magnetic modulators with very low sensitivity-threshold without filters in the supply, signal and output circuits. There are 10 figures, 1 table and 2 Soviet-bloc references.

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Magnetic modulators...

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

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9,2530

AUTHORS: Boyarchenkov, M.A., and Rozenblat, M.A. (Moscow)

TITLE: The operation of a back e.m.f. magnetic amplifier

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 1, 1962, 77-90

TEXT: The authors analyze the operation and performance of half- and full-wave saturation magnetic amplifiers working into a resistive inductive load with a back e.m.f. The analysis of operation is made under the following assumptions: 1) The hysteresis loop of amplifier cores is of nearly a rectangular shape, i.e. the value of residual induction B_r is equal to the saturation induction Bs. 2) The resistance of rectifiers in the output circuit is constant in the forward and infinite in the reverse direction. The analysis of the effect of back e.m.f. on the processes occuring in the load circuit of saturation magnetic amplifiers shows that the operating regimes of amplifiers depend on the back e.m.f. to the supply voltage ratio and on the load time constant. For large time constants and small back e.m.f.'s the amplifier becomes continuously conducting,

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so that the current flows through the load all the time, irrespective of whether the amplifier is cut off or not. In this case the mean load current is independent of the load inductance. With increasing back e.m.f. and/or a decrease in the load time constant, the current flow in the load becomes intermittent. In this case the average value of the load current decreases with the increase of load inductance until at some value of the time constant, a continuous conduction is again established. The continuous conduction cannot occur in half-wave circuits, and occurs only in full-wave circuits when the magnitude of back e.m.f. is below a certain critical value. If the back e.m.f. stays above a certain critical value, the magnetic amplifier may be designed to operate at greater load powers than without the back e.m.f. There are 16 figures and 3 Soviet-bloc references.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, Moisey Aronovich; LIPMAN, R.A., red.; BUL'DYAYEV, N.A., tekhn. red.

[Magnetic amplifiers and modulators] Magnitnye usiliteli i moduliatory. Moskva, Gosenergoizdat, 1963. 111 p. (Biblioteka po avtomatike, no.74) (MIRA 16:8)
(Magnetic amplifiers) (Modulation (Electronics))

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ROZENBLAT Moisey Aronovich; LIPMAN, R.A., red.; BORUNOV, N.I., tekhn. red.

[Magnetic amplifiers with self-saturation] Magnitnye usiliteli s samonasyshcheniem. Moskva, Gosenergoizdat, 1963. 125 p. (Biblioteka po avtomatike, no.75) (MIRA 16:8)
(Magnetic amplifiers)

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SIROTA, N.N., akademik, otv. red.; SOTSKOV, B.S., red.; ROZENBLAT, M.A., prof., red.; BASHKIROV, L.A., kand. khim. nauk, red.; KHOLYAVSKIY, S., red.izd-va; VOLOKHANOVICH, I., tekhn. red.

[Ferrites and contactless elements] Ferrity i beskontaktnye elementy; doklady. Minsk, Izd-vo AN BSSR, 1963. 418 p. (MIRA 17:3)

1. Vsesoyuznoye soveshchaniye po ferritam i po beskontaktnym magnitnym elementam avtomatiki. 3d, Minsk. 2. Akademiya nauk Bel.SSR (for Sirota). 3. Chlen-korrespondent AN SSSR (for Sotskov).

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ACCESSION NR: AT4035416 S/0000/63/000/000/0240/0254

AUTHOR: Rozenblat, M. A.; Subbotina, G. V.

TITLE: Conversion of digital codes into analog values by magnetic amplifiers

SOURCE: Vsesoyuznoye soveshchaniye po ferritam i po beskontaktny*m magnitny*m elementam avtomatiki. 3d, Minsk. Ferrity* i beskontaktny*ye elementy* (Ferrites and noncontact elements); doklady* soveshchaniya. Minsk, Izd-vo AN BSSR, 1963, 240-254

TOPIC TAGS: automation, control system, programmed control, magnetic amplifier, digital analog converter, code converter, multicascade amplifier, feedback

ABSTRACT: To meet the requirements of certain specific types of industrial automation (for example, programmed lathe control), the authors developed a procedure for conversion of digital codes into analog values, applicable to codes with any radix. A magnetic amplifier was used as the converter; this proved especially expedient in handling simultaneous signals from the computer because of the amplifier's ability to add a practically unlimited number of simultaneous signals. The most important design features of a converter, governing its parameters, are its accuracy and pass-band. Its accuracy and the maximum possible number of code digits which can be converted are determined: 1) by accurate maintenance

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ACCESSION NR: AT4035416

of the set values of input signals corresponding to individual digital positions, and 2) by the stability of the zero position and the amplifier's amplifying coefficient. The authors examined the converter error, determined the parameters and the negative feedback coefficient, studied the limitations imposed on a multicascade amplifier by a negative feedback and derived basic equations for the conversion design. The principles of multicascade adding amplifier design are discussed with emphasis on the magnetic converters developed by the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR), capable of adding and amplifying signals from a reversive binary counter with an error of less than half the first digit and a required minimum digit number of 7. A theoretical and experimental study showed that a 7-8 digit binary-code converter could be constructed from a monocascade magnetic amplifier and that conversion of seven binary-code digits is feasible in a two-cascade operation, using a magnetic modulator as the first cascade with subsequent amplification of the alternating voltage by transistors. Orig. art. has: 4 figures and 28 formulas.

ASSOCIATION: None

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACCESSION NR: AT4035416

SUBMITTED: 04Dec63 DATE ACQ: 07May64 ENCL: 00

SUB CODE: IE, DP NO REF SOV: 004 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.A.; ROZENTAL', Yu.D.

