STOLOV, A. M.

3

87150

S/057/60/030/012/003/011
B019/B056

26.2311

AUTHORS: Klashkin, V. A., Zavarts, D. Ye., Komar, Ye. G., Larionov, [illegible], Monoszon, N. A., Skotnikov, V. V., and Stolov, A. M.

TITLE: An Investigation of the Electric and Magnetic Discharge Characteristics of "Al'fa" Research Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12, pp. 1404 - 1414

TEXT: The authors studied the electric and magnetic discharge characteristics under single-period conditions. The total discharge current is measured by means of a Rogovskiy girdle, having the shape of a spiral made of nichrome. The signal was integrated in an RC element, fed to one of the two channels of a double-beam oscilloscope. In a similar manner, the field strength of the rotational field was measured. According to voltage and current oscillograms the mean resistance of the plasma column and the energy generated in it were calculated, a constant inductivity of the discharge coil being assumed. Accordingly, the

Card [illegible]

discharge column has an inductivity of $(2-3)\cdot 10^{-6}$ henries. Furthermore, an electron- and ion temperature of about $40\cdot 10^{6}$ °K was obtained with a pressure of $2\cdot 10^{-4}$ mm Hg and a discharge energy of about 100 kilojoules. The distribution of the magnetic field over the cross section of the chamber was determined with probes. The results obtained are graphically represented in Fig.9. It was found that the electric current lines in the discharge are of helical character similar to the shape of the magnetic field, which leads to an increase of the longitudinal magnetic flux in the chamber. In order to conserve current constancy, it is necessary that rotational currents be induced in the walls of the outer chamber. This leads to a change in the field direction of the longitudinal magnetic field in the exterior discharge ranges and in the space between outer and inner chamber. The already mentioned increase of the field strength of the longitudinal magnetic field corresponds to a maximum azimuthal current in the plasma of $(2-2.5)\cdot 10^{6}$ a. Exactly this current must be induced in the walls of

Card [illegible]

the outer chamber. From an analysis of the distribution curves of the magnetic fields and the discharge currents, it is found that the density vector of the electric current has a direction over the total discharge cross section, which nearly agrees with the direction of the magnetic field. Further, some experimental conditions were determined, under which the discharge current in the outer regions of discharge has a direction inverse to the discharge current in the inner regions. There are 11 figures, 1 table, and 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury (Scientific Research Institute of Electrophysical Apparatus)

SUBMITTED: July 15, 1960

Card [illegible]

87457

S/057/60/030/012/004/011
B019/B056

26.2311

AUTHORS: Burtsev, V. A., Stolov, A. M., Shakhov, V. V.

TITLE: Measurement of the Energy Flux Emitted by Plasma in "Al'fa" Research Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12, pp. 1415 - 1421

TEXT: For measuring the energy emitted from the walls of the discharge chamber, a spherical black body with a low thermal capacity and an absorption coefficient of nearly unity was used. By means of this black body only measurements of the total energy emission could be made, because its time lag was too great. For measuring the time dependence of the energy fluxes, a plane pickup (bismuth thermocouple) was used. The signals of the two pickups were made visible by an oscilloscope. The measurements showed that the apparatus used here records not only that part of the energy which is introduced into the plasma. It is assumed that by arc discharges a considerable part of energy is liberated by local emissions, and also a loss occurs as a result of oscillations of

Card 1/3

87457
S/057/60/030/012/004/011
B019/B056

Measurement of the Energy Flux Emitted by Plasma in "Al'fa" Research Installation

the magnetic field of discharge. The recorded energy emission practically begins with a considerable lag relative to the beginning of discharge. The authors thank B. P. Konstantinov for the suggestion to use a black body for the measurements, and they also thank L. M. Andrezen and L. I. Zantova of the chemical laboratory for their help in producing the pickups. There are 7 figures and 4 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury (Scientific Research Institute of Electrophysical Apparatus)

SUBMITTED: July 15, 1960

Card 2/3

Card 3/3

40739

S/120/62/000/004/004/047
E194/E420

AUTHORS: Monoszon, N.A., Stolov, A.M., Gashev, M.A., Spevakova, F.M., Yavno, A.Kh., Kornakov, Ye.V., Kulakov, F.M., Nadgornyy, V.P., Gorshkova, Ye.G.

TITLE: The supply system for the electromagnet of a proton synchrotron of 7 Gev

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 27-33

TEXT: The article describes the supply system for an electromagnet, the field of which increases at the steady rate of 6.7×10^3 Oe/sec to reach a maximum value of 9300 Oe in 1.55 sec and then falls off exponentially in 0.8 sec, the repetition frequency is 10 to 12 cycles per minutes. The voltage on the electromagnet is increased from 5000 to 10250 V with a maximum current of 2500 A. An induction motor of 3500 kW, 6 kV, 740 rpm drives through a fluid coupling a 6 phase alternator of peak output 37500 kW, 8.2 kV, and an auxiliary generator of 250 kW, 380 V for auxiliary supply to the 12-phase ignitron rectifier. During the current decrement period the rectifier operates as an inverter. A description of the smoothing circuit

Card 1/2

The supply system for the electro-... S/120/62/000/004/004/047
E194/E420

is given. Particular fault conditions of the circuit are analysed and the protective devices fully described. The performance is illustrated by oscillograms. Schematic and block circuit diagrams are given and an outline drawing of the ignitrons. There are 8 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury GKAE (Scientific Research Institute for Electrophysical Apparatus GKAE)

SUBMITTED: April 10, 1962

Card 2/2

S/120/62/000/004/031/047
E140/E420

AUTHORS: Monoszon, N.A., Stolov, A.M., Spevakova, F.M.

TITLE: The influence of parasitic parameters of the proton synchrotron electromagnets on the asymmetry of the magnetic field and methods of compensating it

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 168-171

TEXT: The strictest requirements on symmetry of the magnetic field occur at the point of injection, where the excitation current is lowest. At the start of each acceleration cycle a constant potential is applied to the electromagnet winding with a fairly steep wavefront. The presence of parasitic conductance and shunt capacitance in the system (Fig.1, equivalent circuit) gives rise to transient asymmetry. The article describes a potentiometric system of correction for these distortions. There are 7 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury GKAE (Scientific Research Institute for Electrophysical Apparatus GKAE)

Card 1/2

STOLOV, A.M.