Law of optimum magnetic reversal of ferromagnetic cores with a rectangular hysteresis loop, i.e., keeping losses at a minimum. Dokl. AN SSSR 153 no.1:90-92 N '63. (MIRA 17:1)

1. Institut avtomatiki i telemekhaniki AN SSSR. Predstavleno akademikom B.N. Petrovym.

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L 44290-65 EWA(h)/EWT(1) Pi-4/Peb GS

ACCESSION NR: AT5011598 UR/0000/64/000/000/0016/0020

25
B+1

AUTHOR: Kerbnikov, F. I., Rozenblat, M. A. (Doctor of technical sciences)

TITLE: A new type of integrating magnetic amplifier 25

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and computer engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 16-20

TOPIC TAGS: integrating magnetic amplifier, magnetic amplifier, magnetic integrator, integrator stability, amplifier sensitivity

ABSTRACT: Integrating magnetic amplifiers utilize the same circuits usually used in electronic integrating devices. The voltage introduced at the input via an RC feedback is proportional to the derivative of the output voltage of the amplifier (see, e.g., S. B. Negnevitskiy, Avtomatika i telemekhanika, vol. XX, no. 10, 1959). Since the magnitude of the feedback capacitance is limited, one must increase the input resistance of the magnetic amplifier. However, since the usual resistance of the windings of the magnetic amplifier does not exceed a few hundred ohms, the

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L 44290-65

ACCESSION NR: AT5011598

artificial increase in the resistance leads necessarily to a significant decrease in the amplifier sensitivity and an increase in the relative drift of the zero. A new principle for magnetic amplifier design is presented in this paper which is free of the above-mentioned deficiencies. It is based on the fact that within the cores of the magnetic amplifiers with self-saturation there appears a constant component of the induction (B_0) whose magnitude is tightly coupled to the magnitude of the output voltage U_L. Arbitrary changes in U_L induce an emf within the feedback windings of the final stage of a multistage magnetic amplifier. This voltage, applied to the input of the first stage in opposition to the signal voltage U_i, then completes the new integrating magnetic amplifier. A proper choice of the number of stages and windings can result in time constants of the order of tens of minutes. A high sensitivity and stability is achieved by means of push-pull amplifiers even when the input signal does not change its polarity. In addition to the theoretical derivations the article presents the circuit diagram, design parameters, and operational characteristics of this new kind of experimental magnetic amplifiers. Tests showed that the zero drift of the integrating amplifier expressed in units of the input signal voltage did not exceed ±3 μV for a ±10% change of the supply voltage. Orig. art. has: 11 formulas, 4 figures, and 1 table.

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L 44290-65

ACCESSION NR: AT5011598

ASSOCIATION: None

SUBMITTED: 29Sep64 ENCL: 00 SUB CODE: EC

NO REF SOV: 004 OTHER: 000

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

MIKHAYLOVSKIY, V.N., otv. red.; AFANASENKO, M.P., red.; BERKMAN, R.Ya., kand. tekhn. nauk, red.; BLAZHKEVICH, B.I., kand. tekhn. nauk, red.; SINITSKIY, L.A., kand. tekhn. nauk, red.; ROZENBLAT, M.A., doktor tekhn. nauk, red.; REMENNIK, T.K., red.; KOSNITSER, D.M., red.

[Magnetic elements of automatic control, remote control, measurement techniques, and computer engineering; transactions] Magnitnye elementy avtomatiki, telemekhaniki, izmeritel'noi i vychislitel'noi tekhniki; trudy. Kiev, Naukova dumka, 1964. 651 p. (MIRA 18:2)

1. Vsesoyuznoye nauchno-tekhnicheskoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki, L'vov, 1962. 2. Chlen-korrespondent AN Ukr.SSR (for Mikhaylovskiy).

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

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ACCESSION NR: AP4015292 S/0280/64/000/001/0050/0064

AUTHOR: Rozenblat, M. A. (Moscow); Gendler, M. B. (Moscow)

TITLE: Logical potentialities of real threshold elements

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 1, 1964, 50-64

TOPIC TAGS: Boolean algebra, Boolean function, threshold element Boolean function, threshold element, threshold element logical diagram, logical design

ABSTRACT: The logical potentialities of real threshold elements are limited by threshold instability, the indefinite zone in which threshold-element output is ambiguous, and instability of input signals. The article considers, in a general form, the effect of the above factors on the logical potentialities of threshold elements and determines the conditions for carrying out specified threshold functions by such elements. The results of the investigation can be used for designing reliable threshold-element systems and for finding the optimum

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ACCESSION NR: AP4015292

realizations of specified threshold functions. The use of developed formulas is illustrated by these two examples: (1) Schemes with threshold elements having equal weights of input signals; (2) Threshold elements with parametrons. Orig. art. has: 6 figures and 30 formulas.

ASSOCIATION: none

SUBMITTED: 13Jun63 DATE ACQ: 12Mar64 ENCL: 00

SUB CODE: MM, IE NO REF SOV: 003 OTHER: 007

Card 2/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

L 19619-65 EWT(d)/EEC(k)-2/EED-2/EWP(1) Po-4/Pq-4/Pg-4/Pk-4 IJP(c)/
SSD/AFWL/BSD/RAEM(d)/ESD(gs)/ESD(dp) BB/GG

ACCESSION NR: AP5000261 S/0030/64/000/011/0047/0051

AUTHOR: Rozenblat, M. A. (Doctor of technical sciences)