S/089/62/012/006/003/019
B102/B104

26 1700

AUTHORS: Vladimirskiy, V. V., Komar, Ye. G., Mints, A. L., Gol'din, L. L., Monoszon, N. A., Rubchinskiy, S. M., Tarasov, Ye. K., Vasil'yev, A. A., Yelop'yanov, F. A., Bondarev, D. G., Kuryshev, V. S., Malyshev, I. F., Stolov, A. M., Strel'tsov, N. S., Yakovlev, B. M.

TITLE: The design of the 7-Bev proton synchrotron

PERIODICAL: Atomnaya energiya, v. 12, no. 6, 1962, 472-474

TEXT: The history of the first Soviet cyclic accelerator with rigid focusing is briefly described, and the most important data on its planning and operation are presented. Planning was started in 1953. The parameters of this proton accelerator, the energy of which exceeds the antinucleon production threshold, were so chosen that the dependence of the orbital circumference on the particle moments was completely compensated. This was achieved by employing 14 quadrupole magnets with orbits of negative curvature. Technical data: output current, 10^{10} protons/pulse; maximum field strength, 8475 oe; length of equilibrium orbit, 251.2 m; radius of

Card 1/2

S/089/62/[illegible]/012
B102/B104

The design of the 7-Bev ...

curvature of the trajectories in the bending magnets (C), 31 m, and in the compensating magnets (K), 60; number of magnetic sectors, 90C + 11K; gap length between the C-magnets, 304.6 mm; gap length around the K-magnets, 317.5 mm; index of the decrease in field strength, 460; internal height and width of the chamber, 80 and 110 mm, respectively; number of betatron oscillations per revolution, 12.75, and per periodic element, 0.21; number of magnets per periodic element, 6; total critical energy, 19.2 Bev; maximum deviation of the periodic orbit with 100% deviation of the momentum from the equilibrium momentum, 1.47 m; rate of energy increase per revolution, 1.5 kev; duration of one cycle, 1.55 sec; 10-12 cycles/min; particle revolution frequency at the beginning of the cycle, 0.11 Mc/sec, and at the end, 1.19 Mc/sec; frequency of synchrocyclotron oscillations, 3600 and 130 cps; weight of the electromagnet steel, 2500 tons; maximum power of the supply system, 25 Mw; Van de Graaff injector (particle energy, 5.0 Mev; field strength 70 oe); admissible deviations from field strength and field gradients, $\sim 10^{-3}$; deviations at the chamber edge due to nonlinearities, $\sim 10^{-2}$; admissible frequency deviation of the accelerating field at the beginning of the cycle, 10^{-3}, and at the end, $5 \cdot 10^{-5}$. There are 1 figure and 1 table.

SUBMITTED: March 12, 1962

Card 2/2

STOLOV, AM

95

S/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fiveyskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryazanov, theory of ionization losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

Card 1/6

S/089/62/013/006/019/027
B102/B186

Nauchnaya konferentsiya...

B. V. Pletnev, F. M. Spevakov, A. M. Stolov, supply of synchrotron electromagnets; G. L. Saksaganskiy, V. Ya. Moiseyev, flanged separable heat-resistant junctions of great diameter; B. G. Klimov, A. S. Vayradyan, V. F. Yevseyev, I. B. Mikhaylov, I. N. Afonskiy, B. N. Belov, Ye. I, Mamonov, B. I. Strelkov, Ye. V. Sedykh, B. A. Shchukin, optical principles in computer engineering technique; R. S. Nakhmanson, N. M. Royzin, M. E. Mostovlyanskiy, Yu. A. Volkov, electronics; Ye. L. Sulim, transmitter for electromagnetic flow-meter, V. M. Ovsyankin, V. M. Pluzhnikov, application of varicondes for transforming d.c. into a.c.

Card 4/A

MONOSZON, N.A.; STOLOV, A.M.; GASHEV, M.A.; SPEVAKOVA, F.M.; YAVNO, A.Kh.; KORNAKOV, Ye.V.; KULAKOV, F.M.; NADGORNYY, V.P.; GORSHKOVA, Ye.G.

Power supply system of the electromagnet of the 7 bev. proton synchrotron. Prib. i tekh. eksp. 7 no.4:27-33 Jl-Ag '62. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR. (Electromagnets) (Synchrotron)

MONOSZON, N.A.; STOLOV, A.M.; SPAVAKOVA, F.M.

Effect of the parasitic parameters of the electromagnet in a proton synchrotron on the asymmetry of a magnetic field and methods for its compensation. Prib. i tekh. eksp. 7 no.4: 168-171 Jl-Ag '62. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

(Electromagnets) (Synchrotron)

VLADIMIRSKIY, V.V.; KOMAR, Ye.G.; MINTS, A.L.; GOL'DIN, L.L.;
MONOSZON, N.A.; RUBCHINSKIY, S.M.; TARASOV, Ye.K.; VASIL'YEV, A.A.;
VODOP'YANOV, F.A.; K[illegible]KAREV, D.G.; KURYSHEV, V.S.; MALYSHEV, I.F.;
STOLOV, A.M.; STREL'TSOV, N.S.; YAKOVLEV, B.M.

The 7 bev. proton synchrotron. Prib. i tekh. eksp. 7 no.4:5-9
Jl-Ag '62. (MIRA 16:4)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR, Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR i Radiotekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Synchrotron)

BOBOVIKOV, R.S.; PLETENEV, B.V.; SPEVAKOVA, F.M.; STOLOV, A.M.

Principles of the construction of resonance systems of supply of synchrotron electromagnets. Elektrofiz. app. no.2:189-198 '64. (MIRA 18:3)

L 43080-65 EWT(m)/ EPA(w)-2/EWA(m)-2 Pab-10/Pt-7 IJP(c) JT/GS
S/0000/64/000/000/0197/0201

ACCESSION NR: AT5007918

AUTHOR: Vladimirskiy, V. V.; Gol'din, L. L.; Koshkarev, D. G.; Tarasov, Ye. K.; Yakovlev, B. M.; Gustov, G. K.; Komar, Ye. G.; Kulikov, V. V.; Malyshev, I. F.; Monoszon, N. A.; Popkovich, A. V.; Stolov, A. M.; Strel'tsov, N. S.; Titov, V. A.; Vodop'yanov, F. A.; Kuz'min, A. A.; Kuz'min, V. F.; Mints, A. L.; Rubchinskiy, S. M.; Uvarov, V. A.; Zhadanov, V. M.; Filaretov, G. G.; Shiryayev, F. Z.

TITLE: 60-70 Gev Proton Synchrotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 197-201

TOPIC TAGS: high energy accelerator, synchrotron

ABSTRACT: A 60-70 Gev proton synchrotron with strong focusing is being constructed not far from Serpukhov, as has been reported earlier (e.g. "Research Institute for Electro-Physical Equipment, Leningrad," in Proceedings of the International Conference on High Energy Accelerators and Instrumentation (CERN, 1959), p. 373). The present report describes parameter changes and improvements in precision structural characteristics of the accelerator, and the present state of construction in mid-1963. The parameters of the magnet are presented in a table. A small change in the original plans permitted an increase in the length of a part of the free

Card 1/4

sections, some of which are utilized for input and exit of beams. The super-period design is described. The lengthened sections were obtained as a consequence of shortening the focusing and defocusing blocks by 112 cm. The focusing properties of the magnetic channel were diminished consequently, but very little; and the limiting energy was lowered by 2-3 Gev. The construction of the magnet is described. Each of the magnetic blocks is divided lengthwise into 5 sub-blocks which are enveloped by the common winding. These sub-blocks consist of laminar two-millimeter silicon steel. These steel sheets were stamped out without subsequent mechanical working, and were subjected to sorting and intermixing in order to smooth out their magnetic characteristics. The sub-blocks are constricted by lateral welded plates without adhesion. Provision was made for windings on the poles in order to correct for pole nonlinearity and for variations in the drop reading. These windings make it possible to introduce artificial quadratic (square) nonlinearity that changes the dependence of the frequency of transverse oscillations during a pulse. In order to correct for straying of the residual field, provision has been made for windings on the yoke in series with the main winding. The sub-blocks must undergo calibration on a magnet stand in order to make correcting systems more precise and to determine the most convenient disposition of the sub-blocks along the ring. The winding of the electromagnet is made of aluminum busbars with hollow cores for cooling water. The length of the busbar is so selected that there would be no

2

welded joints inside the coils. The winding consists of 4 sections, two of which are disposed on the upper pole and two on the lower. The most important characteristics of the electromagnet and power supply system are described in a table. Also described are the vacuum chamber and accelerating field (obtained by 53 paired resonators with ferrite rings, which operate at the 30-th harmonic of revolution and give accelerating potential of 350 kilovolts). The ring tunnel and the general arrangement of the accelerator are shown in figures and described. The building for the injector and portions of the ring tunnel from the injector to the experimental room have been completed in the main and are ready for installation of equipment. This room, in the form of a single-aisle building without internal supports, permits one to work on beams brought into the inner and outer sides. A 90-meter arch covers this room, whose overall length is 150 meters. Provisions have been made for a second experimental room at the southwest part of the ring. Orig. has 4 figures, 2 tables.

ASSOCIATION: Institute teoreticheskoy i eksperimental'noy fiziki GKAE SSSR (Institute of Theoretical and Experimental Physics, GKAE SSSR). (2) Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury imeni D. V. Yefremova GKAE SSSR (Scientific Research Institute of Electrophysical Apparatus, GKAE SSSR).

L 43038-65

ACCESSION NR: AT5007918

(3) Radiotekhnicheskiy institute AN SSSR (Radio Engineering Institute, Academy of Sciences SSSR). (4) Gosudarstvennyy proyektnyy institut GKAE SSSR (State Planning Institute, GKAE SSSR).

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EE, NP

NO REF SOV: 002 OTHER: 001

Card 4/4

ACCESSION NR: AP4047415 S/0089/64/017/004/0287/0294

STOLOV, A.M.

AUTHORS: Gashev, M. A.; Gustov, G. K.; D'yachenko, K. K.; Komar, Ye. G.; Maly'shev, I. F.; Monoszon, N. A.; Popkovich, A. V.; Ratnikov, B. K.; Rozhdestvenskiy, B. V.; Rumyantsev, N. N.; Saksaganskiy, G. L.; Spevakova, F. M.; Stolov, A. M.; Strel'tsov, N. S.; Yavno, A. Kh.

TITLE: Main technical characteristics of the "Tokamak-3" experimental thermonuclear installation

SOURCE: Atomnaya energiya, v. 17, no. 4, 1964, 287-294

TOPIC TAGS: thermonuclear pinch, thermonuclear fusion, plasma research, plasma pinch/ Tokomak-3

ABSTRACT: The "Tokamak-3" is intended for the investigation of a toroidal quasi-stationary discharge in the strong longitudinal magnetic field. The toroidal discharge is produced in the vacuum cham-

Card 1/3

ACCESSION NR: AP4047415

ber by a vortical electric field, and acts as an equivalent secondary turn of a pulse transformer. The produced plasma pinch is stabilized with a longitudinal magnetic field of a toroidal solenoid, inside which the vacuum chamber is located. The magnetic core of the pulse transformer carries the primary vortical-field winding, the demagnetization winding, and the winding for induction heating. The setup is fed from special power systems. The electromagnetic system, the power supply, and the vacuum system are described in some detail. The longitudinal field intensity reaches 40 kG. The vortical field values are 250 and 50 V per turn with pulse durations 10 and 50 milliseconds, and with programming of the waveform such as to maintain a constant current in the plasma pinch. The power supply delivers a peak power of 77,000 kW, maximum 7000 A, no-load voltage 11 kV, and stored energy 180 million Joules. The vortical field is fed from four capacitor banks rated 1000 μF at 20 kV, 11,000 μF at 10 kV, 78,000 μF at 5 kV, and 30,000 μF at 5 kV. The capacitor-bank parameters can be varied over a wide range. The vacuum in the liner does

Card 2/3

L 13221-65
ACCESSION NR: AP4047415

0

not exceed 1--2 x 10^{-7} mm Hg during the interval between gas admission, with the pressure in the outside chamber being 1--2 x 10^{-6} mm Hg. Orig. art. has: 8 figures.