TITLE: Magnetic storage for continuous quantities

SOURCE: AN SSSR. Vestnik, no. 11, 1964, 47-51

TOPIC TAGS: magnetic storage, hysteresis loop, magnetic core

ABSTRACT: Storage devices for two types of variables are necessary for automatic control systems: 1) for any value of the variable x (from $-x_{max}$ to $+x_{max}$); 2) for any value of the transfer coefficient k (from -1 to +1) which multiplies x. Magnetic storage utilizing a rectangular hysteresis loop appears to be most promising for this purpose. Two problems must be solved in this work: 1) converting the analog quantity from the form of an electric voltage or current to a proportional residual magnetic flux in the core; 2) obtaining an electric signal (at read-out) proportional to the core's magnetization, without changing that magnetization level. The second problem was solved by using a forked core with the equal cross section areas of bars 2 and 3 ($S_2 = S_3$), each equal to half the area of bar 1 ($S_1 = 2S_2 = 2S_3$). In this case $\phi_1 = \phi_2 + \phi_3$ and, at saturation, $\phi_1 = \phi_{1S}$, while

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ACCESSION NR: AP5000261

$\phi_2 = \phi_3 = 0.5\,\phi_{1S}$ in the same direction. The information is recorded on bar 1 by the current i_x, and the output signal (U_{out}) is derived from bars 2 and 3 when the read-out current i_{ro} is applied to the same bars. If the magnetic state is as shown in Fig. 1a on the Enclosures, then ϕ cannot be reversed unless i_x is sufficiently strong to produce a field in excess of the coericivity of the magnetic substance. If the initial state is as shown in Fig. 1b, the positive portion of the read-out pulse will shift the magnetic state (see Fig. 1c), and the negative part of the pulse will return it (Fig. 1b). In that case, U_{out} will depend on ϕ_1, as shown in Fig. 2a. The fall of U_{out} (line 1, Fig. 2a) can be eliminated (resulting in dashed line 2) by a compensation winding which, with a negative ϕ_1, prevents remagnetizing of bar 1 from i_{ro}. With a positive ϕ_1, the first pulse of i_{ro} establishes $\phi_3 = -\phi_{3S}$ and $\phi_1 = 0$. The same effect results from dividing bar 1 into two equal bars. With a rectangular i_{ro}, U_{out} is rectangular (see Fig. 2b) with a pulse length τ given by $\tau = \left(1 - \frac{|\Phi_1|}{\Phi_{1S}}\right)\frac{T}{2}$, where T is the period of the power

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ACCESSION NR: AP5000261

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voltage. This property can be used for the storage of k. The simplest compensated system permits only an approximate solution for problem 1 (accuracy 10 - 20%) when $\phi_1 = -\phi_{1S}$ at recording. The accuracy may be increased by superimposing a high-frequency field to produce "ideal magnetizing." The most radical solution used negative feedbacks of the rectified U_{out} applied to the input of the recorder amplifier. The accuracy of this method is limited by the fact that actual ferromagnetic materials have imperfect rectangular hysteresis loops, but it may be held to 0.1 - 0.5%. Circuits were developed in which semiconductor switches in the feedback circuit allowed multiplication and division of the output variable. Comments on integrating and differentiating devices are presented. Orig. art. has: 6 figures and 5 equations.

ASSOCIATION: Institut avtomatiki i telemekhaniki (tekhnicheskoy kibernetiki) Gosudarstvennogo komiteta po priborostroyeniyu, sredstvam avtomatizatsii i sistemam upravleniya pri Gosplane SSSR i Akademii nauk SSSR (Institute of Automation and Telemechanics /Technical Cybernetics/ of the State Committee on Instrument Making, Automation Facilities and Control at the State Planning Committee, SSSR, and the Academy of Sciences SSSR)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

KASATKIN, O.G. (Moskva); ROZENBLAT, M.A. (Moskva)

Information readout in a transfluxor used as an analog memory component. Avtom. i telem. 25 no.4:562-569 Mr '64. (MIRA 17:6)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACCESSION NR: AP4036515 S/0103/64/025/005/0712/0717

AUTHOR: Rozenblat, M. A. (Moscow); Rozental', Yu. D. (Moscow)

TITLE: Dynamic characteristics of square-loop ferrite cores magnetized by a sinusoidal voltage

SOURCE: Avtomatika i telemekhanika, v. 25, no. 5, 1964, 712-717

TOPIC TAGS: ferrite, ferrite core, square loop ferrite, square loop ferrite characteristics, sinusoidal voltage magnetized ferrite

ABSTRACT: The processes transpiring in square-loop ferrite cores when the magnetic flux reverses in symmetrical cycles approaching a limit condition under the action of a sinusoidal voltage are considered. The transition from the core state $-B_m$ to the state $+B_m$ via a dynamic initial flux B_{di} is considered in physical terms and is connected with the formula of Shamayev, et al. (Nauchn. dokl. vy*ssh. shkoly*. Elektromekhanika i avtomatika, no. 1, 1959) for the maximum

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ACCESSION NR: AP4036515

value of dynamic impedance. Experimental curves for the 100—800-kc band and simple formulas permit calculating the transient flux-reversal process, and their use is recommended in designing high-speed magnetic amplifiers, magnetic-diode circuits, etc. Orig. art. has: 7 figures and 9 formulas.

ASSOCIATION: none

SUBMITTED: 13Sep63 ATD PRESS: 3078 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

AVEN, O.A.; DVORETSKIY, V.M.; DOMANITSKIY, S.M.; ZALMANZON, L.A.; KRASSOV, I.M.; KRUG, Ye.K.; TAL', A.A.; KHOKHLOV, V.A.; BULGAKOV, A.A.; DEMIDENKO, Ye.D.; BERNSHTEYN, S.I.; YEMEL'YANOV, S.V.; LERNER, A.Ya.; MEYEROV, M.V.; PEREL'MAN, I.I., FITSNER, L.N.; CHELYUSTKIN, A.B.; ZHOZHIKASHVILI, V.A.; IL'IN, V.A.; AGEYKIN, D.I.; GUSHCHIN, Yu.V.; KATYS, G.P.; MEL'TTSER, L.V.; PARKHOMENKO, P.P.; MIKHAYLOV, N.N.; FITSNER, L.N.; PARKHOMENKO, P.P.; ROZENBLAT, M.A.; SOTSKOV, B.S.; VASIL'YEVA, N.P.; PRANGISHVILI, I.V.; POLONNIKOV, D.Ye.; VOROB'YEVA, T.M.; DEKABRUN, I.Ye.