ASSOCIATION: None

SUBMITTED: 23Nov63 ENCL: 00

SUB CODE: NP, ME NR REF SOV: 000 OTHER: 000

Card 3/3

L 07191-67 EWT(1)

ACC NR: AT6031766 SOURCE CODE: UR/3092/66/000/004/0165/0168

AUTHOR: Arkhangel'skiy, F. K.; Stolov, A. M.

ORG: none

TITLE: Use of impact generators for producing pulsed magnetic fields with high energy capacity

SOURCE: Moscow. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury. Elektrofizicheskaya apparatura, no. 4, 1966, 165-168

TOPIC TAGS: pulsed magnetic field, strong magnetic field

ABSTRACT: An evaluation is made of the energy level delivered by a modern impact generator and a comparison is made of performance and economic data associated with this method and with the method of capacitive storage. The derived expressions for key parameters are applied to the evaluation of two specific impact generators: a Soviet mass produced three-phase impact generator with a cylindrical rotor as well as a special impact generator with eight poles developed by Siemens. The Soviet generator has a peak power of 2500 Mw with a model power of 125-150 Mw while the Siemens generator has a model power of 300 Mw. The analysis shows that in the machine version the value of the stored energy which can be achieved in practice is less than that achieved with capacitive storage. From the standpoint of useful life, the capacitive storage

P. 64
N

621.316.923 : 621.313.333 - 82 2120

Quantitative investigation of fuses for the mains supplying asynchronous motors. Sitkin, L. L. *Elektrichestvo*, 17 (No. 1) 18-21 (1946) *In Russian.* Thermo-plastic fuses of Cu, Pb, Ag and Zn for protection of asynchronous motors are discussed in detail with special consideration of the size and shape of the fuse body and the thermal conductivity of the fuse contacts. Motor starting current peaks are plotted against starting time, with fuse ratings as parameter. A. I.

621.316.925.452 : 621.318.55 see Abstr. 2344

METALLURGICAL LITERATURE CLASSIFICATION

[illegible]

322. **Influence of transient electromagnetic conditions on the dynamics of starting an induction motor.** Stolov, L. I. *Elektrichestvo* (No. 6) 34-6 (1946) *In Russian*.—Mathematical investigation of the torques developed in a cage-rotor induction motor under the transient conditions which follow direct switching. It is shown that during the establishment of the steady-state magnetic conditions in the machine, there appear two transient pulsating torques and a braking couple. The former influence the starting conditions over a relatively short range of speed from rest; the braking torque is seldom more than 0·1 of the max. torque due to the steady rotating field. Other minor torques due to transient leakage fluxes are shown to have a very insignificant effect. B. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

STOLOV, Docent L. I.

Mbr., Kazan' Aviation Inst., -c1948-c1950-. Cand. Technical Sci. "Action of Transition Electromagnetic Processes on the Starting Dynamics of a Short-Circuited Engine," Elektrichestvo, No. 6, 1948; "Starting Short-Circuited Asynchronous Motors With Reduced Voltage," Prom. Energet., No. 3, 1948; "Concerning Yu. L. Mukosoyev's Article 'An Outmoded Standard Retards the Development of the Country's Power Economy,'" Elektrichestvo, No. 6, 1949; "Projected Standard of Nominal Voltages for Stationary Electric Networks," ibid., No. 8, 1950.

STOLOV, L.I. [redacted]

Transient moments at direct-on starting of asynchronous motors. Trudy KAI 22:31-35 '49. (MLRA 10:6)

(Electric motors, Induction)

STOLOV, L. I., Docent

PA 167T34

USSR/Electricity - Standards, Voltage Power Networks — Aug 50

"Projected Standard of Nominal Voltages for Stationary Electric Networks," Docent L. I. Stolov, Cand Tech Sci, Kazan, M. A. Kogan, Engr, Karaganda Mine Planning Trust

"Elektrichestvo" No 8, pp 85-86

Continues discussions in "Elektrichestvo" No 1, 4, 5, 6, 7, 1950. Criticizes projected standards and suggests improvements.

FDD

167T34

STOLOV, L.I.

Effect of the relationship of time and dynamic moment on the starting power of d.c. engines. Trudy KAI 25:111-115 '51. (MIRA 10:7)

(Electric motors, Direct current)

1. [illegible], L. I., DOCENT

2. USSR (600)

4. Electric Engineering - Study and Teaching

7. Some problems of methodology in teaching a course on electric machinery. Elektrichestvo no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

STOLOV, L. I.

Electrical Engineering Abstracts
May 1954
Machines.

2
(1)

1888. The shape of the mechanical characteristic of small shunt motors. L. I. STOLOV. Elektrichestvo, 1953, No. 10, 43–4. In Russian.

Equations are established giving the relationship between the current and the speed and between the couple and the speed, for motors of < 1 kW output. The calculated curves differ very little from those obtained experimentally using a method described in the article.

A. KARLSSAD

TAREYEV, B.M., professor, doktor tekhnicheskikh nauk; GIKIS, A.F., dotsent, kandidat tekhnicheskikh nauk; MEZHLUMOV, A.A., dotsent, kandidat tekhnicheskikh nauk (Baku); STOLOV, L.I., dotsent, kandidat tekhnicheskikh nauk (Kazan'); YUMATOV, A.A., inzhener (Kronshtadt); RAKHIMOV, G.R., dotsent, kandidat tekhnicheskikh nauk; KONSTANTINOV, V.I., inzhener (Moscow); NEYMAN, L.R.; ZAYTSEV, I.A., dotsent, kandidat tekhnicheskikh nauk; LUR'YE, A.G., dotsent, kandidat tekhnicheskikh nauk.