Work on the development of systems and principles of automatic control at the Institute of Automatic and Remote Control during 1939-1964. Avtom. i telem. 25 no. 6:807-851 Je '64. (MIRA 17:7)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.A., doktor tekhn. nauk

Magnetic memory for continuous quantities. Vest. AN SSSR 34 no.11:47-51 N '64. (MIRA 17:12)

1. Institut avtomatiki i telemekhaniki [tekhnicheskoy kibernetiki] Gosudarstvennogo komiteta po priborostroyeniyu, sredstvam avtomatizatsii i sistemam upravleniya pri Gosplane SSSR i Akademii nauk SSSR.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.A., prof.; NANOBASHVILI, M.D., inzh.

Method for recording in carrying out logical operations using multicore magnetic elements. Elektrotekhnika 35 no.5:56-58 My'64 (MIRA 17:8)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACCESSION NR: AP4034540 S/0020/64/155/005/1066/1069

AUTHOR: Rozenblat, M. A.; Kasatkin, O. G.

TITLE: Magnetic integration and differentiation of electrical signals

SOURCE: AN SSSR. Doklady*, v. 155, no. 5, 1964, 1066-1069

TOPIC TAGS: analog computer, magnetic memory, electrical signal integration, electric signal differentiation, branched magnetic core

ABSTRACT: The authors have analyzed experimentally and theoretically the characteristics of branched magnetic cores introduced recently for the memory part of analog computers (G. L. Boyajian, Proc. Special Techn. Conf. on Nonlinear Magnetics and Magnetic Amplifiers, September, 1959; G. F. Haas, Naehrichteutechn. Zs. #8, 1961). The sources of errors are considered in connection with the duration of integration. By a small modification, the branched core can be used for differentiation, the condition for which is the proportionality of the induced voltage to the magnetic flux. Orig. art. has: 3 figures and 10 formulas.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACCESSION NR: AP4034540

ASSOCIATION: Institut automatiki i telemekhaniki (Institute of Automation and Telemechanics)

SUBMITTED: 23Dec63 ATD PRESS: 3051 ENCL: 00

SUB CODE: DP, EM NO REF SOV: 001 OTHER: 002

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.A., doktor tekhn. nauk, otv. red.; BUYARCHENKOV, M.A., kand. tekhn. nauk, red.; KERNIKOV, F.I., red.; ROZENTAL', Yu.D., inzh., red.

[Magnetic analog elements] Magnitnye analogovye elementy. Moskva, Nauka, 1965. 226 p. (MIRA 18:3)

1. Moscow. Institut avtomatiki i telemekhaniki.

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L 55342-65 EWT(d)/EEC(k)-2/EEC(f)/EEC-4/EED-2/EWP(1) Pm-4/Pn-4/Pq-4/Pg-4/Pk-4/Pl-4 IJP(c) BB/GG/GS

ACCESSION NR: AT5014622 UR/0000/65/000/000/0005/0015
681.142.324

68
62
16C
B+1

AUTHOR: Rozenblat, M. A. (Doctor of technical sciences)

TITLE: Use of magnetic elements for the processing of information in analog form

SOURCE: Veseoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki. 9th, Yerevan, 1963. Magnitnyye analogovyye elementy (Magnetic analog elements); doklady soveshchaniya. Moscow, Izd-vo Nauk, 1965, 5-15

TOPIC TAGS: analog magnetic element, analog magnetic amplifier, analog quadrator, analog functional converter, integrating amplifier, analog integrator, analog magnetic memory element

ABSTRACT: Existing magnetic elements utilized for the processing of information in analog form exhibit drawbacks such as: 1) a narrow passband in the case of the multistage amplifier (determined by the stability conditions (M. A. Rozenblat, G. V. Subbotina, Avtomatika i telemekhanika, 1961, 22, no. 1, 97-106)); 2) complex design and limited accuracy in the case of integrating and differentiating elements (caused by low input resistance of magnetic amplifiers and the absence of large stable capacitors); and 3) difficulties during the design of various

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ACCESSION NR: AT5014622

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functional converters and multiplying devices because of the pulsation of the output voltage of the magnetic amplifiers. On the basis of 15 Soviet and 8 Western references, the present paper investigates theoretical and experimental ways for the elimination of the deficiencies listed above. The discussion covers magnetic amplifiers, quadrators, functional converters, quadrant multipliers, universal functional converters of unipolar signals, integrating amplifiers (drift-free integrators), and analog memory elements. "F. I. Kerbnikov, G. V. Subbotina, M. A. Boyarchenkov, O. G. Kasatkin, V. K. Rayev, Ye. D. Larin and others participated in the development and investigation of individual magnetic analog elements and setups." Orig. art. has: 18 formulas and 9 figures.

ASSOCIATION: None

SUBMITTED: 28Dec64 ENCL: 00 SUB CODE: DP

NO REF SOV: 015 OTHER: 008

Card 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M. A.

L 54868-65 EWT(d)/EWT(m)/EEC(k)-2/EWP(i)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EED-2/
EWP(b)/EWP(l)/EWA(c) Pq-4/Pf-4/Pad/Pg-4/Pk-4 IJP(c) BB/JD/HW/JG/GG
ACCESSION NR: AP5013852 UR/0103/65/026/005/0938/0942
681.142.6

79
58
B

AUTHOR: Boyarchenkov, M. A.