Terminology of theoretical electrical engineering. Elektrichestvo no.2:74-82 F '54. (MLRA 7:2)

1. Vsesoyuznyy zaochnyy energeticheskiy institut (for Tareyev). 2. Rostovskiy institut inzhenerov zheleznodorozhnogo transporta (for Gikis). 3. Sredneaziatskiy politekhnicheskiy institut (for Rakhimov). 4. Chlen-korrespondent Akademii nauk SSSR (for Neyman). 5. Leningradskiy politekhnicheskiy institut im. Kalinina (for Neyman, Zaytsev, Lur'ye). (Electric engineering--Terminology)

STOLOV, L.I.

Selecting electric drives with high electromechanical time constants. Trudy KAI 28:135-140 '54. (MIRA 10:6)

(Electric driving)

STOLOV, L.I., kand.tekhn.nauk, dots.; KALINKIN, G.I., kand.tekhn.nauk.

Testing micromachines by means of an auxiliary motor. Electrichestvo no.1:68-70 Ja '58. (MIRA 11:2)

1.Kazanskiy aviatsionnyy institut.
(Electric motors--Testing)

SOV/144-58-9-6/18

AUTHOR: Stolov, L.I., Cand. Tech.Sc., Docent, Head of the Chair for Electrical Engineering and Electrical Machinery

TITLE: On the Shape of the Mechanical Characteristics of Very Small Asynchronous Motors (O forme mekhanicheskoy kharakteristiki asinkhronnogo dvigatelya maloy moshchnosti)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1958, Nr 9, pp 38-44 (USSR)

ABSTRACT: Asynchronous motors with ratings up to a few watts which have symmetrical windings and are fed from a symmetrical system of voltages are extensively used in instruments and control circuits. Usually, in investigating the mechanical characteristics of asynchronous motors either the "modulus of the complex coefficient" A (representing the ratio of the input voltage of the equivalent circuit to the voltage of the transverse limb of this circuit in the case of ideal no-load running) is taken into consideration or it is assumed that this coefficient equals the real value of unity. However, in very small asynchronous motors the relative values of the pure resistances and, to a large extent, the relative values of the inductances of the

SOV/144-58-9-6/18

On the Shape of the Mechanical Characteristics of very Small Asynchronous Motors

stator circuit are large compared to the corresponding values of larger asynchronous motors. Therefore, the (negative) argument of the coefficient A reaches in such small motors 30 to 40°, the modulus 2.0 to 2.5 and the current formulae used for calculating the mechanical characteristics of larger asynchronous motors are inapplicable for very small motors. By using the equations of a passive 4-pole

$$\dot{U}_1 = A\dot{U}_2 + B\dot{I}_2 \qquad (1)$$
$$\dot{I}_1 = C\dot{U}_2 + D\dot{I}_2,$$

it is possible to obtain more general and simple formulae which are suitable also for investigating the performance of very small asynchronous motors. The T-shaped equivalent circuit for the given case is shown in Fig 1. On the basis of the here quoted equations of the passive 4-pole, formulae are derived for calculating the characteristics of very small motors. A comparison

Card 2/4

of the electromagnetic moment vs. slip curve, calculated according to the here derived equation:

$$M = \frac{0.975 m_1 U_1^2 r_2 s}{n_1 \left| A r_2 + B s \right|^2} \qquad (4)$$

(curve 1) with that determined experimentally (curve 3) and that calculated according to the currently used formula (curve 2) is made in Fig 3, p 42. In the above quoted formula -

M is the electromagnetic moment, kgm;

m_1 - number of phases of the stator;

n_1 - rotation speed of the magnetic field;

r_2 - rotor resistance;

s - slip;

U_1 - input voltage;

 A and B are complex coefficients.

SOV/144-58-9-6/18

On the Shape of the Mechanical Characteristics of very Small Asynchronous Motors

A formula is also derived for the critical slip, Eq (5), p 40. The here described method of investigation can also be extended to small asynchronous motors with variable parameters; this will be the subject of a separate paper.
There are 3 figures and 1 Soviet reference.

ASSOCIATION: Kafedra elektrotekhniki i elektricheskikh mashin Kazanskogo aviatsionnogo instituta (Chair for Electrical Engineering and Electrical Machinery, Kazan' Aviation Institute)

SUBMITTED: July 29, 1958

Card 4/4

8(5)

AUTHOR: Stolov, L. I., Docent, Candidate of Technical Sciences SOV/105-59-1-15/29

TITLE: Current-Slip-Dependence of an Induction Motor of Small Power (Zavisimost' toka asinkhronnogo dvigatelya maloy moshchnosti ot skol'zheniya)

PERIODICAL: Elektrichestvo, 1959, Nr 1, pp 61-63 (USSR)

ABSTRACT: This investigation concerns the dependence of the stator current I_1 on the slip s for induction motors with a power of under 1 watt up to a power of a few watts. The motors are fed by a symmetrical voltage system. The static operation method is investigated. The coilings of the stator and rotor of micromotors investigated here cannot meet the conditions of similitude but they are symmetrical. The rotor may be short-circuited or hollow. The equivalent circuit diagram of the micromotor is a four-pole consisting of effective and inductive resistances and feeding the effective resistance. In these micromotors, the relative effective resistances of the stator circuit and those of the rotor are normally great as compared with the corresponding relative resistances of

Card 1/2

normal induction machines. It is shown that in the induction micromotor examined here the modulus of the stator current I_1 decreases in a wide range of the slip s according to the formula (2) derived here, at an increase of the slip above zero. The parameters of the four-pole are assumed to be constant. If relation (5) is maintained, the power flow direction through the machine remains the same for a "generator" braking at any negative value of s as for the operation as a motor. These circumstances should be considered in the investigation of heat processes in the induction micromotor. The diagram with the curves marking the law of change of the stator-current modulus by the slip is given as an example. A second diagram shows the calculated and the experimental curve $I_1 I_0 = f(s)$ for a short-circuited induction three-phase micromotor of an automatic device. I_0 is the current in ideal idling at s = 0. Both curves diverge only slightly. There are 3 figures.

SUBMITTED: July 26, 1958

STOLOV, I. I.

33124

O Perekhodnykh Momentakh Pri Neposredstvennom Puske Asinkhronivogo Dvigatelya. Trudy Kazansk. Aviats. In-ta, XXll, 1949, c. 31-35

SO: Letopis' Zhurnal'nydh Statey, Vol. 45, Moskva, 1949

STOLOV, Lev Israilovich, dots., kand.tekhn.nauk

Shape of mechanical characteristics of small induction motors. Izv. vys.ucheb.zav.; elektromekh. 1 no.9:38-44 '58. (MIRA 12:1)

1. Zaveduyushchiy kafedroy elektrotekhniki i elektricheskikh mashin Kazanskogo aviatsionnogo instituta.
(Electric motors, Induction)

SOV/144-59-1-6/21

AUTHOR: Stolov, L.I., Cand.Tech.Sci., Docent, in charge of the Chair

TITLE: The Mechanical Characteristics of a Two-phase Induction Motor with Asymmetrical Stator Circuit

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 1, pp 35-41 (USSR)

ABSTRACT: The stator circuit of a small two-phase induction motor with squirrel cage or hollow rotor may be asymmetrical either because the actual stator winding is asymmetrical or because a capacitor is connected in one phase of the stator winding. The present article shows a simplified way to construct the mechanical characteristics of a motor with an asymmetrical stator. The method is to treat the machine as a symmetrical motor supplied by a system of voltages such that the currents in the two phases are the same as in the original motor. The equivalent circuits of the two phases of the asymmetrical induction motor are given in Fig 1. The actual motor with asymmetrical stator winding is then assumed to be replaced by a symmetrical motor with the same impedances in the equivalent circuit of each phase but with supply voltages that fulfil the

Card 1/3

SOV/144-59-1-6/21

The Mechanical Characteristics of a Two-phase Induction Motor with Asymmetrical Stator Circuit

conditions of Eq (2). Equations are then derived for the phase voltages and the asymmetry factors. A graphical method of determining the asymmetry factors for the equivalent circuits of the two phases is explained with reference to Fig 2. Having found from expression (3a) the modulae of the positive and negative phase-sequence supply voltages, and substituted them in the expression for the electro magnetic torque of the symmetrical motor, the resultant torque is found from expression (5), together with expression (6a). A typical example is then given of the construction of the mechanical characteristics of a small 400 c/s hollow-rotor capacitor motor, and the torque/slip curves obtained are plotted in Fig 3. The calculated value of the starting torque was 2.9 g.cm and the experimental value was 2.5 g.cm. An appendix gives the derivation of Eqs (3), (4) and (4a).
There are 3 figures and 1 Soviet reference.

Card 2/3

SOV/144-59-1-6/21

The Mechanical Characteristics of a Two-phase Induction Motor with Asymmetrical Stator Circuit

ASSOCIATION: Kafedra elektrotekhniki i elektricheskikh mashin, Kazanskiy aviatsionnyy institut (Chair of Electro-technology and Electrical Machines, Kazan' Aviation Institute)

Card 3/3

SUBMITTED: December 26, 1958

8(2), 9(6)

AUTHOR: Anisimov, V. I., Engineer SOV/119-59-3-13/15

TITLE: The Inter-university Scientific Conference on Electrical Measuring Instruments and on the Technical Means of Automation (Mezhvuzovskaya nauchnaya konferentsiya po elektroizmeritel'nym priboram i tekhnicheskim sredstvam avtomatiki)

PERIODICAL: Priborostroyeniye, 1959, Nr 3, pp 30-31 (USSR)

ABSTRACT: This Conference was held at the Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin)) in November 1958. It was attended by more than 500 representatives of universities, scientific research institutes, of the OKB, the SKB (Special Design Office), of industries and other organizations. More than 50 lectures were delivered in the meetings of this Conference. In opening the conference N. P. Bogoroditskiy underlined the outstanding importance of automation and of measuring technique for the development of national economy. S. S. Shumilovskiy in his lecture reported on "The Trends in the Development of Methods of Radioactive Control of Production Data" and outlined the extensive

Card 1/3

possibilities of using radioactive methods in such control. Ye. G. Shramkov and I. A. Spektor reported on a new method of measuring heavy direct currents with the help of the nuclear magnetic resonance. M. A. Rozenblat investigated problems of the application of magnetic amplifiers in automation and in measuring technique. A. V. Fateyev reported on the present-day state on the prospects of automatic control technique. Ya. Z. Tsypkin investigated some peculiar features of and the prospects offered by automatic pulse systems. The lecture by B. S. Boldyrev dealt with problems of stability of discrete automatic systems. V. B. Ushakov discussed the main trends in the development of mathematical analog computers and of computers designed for industrial use. The report by V. A. Ryabyakin deals with an electronic analog correlator for the calculation of correlation functions in the investigation of winds in the ionosphere. E. L. Turgenson reported on the most important methods, which guarantee both an active and passive freedom from disturbances in

Card 2/3

discrete selective systems. Ye. V. Zavadil'tsev discussed problems of averaging, differentiation, and balancing of time-dependent functions which can be represented by electric signals. V. P. Shuridin investigated new computing devices with polarized relays. A. V. Frenke and Ye. M. Dushin reported on instrument transformers for automatic instruments with automatic recording. V. B. Ushakov and S. S. Kopay-Gora reported on a computer for the automatic centralized control of production specifications. K. B. Petinov discussed fundamental problems of the theory of automatic measuring instruments with an inverse conversion for the measurement of non-electric quantities. Ye. I. Tsygankov dealt with problems of the construction of automatic d. c. potentiometers with high accuracy. B. I. Malov discussed a high-precision automatic d. c. bridge for digital computations. The participants in the Congress listed below discussed the following subjects (which, however, are not given by the exact wording of the titles): V. A. Kuznetsov The planning of measuring elements for