TITLE: All-Union Conference on magnetic elements of automation and computer technique

SOURCE: Avtomatika i telemekhanika, v. 26, no. 5, 1965, 938-942

TOPIC TAGS: electric engineering conference, magnetism conference, computer component, automation equipment, automation, electronic data processing

ABSTRACT: The Ninth All-Union Conference on Magnetic Elements of Automation and Computer Technology, held in Kaunas from 7 to 10 September 1964, was organized by the National Committee of the USSR on Automatic Control, the Institute of Power and Electrical Engineering of the Academy of Sciences, Lithuanian SSR, the Lithuanian Scientific and Technical Society of the Instrument Building Industry, and the Institute of Automation and Telemechanics of the Main Committee on Instrument Building, Means of Automation, and Control Systems under Gosplan and the Academy of Sciences USSR. Over 450 participants discussed some 90 reports concerning the theory, design,

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ACCESSION NR: AP5013852

production, and application of magnetic and magnetic-semiconductor elements. Reports were presented for seven areas: digital and analog elements, memory devices, magnetic power devices, magnetic amplifiers and converters, parametrons, and power sources.

At the opening plenary session, M. A. Rozenblat presented a survey of the present state of contactless magnetic elements, which he considers to be one of the most efficient and promising technical means of automation and computer technology. Problems of designing logic elements to provide stable operation for various types of circuits were discussed in a series of reports. B. A. Yefimov and G. N. Chizhukhin reported on the development of modules of ferrite-transistor elements (FTE) which can be used for various types of computers and also for discrete automation for general and special purposes. This system provides reliable operation at a 200-kc clock frequency in the -10 to +50° C temperature range.

The same authors together with M. A. Aksenov reported on the development of a general-purpose heavy-duty FTE which can be used as a cell of a clock-frequency pulse generator or as an independent heavy-duty control

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ACCESSION NR: AP5013852

element.[14] It is capable of performing command recording or readout of information reaching it in large quantities from a low-power FTE. I. A. Tyumin, B. A. Yefimov, and A. A. Shavrov reported on the development and testing of biax-type logic circuits operating at 1 Mc and performing several logic operations. Advantages cited are: high s/n ratio, about 20; high switching rate, about 2 Mc; and high reliability due to the simplicity of the circuit. Such circuits may also be used in complex logic devices. Additional reports discussed logic circuits using biax-type elements in a working storage device with a nondestructive readout cycle of 10^{-7} sec and a recording time for new information of several microseconds.

L. P. Afinogenov et al. reported on discrete and discrete-analog computer units based on the use of the area of an emf pulse originating in the winding during magnetization reversal in the ferrite. Development of ferrite matrixes which release a voltage pulse at the output with an area proportional to the code supplied at the matrix input was also discussed.

Problems connected with the development of single-wire memory elements with multiaperture ferrite plates were presented by R. A. Lashev-

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ACCESSION NR: AP5013852

skiy et al. A. S. Sverdlov and others presented results of developing working storage units using miniature memory cubes made with multiaperture ferrite plates.

Thin-film technology was discussed in several reports. A paper by Ye. F. Berezhnyy et al. dealt with the development of a super storage device built on thin-film matrices with conductive substrates with a capacity of 64 56-bit words and a cycle of 400 nsec. Experiments with magnetic-film storage devices produced by electrochemical deposition on glass and metal cylindrical substrates were discussed, and a method of using an element of cylindrical magnetic film in a matrix storage device was also reported.

A. Tutauskas and R. Litvinaytis reported on a stable storage device with a short access time, a capacity of 512 x 32 bits, an access rate of 500 kc, and a readout time of 1 μsec. A. B. Lyasko et al. have developed a small decade counter of periodic and nonperiodic signals in which a parametric element with five stable phase states was used. The counter displays better energy properties than other known counters, high reliability, and high noise immunity. A. G. Rabin'kin reported on the characteristics of

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ACCESSION NR: AP5013852

new high-coercivity (5000 oe) alloys of the cobalt-platinum system. M. A. Rozenblat et al. discussed the theory and design of magnetic analog computing devices (adder, integrator, multiplier) based on single-stage magnetic amplifiers using magnetic analog storage.

A large number of reports was devoted to the theory and application of power magnetic devices. The papers presented by the Gor'kiy school of A. M. Bamdas concerning frequency multipliers and voltage stabilizers were of great interest in this field.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: DP, IE

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4021-F

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

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[illegible], M.A., dokton tekhn.nauk

Tenth Yugoslav seminar on automatic control and measurements. Vest. AN SSSR 35 no.7[illegible] p. 165. (MIRA 18:8)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACCESSION NR: AP4035078 S/0103/64/025/004/0562/0569

AUTHOR: Kasatkin, O. G. (Moscow); Rozenblat, M. A. (Moscow)

TITLE: Readout from a transfluxor used as an analog-memory element

SOURCE: Avtomatika i telemekhanika, v. 25, no. 4, 1964, 562-569

TOPIC TAGS: transfluxor, storage element, analog storage element, transfluxor storage element, transfluxor readout

ABSTRACT: Methods of raising the readout magnetizing force in a transfluxor without erasing the recorded analog information and preserving the single-valued correspondence between recorded and reproduced quantities are considered. A formula is developed for the minimum permissible load-circuit resistance. When rectification of the transfluxor output voltage is controlled by a gating switch, the distortions due to the non-square shape of the hysteresis loop and the nonlinearity of characteristics of the rectifier diodes are eliminated. A split-control-magnet

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ACCESSION NR: AP4035078

transfluxor is found to be the most suitable for use as an analog element. A special compensation winding acting against the deblocking action of the readout magnetizing force is recommended; the winding tends to raise the transfluxor output power without increasing its size. Orig. art. has: 7 figures and 13 formulas.