Card 3/3

The Inter-university Scientific Conference on Electrical Measuring Instruments and on the Technical Means of Automation SOV/119-59-3-13/15

accurate automatic quotient-type meters in digital computations. E. Z. Kharchenko: Methods of determining the dynamic errors of a magnetic oscilloscope by simulation. P. P. Ornatskiy: Problems in measuring electric quantities at extremely low frequencies by electrical indicating instruments of various systems. L. P. Kulikovskiy: Novel types of a. c. compensators. A. S. Kosenkrants: Automatic bridges and a. c. compensators suited for the control of the parameters of condensers in series production. [illegible]: Some characteristics of midget induction motors which can be used in measuring technique and automation. D. A. Berdnikov: Ultrasonic pressure- and liquid level gages. Yu. A. Karpenko: The circuitry of a phase-sensitive commutation indicator for a. c. semi-equilibrium bridges. E. P. Sovik: The application of instruments with magnetic bridges, which permit a considerable simplification of the design of the apparatus and the circuitry used in the measurement of non-electric quantities. V. A. Popenko: Method of increasing the sensitivity of oxygen gas analyzers. V. V. Kolitskiy:

Card 4/5

Design of apparatus for measuring vibration quantities. V. V. Pasynkov: Main types of non-linear semiconductor resistors and possibilities of their application in circuitry in automation and measuring technique. G. S. Bogoyavlenskiy: Development of measuring amplifiers with semiconductor triodes. Ye. V. Sevost'yanov, B. A. Bairov, Yu. Ye. Afanas'yev, Yu. P. Egoryanov: Precision semiconductor frequency meter operating according to the pulse-counting principle. P. I. Sinitsin and A. Dzhaldashaiev: Methods of measuring the magnetic field strength by means of bismuth resistors and transducers operating on the Hall effect principle. A resolution was adopted by the closing plenary meeting of the Conference, which indicates ways of improving and coordinating scientific research work in the field of automation, electric measuring- and computing technique.

Card 5/5

STOLOV, [redacted], kand.tekhn.nauk

Relationship between the current and slip in small induction motors. Elektrichestvo no.1:61-63 Ja '59. (MIRA 12:5)
(Electric motors, Induction)

APPROVED FOR RELEASE: 08/26/2000 CIA-RDP86-00513R001653330011-8"

9(6)

S/146/59/002/06/007/016
D002/D006

AUTHOR: Stolov, L.I., Candidate of Technical Sciences, Docent

TITLE: Some Characteristics of an Asynchronous Micromotor and the Determination of the Parameters of its Equivalent Circuit

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborotroyeniye, 1959, Nr 6, pp 49-53 (USSR)

ABSTRACT: This is a general discussion of the characteristics of a micromotor and the problem of determining the parameters of its equivalent circuit. Equations for velocity and mechanical characteristics of micromotors with a non-symmetrical stator circuit are derived, and it is concluded that the method described can also be used for motors with asymmetric circuits. The article was recommended by the Orgkomitet mezhvuzovskoy nauchno-tekhnicheskoy konferentsii

Card 1/2

S/146/59/002/06/007/016
D002/D006

Some Characteristics of an Asynchronous Micromotor and the Determination of the Parameters of its Equivalent Circuit

po elektroizmeritel'nym priboram i tekhnicheskim sredstvam avtomatiki (Orgkomitet of the Intervuz Scientific-Technical Conference on Electro-Measuring Devices and Technical Automation Means). There are 2 graphs and 4 Soviet references.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' Aviation Institute)

SUBMITTED: February 13, 1959

Card 2/2

SOV/105-59-10-9/25

AUTHOR: Sokolov, L. I., Candidate of Technical Sciences, Docent (Kazan')

TITLE: Mechanical Characteristics of a Three-phase Induction Motor With Asymmetrical Stator Circuit

PERIODICAL: Elektrichestvo, 1959, Nr 10, pp 47-50 (USSR)

ABSTRACT: The author investigates here the mechanical characteristics of low-power three-phase induction motors with short-circuited rotor and asymmetrical stator circuit. The motors are fed by a symmetrical system of three-phase mains voltages (lineynoye napryazheniye). The stator windings of the investigated motors are symmetrical. The asymmetry of the stator circuit is, however, a result of an additional resistance in the b-phase or two additional resistances in the a- and c-phase. These two cases are investigated here, and the formulas for calculating the resulting torque are deduced. This is exemplified in figure 3 by the mechanical characteristics M = f(S) for a short-circuited three-phase induction motor of 6.5 w as calculated by the above method or according to the formulas deduced here. s - slip. Herefrom it follows that the curves obtained by calculation or experiment are nearly coincident. There are 3 figures.

SUBMITTED: June 5, 1959

Card 1/1

AUTHOR: Stolov, L.I., Docent SOV/144-59-10-19/20

TITLE: Discussion on 'The Calculation of the Mechanical Characteristics of Miniature Induction Motors' (Elektromekhanika, 1959, Nr 7)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 10, pp 157 - 159 (USSR)

ABSTRACT: This is a contribution to the discussion on an article by Nesgovorova and Kaasik, published in Elektromekhanika, 1959, Nr 7. In their article, these authors had made some critical comments about a previous article by Stolov, who maintains his previous position and points out certain misconceptions of Nesgovorova and Kaasik.
There are 1 figure and 1 Soviet reference.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' Aviation Institute)

SUBMITTED: September 20, 1959

Card 1/1

8 (5) S/105/60/000/02/012/024
B007/B008

AUTHOR: Stolov, L. I., Docent, Candidate of Technical Sciences (Kazan')

TITLE: Induction Micromotor With Hollow Rotor at Anomalous Frequency

PERIODICAL: Elektrichestvo, 1960, Nr 2, pp 61 - 63 (USSR)