ASSOCIATION: none

SUBMITTED: 22Jun63 DATE ACQ: 26May64 ENCL: 00

SUB CODE: DP, IE NO REF SOV: 000 OTHER: 004

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

L 20416-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP6009887 SOURCE CODE: UR/0413/66/000/004/0080/0080

55
B

INVENTOR: Rozenblat, M. A.; Kasatkin, O. G.

ORG: none

TITLE: Magnetic analog integrator. 16 Class 42, No. 179018 [announced by the Institute of Automation and Telemechanics (Engineering Cybernetics), AN SSSR (Institut avtomatiki i telemekhaniki (tekhnickeskoy kibernetiki) AN SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 80

TOPIC TAGS: computer component, magnetic core, analog integrator, analog system, pulse integrator

ABSTRACT: A magnetic analog integrator containing a three-hole transformer is introduced. To maintain the integrating process when the source of a-c read current is disconnected, the magnetic circuit has four windings. One of the windings acts as a bias winding while a second is coupled to the amplifier output. The third, a local feedback winding, is connected to the input voltage divider. The fourth, a read winding, is coupled to the output rectifier and is wound so as to include all three holes of the magnetic circuit. Orig. art. has: 1 figure. [JR]

SUB CODE: 09/ SUBM DATE: 19Feb63/ ATD PRESS: 4222

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACC NR: AM6032370 Monograph UR/

Boyarchenkov, Mikhail Aleksandrovich; Kerbinov, Fedor Ivanovich; Rayev Vyacheslav Konstantinovich; Rozenblat, Moisey Aronovich

Impulse regulators on contactless magnetic elements (Impul'snyye regulyatory na beskontaktnykh magnitny elementakh) Moscow, Izd-vo "Energiya", 1966. 119 p. illus., biblio. 16,000 copies printed.

Series note: Biblioteka po avtomatike, vyp. 186

TOPIC TAGS: summing amplifier, contactless relay regulator, impulse regulator, magnetic amplifier, electric relay

PURPOSE AND COVERAGE: This booklet is intended for engineers, technicians, and advanced students in the field of automation. The booklet discusses the fundamentals of contactless proportional plus-differential, proportional plus-integral, and proportional plus-differential plus-integral relay controllers with magnetic elements. Recommendations are given for the selection of separate regulator elements along with the circuit diagrams and basic technical characteristics of these elements. Results of investigations concerning the contactless proportional plus-integral relay controller with magnetic amplifiers and contactless mag-

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ACC NR: AM6032370

netic relays are described in detail. No personalities are mentioned. There are 16 references: 13 Soviet and 3 non-Soviet.

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1. Structural circuit diagrams of the regulators -- 6
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5. Contactless relay -- 41
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SUB CODE: 09/ SUBM DATE: 22Apr66/ ORIG REF: 013/ OTH REF: 003/

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ACC NR: AP7001890 SOURCE CODE: UR/0020/66/171/004/0814/0816

AUTHOR: Rozenblat, M. A.

ORG: Institute of Automation and Telemechanics (Institut avtomatiki i telemekhaniki)

TITLE: Majority function for continuous variables

SOURCE: AN SSSR. Doklady, v. 171, no. 4, 1966, 814-31

TOPIC TAGS: majority function, analog system, signal transmission, computer logic, algebraic logic

ABSTRACT: One of the most important applications of the majority function

$$y = \text{maj}\,(x_1, x_2, \ldots, x_n), \qquad (1)$$

is its use to isolate the true value of the signal in digital systems with parallel redundancy. In this case the majority function is often termed renewal function and the element performing this function, renewing element. It is shown that a majority (or renewal) function can also be determined for continuous signals and serve as the basis for developing renewing elements for

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ACC NR: AP7001890

parallel-redundancy analog systems. This is accomplished by utilizing the known relationship between logic operations with binary and with continuous variables (S. A. Gizburg, Tr. I Kongressa Mezhdunarodn. federatsii po avtomatich. upr. "Tekhnicheskiye sredstva avtomatiki." Izd. AN SSSR, 1961, p 267). Since the disjunction function for binary variables corresponds to the function of isolation of the maximal of continuous variables, and the conjunction function, to the function of isolation of the minimal of continuous variables, the formulas derivable from relation (1) may be rewritten as follows with respect to continuous signals:

$$y = \mathrm{maj}\,(x_1, x_2, \ldots x_{2k-1}) = \min\,(u_1, u_2, u_3, \ldots, u_{c_{2k-1}^k}), \qquad (2)$$

where

$$\begin{aligned} u_1 &= \max\,(x_1, x_2, \ldots, x_{k-1}, x_k), \\ u_2 &= \max\,(x_1, x_2, \ldots, x_{k-1}, x_{k+1}), \\ &\ldots\ldots\ldots\ldots\ldots\ldots \\ u_{c_{2k-1}^k} &= \max\,(x_k, x_{k+1}, \ldots x_{2k-2}, x_{2k-1}), \end{aligned} \qquad (3)$$

and

$$y = \mathrm{maj}\,(x_1, x_2, \ldots, x_{2k-1}) = \max\,(v_1, v_2, v_3, \ldots, v_{c_{2k-1}^k}), \qquad (4)$$

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

SOV/51-7-4-23/32

AUTHORS: Stauer, E.V. and Rozenblat, M.G.

TITLE: Effect of Pulverization on the Optical and Electrical Properties of Certain ZnS Phosphors

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 570-571 (USSR)

ABSTRACT: ZnS-Cu, ZnS-Cu,Al, ZnS-Cu,Mn and other phosphor powders were ground for half an hour; as a result the mean dimensions of the powder particles were reduced by a factor of 2-3. Luminescence experiments were carried out on these ground powders using a 100 μ thick capacitor filled with the phosphor mixed with silicone oil. Pulverization reduced the intensity of both photoluminescence and electroluminescence. The difference between the intensities of electroluminescence of pulverized and non-pulverized phosphors decreased with rise of the intensity and frequency of the exciting electric field (Fig 1). In certain phosphors pulverization produced displacement of the electroluminescence spectrum towards longer wavelengths; this displacement was greater when the exciting electric field intensities were high. Temperature quenching of electroluminescence of pulverized phosphors began at lower temperatures than in non-pulverized phosphors (Fig 2). After pulverization the real and imaginary parts of complex permittivity (ε' and ε'') decreased at all

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Effect of Pulverization on the Optical and Electrical Properties of Certain ZnS Phosphors SOV/51-7-4-25/32

frequencies and intensities of the applied electric field. In phosphors which exhibit strong dependences of ε' and ε'' on the frequency and intensity of the applied field, such dependences become less clear after pulverization (Fig 3). When temperature is varied the values of ε' and ε'' of pulverized phosphors alter to a smaller extent than those of non-pulverized phosphors. Pulverization produces also a decrease of the dark and photo-conductivities of phosphors and a decrease in the ratio of photoconductivity to dark conductivity. All these changes are due to a combination of the change in the particle dimensions and the effect of deformations produced in the phosphor particles during grinding. Acknowledgment is made to F.I. Kolomoytsev for his advice. There are 3 figures and 3 references, 1 of which is Soviet and 2 English.

SUBMITTED: April 15, 1959

Card 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.M.

1 X

A faster method for bacteriological analysis of water with membrane filters. E. M. Nisnevich and M. M. Rozenblat. *Lab. Prakt.* (U. S. S. R.) 1939, No. 1, 13-14.

Carefully washed used celluloid x-ray plates can be successfully used as filters. The filters are prepd. by taking 2.5-3 g. of the x-ray plate, 50 cc. acetone and 25 cc. wine alc. The mixt is shaken, filtered through a cotton filter and is then poured over a smooth 30 × 30 cm. glass plate. After drying the filter, it is wetted with water, taken off the glass surface and again dried between 2 sheets of filter paper. The filter is given the shape of Zeiss' filter plates. They are inserted into Zeiss' filter and sterilized for 1-1.5 hrs. at 130°. A sheet of filter paper of the same size is placed on the metal plate of the Zeiss' filter to give the filters the necessary strength. Four hundred expts. performed with artificially prepd. mixts. contg. *B. coli commune*, *B. coli communior* and *B. coli aërogenes* in water gave consistent results in all cases after 16-20 hrs. The time required for investigations is reduced to a max. of 24 hrs. giving as accurate results as those obtained by the standard method requiring much longer time. 7 references. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.M.; SOKOV, V.I.

Testing presses by means of hydraulic loading devices. Kuz.-shtam. proizv. 4 no.12:26-29 D '62. (MIRA 16:1)
(Power presses—Testing) (Oil hydraulic machinery)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

IZOTOV, Ye.N.; ROZENBLAT, M.M.; SOKOV, V.I.

Friction clutches used as safety devices. Kuz.-shtam. proizv. 3 no. 2:25-28 F '61. (MIRA 14:1)
(Power presses--Safety appliances)
(Clutches (Machinery))

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROLEN BLAT, M.M.

"Case of Otogenous Sepsis, Complicated with a Contralateral Abscess in the Optic Cells," Vest. Oto-rino-laringol., No. 4, 1948. Mbr., Otorhinolaryngological Odessa Inst., Advanced Training for Physicians, -c1948-.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

S/182/60/000/010/003/006
A161/A029

AUTHORS: Fil'kin, I.N.; Rozenblat, M.M.

TITLE: "Retinaks" in Clutches and Brakes of Presses

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 10, pp. 28 - 30

TEXT: "Retinaks" is a friction material developed a few years ago by IMASh AN SSSR (IMASh AS USSR) and VNIIATI GKKh in joint work. Its major components are asbestos, barite and phenol-formaldehyde resin [Abstracter's note: No other composition details are given]; it withstands pressure of up to 50 kg/cm^2 on the friction surface and develops a peculiar surface layer protecting it from wear. It works particularly well in heavy-duty brakes where the temperature reaches 400--1,000°C and has a stable friction coefficient of about 0.3 even in this work. There are two "retinaks" grades ФК-24А (FK-24A) without brass chips, and ФК-16Л (FK-16L) containing brass chips. It has become into extensive use in brakes of aircraft wheels, walking excavators and some other machines, but no data are available on its behavior under definite work conditions, which delays its application in other machines including presses. The pressed asbestos called "ferodo" which is used up to now in clutches and brakes of presses is not satisfactory, and the

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friction linings have to be replaced every 3 - 6 months, and at high temperatures of about 200°C "ferodo" loses its friction properties and withstands only a pressure of 4 - 6 kg/cm^2. Due to these "ferodo" properties obsolete multidisk clutch and brake designs are still being used. In view of this, the press laboratory of the "Tyazhmekhpress" plant has tested "retinaks" in comparison with "ferodo" in a single-disk design with square and round pieces of these materials attached to the disk. One (driven) disk of the 315-ton K-274A (K274A) press has been used for this purpose, then a single-disk clutch and brake. It was stated that after a while the "retinaks" surface became nearly mirror-smooth and its wear stabilized, and the absolute wear of the insert (on both sides) was about 0.15 mm after 20,000 brakings. This means that "retinaks" gives the possibility of using single-disk clutches and brakes in presses with inserts of "retinaks". Their advantages are: simplicity of design, better heat transfer and easier removal of the wear products, lower inertia of the driven masses and lower friction work, lower manufacturing costs, economy of metal. Replacement of worn inserts is simple; it is only necessary to shift the pressure disk 50 - 70 mm off along the shaft. The "Tyazhmekhpress" plant has developed new single-disk clutch and brake designs. Laboratory tests led to the following conclusions. 1) "Retinaks" is 5 - 8 times more wear-resistant than "ferodo" in clutches and brakes. 2) Surface pressure of 10 - 15 kg/cm^2 on "retinaks" can be recommended. 3) Single-disk clutches and brakes with

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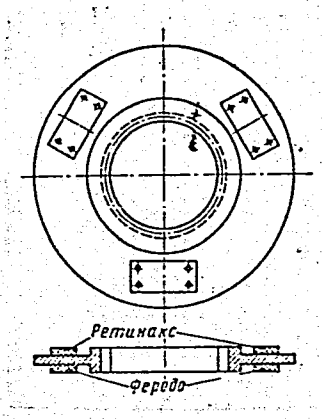
S/182/60/000/010/003/006
A161/A029

"Retinaks" in Clutches and Brakes of Presses

"Retinaks" inserts ensure normal operation of a press. The fitting surfaces of the inserts require no additional machining or coating. It is necessary to continue tests of "retinaks" under different conditions and applications in order to provide in the shortest possible time the necessary data for designers and production engineers. The article includes a drawing of a test disk used. There is 1 figure.



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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

MAGAZINER, V.V.; ROZENBLAT, M.M.; SOKOV, V.I.

Design of hydropneumatic safety appliances for mechanical sheet stamping presses. Kuz.shtam. proizv. 3 no.1:23-28 Ja '61. (MIRA 14:1)

(Power presses—Safety appliances)
(Sheet-metal work)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

FIL'KIN, I.N.; ROZENBLAT, M.M.; SHIROKOV, E.V.

Increasing the reliability of the means of controlling mechanical presses. Kuz.-shtam.proizv. 3 no.7:16-20 Jl '61. (MIRA 14:6)
(Power presses) (Automatic control)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROMENBLAT, Prof. M.S.

"The Physiological Norms of the Thermal Reaction for the Aural Lab rinth in Young Children", Vest. Oto-rino-laringol., No. 2, 1948.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.S.

22008 Rozenblat, M.S. Terapiya tuberkuleza gortani. Uchen. Zapiski Nauch-issled, in-ta tuberkuleza v Odesse, Ch. 2, 1948, s. 71-74

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROSENBLATT, M. S., KRICHEVSKAIA, E. R., BRUK, B. F.

Importance of examination of gastric and bronchial lavage for tubercle bacilli. Probl. tuberk., Moskva No. 3, May-June 50. p. 9-12

1. Of the Scientific-Research Institute for Tuberculosis in Odessa (Director--Docent Ya. I. Rozenblit).

CLML 19, 5, Nov., 1950

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROSENBLAT, M.S.

ROSENBLAT, M. S.

Streptomycin therapy of tuberculosis of pharynx, larynx and oral cavity. Vest. otorinolar. 12:4, July-Aug. 50. p. 27-33

1. Of the Phthisiolaryngological Clinic of the Scientific-Research Institute for Tuberculosis in Odessa.

CLML 19, 5, Nov., 1950

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.S.

Paralaryngeal method of administration of streptomycin in the treatment of dysphagia in laryngeal tuberculosis. Probl. tuberk., Moskva no. 6:71-72 Nov-Dec 1952. (CLML 23:5)

1. Of the Phthisio-Laryngological Clinic (Head -- M. S. Rozenblat) of Odessa Scientific-Research Institute of Tuberculosis (Director -- Docent Ya. I. Rozenblat).

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

M.S. ROSENPLAT Nov/Dec 52

USSR/Medicine - Tibon

"Experimental Use of Tibon in Pulmonary and Laryngeal Tuberculosis," Laryngophthisis Dept, Sci-Res Tuberculosis Inst., Odessa

Vest Otorinolar, No. 6, p. 79

The author presents a brief description of his exptl use of Tibon in cases of pulmonary and laryngeal tuberculosis. Clinical and X-ray observations of patients treated with this drug revealed: a decrease in the inflammatory process, made manifest by a decrease in cough and expectoration; the disappearance of infiltrations surrounding the lesions, their induration and eventual absorption. In some cases, the administration of Tibon had to be discontinued due to its toxic properties made manifest by the usual symptoms of nausea, vomiting, headache, etc,; in one case, yellow jaundice was attributed directly to the effect of Tibon.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M. S., prof.

Otogenic abscess of the parietal lobe of the brain resulting in serous meningoencephalitis. Vest. otorin. no.2:104-105 '62. (MIRA 15:2)

1. Iz Odesskogo instituta usovershenstvovaniya vrachey i Odesskogo oblastnogo psikhonevrologicheskogo dispansera.

(ENCEPHALITIS) (BRAIN--ABSCESS) (EAR--DISEASES)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M.S.

Closed wound of the skull causing unilateral disturbance of the sensory functions. Zhur. ush., nos. i gorl. bol. 22 no.1:89-91 Ja-F '62. (MIRA 15:5)

1. Iz Odesskogo oblastnogo psikhonevrologicheskogo dispansera. (SKULL--WOUNDS AND INJURIES) (SENSES AND SENSATIONS)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

ROZENBLAT, M., kand.tekhn.nauk

Gaining altitude. Grazhd.av. 17 no.7:4-5 Jl '60. (MIRA 13:8)

(Airplanes--Take-off)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2

MOSKALENKO, A.; ROZENBLAT, M.

Brigade of communist labor. Kozh.-obuv.prom. 2 no.1:11-13 Ja '60. (MIRA 13:5)

(Kiev--Shoe manufacture)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001445610017-2"