ABSTRACT: The characteristics for the selection of the feed voltage U according to the frequency f at invariable electromagnetic starting moment M for induction micromotors with a hollow non-magnetic rotor are investigated here. These motors show relatively great effective resistances in stator and rotor and very small inductive resistances of the rotor deviation. It is assumed first that the stator circuits of the motor are symmetrical and the motor is fed by a symmetrical voltage system. The stator circuits of a two-phase induction micromotor with a hollow nonmagnetic rotor are however usually asymmetrical. In the case under review the character of the dependence of the control voltage and mains voltage on the frequency is influenced by the asymmetry of the stator winding of the motor, the asymmetry of the system of feed voltages and the necessity of having to alter the condenser capacitance according to the

Card 1/2

Induction Micromotor With Hollow Rotor at Anomalous Frequency

S/105/60/000/02/012/024
B007/B008

frequency. It is shown here that contrary to standard induction motors which operate at variable frequency, the function U(f) does not proceed monotonously in the motors investigated here; the voltage U increases at a strong reduction of f (Fig 3). There are 3 figures and 1 Soviet reference.

SUBMITTED: September 8, 1959

Card 2/2

S/144/60/000/03/010/017
E194/E455

AUTHOR: Stolov, L.I., Candidate of Technical Sciences, Docent, Head of the Chair for Electrical Engineering and Electrical Machinery

TITLE: The Dynamics of Transient Processes in a Low-Power Electric Drive

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1960, Nr 3, pp 80-84 (USSR)

ABSTRACT: The dynamics of transient processes in electric drives with variable moment of inertia has been investigated previously though without allowing for friction in the reduction gear, which is important in low-power drives. In the present article the referred moment of inertia and the referred static torque are assumed variable and the drive is assumed to contain a reduction gear of appreciable friction. The mass of the driven mechanism is assumed to be concentrated and the friction torque in the reduction gear between the motor and driven mechanism is assumed to be a linear function of the output torque of the reduction gear. Systems of this type may be divided into three classes, depending on

Card 1/3

APPROVED FOR RELEASE: 08/26/2000 CIA-RDP86-00513R001653330011-8"

S/144/60/000/03/010/017
E194/E455

The Dynamics of Transient Processes in a Low-Power Electric Drive

the nature of the load namely: systems in which the driven mechanism is of constant moment of inertia but the transmission ratio is variable; systems in which the driven mechanism is of variable radius of inertia; and systems in which the mass on the shaft of the driven mechanisms is variable. These three cases are considered in turn and formulae are derived for the motor torque, allowing for friction in the reduction gear and the dynamic torque due to the moment of inertia of the motor rotor. The following equations are derived: for the first case, Eq (4), for the second case, Eq (7); and for the third case, Eq (9). The dynamic equations may be integrated by the usual method of finite increments; the procedure is briefly explained. A numerical example of calculations on a drive of the type described is then given. An appendix gives the derivation of two formulae used in the main article. There are 5 Soviet references.

Card 2/3

S/144/60/000/03/010/017
E194/E455

The Dynamics of Transient Processes in a Low-Power Electric Drive

ASSOCIATION: Kazanskiy aviatsionnyy institut
(Kazan Aviation Institute)

SUBMITTED: January 3, 1959

Card 3/3

section, that is, for the general case where these characteristics are independent of the type of motor excitation. The relations shown in Figs. 1 and 2 are built up on the basis of these formulas. The speed- and mechanical characteristics for micromotors with various types of excitation are then built up with the aid of these formulas. It is necessary to take the nominal speed n_n of the motor instead of the speed n_{o1}, as well as I_a and M_a (a = start) instead of I_{ai} and M_{ai}. The setup of the characteristics of a micromotor with external excitation is shown next (Fig. 3). The characteristics of the micromotors with permanent magnets are also built up in a similar way. The setup of characteristics of a micromotor with series excitation is dealt with finally. The diagram with the mechanical and speed characteristic of a two-pole micromotor with external excitation is given as an example in Fig. 4. There are 4 figures and 3 Soviet references.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' Aviation Institute)

SUBMITTED: November 9, 1959

angles of ψ_1, which is the angle of phase displacement between the stator current I and the voltage U_1 on load (usually at short circuit), and at an angle of ψ_0, which is the phase displacement angle between the stator current I and the voltage U_{10} with synchronous no-load conditions. Perpendiculars are dropped to the ordinate axis from the ends of the vectors U_1/I and U_{10}/I. To the end of the perpendicular dropped from the end of the vector U_1/I is added a section numerically equal to the stator ohmic resistance r_1. A straight line is drawn from the origin at an angle

$$\theta = \arctan \frac{n}{m}$$

to the ordinate axis to determine the leakage reactance of the stator winding x_1 from the vector diagram. Then the reactance of the quadrature branch of the equivalent circuit

$$x_{12} = \frac{E1}{I \cos \theta}$$

and the ohmic resistance of the rotor $r_2 = \dfrac{x_{12} \cdot S}{\tan \theta}$ are found.

where: E is the voltage on the quadrature branch of the equivalent circuit; S is the slip; n and m are segments of straight lines determined from the vector diagram. An example is given of a calculation of the parameters of a two-phase 400-cycle capacitor motor with hollow non-magnetic rotor. The difference between calculated values and test results does not exceed 16%. 2 literature references

[Abstractor's note: Complete translation.]

S/105/61/000/012/006/006
E194/E455

AUTHOR: Stolov, L.I., Candidate of Technical Sciences, Docent

TITLE: The influence of asymmetry of stator phase resistance of a miniature induction motor on its characteristics

PERIODICAL: Elektrichestvo, no.12, 1961, 76-80

TEXT: Two- and three-phase miniature motors often operate under asymmetrical conditions, and a motor with asymmetrical phase resistance can be represented by a symmetrical motor with asymmetrical supply; however, a motor with asymmetry of stator phase location cannot be treated in this way if the stator currents are left unchanged. A three-phase star-connected miniature motor is first considered in which one phase contains additional resistance and the following expressions are derived for the phase

$$\dot{I}_a = (1 + N_I)\dot{I}_1;$$
$$\dot{I}_b = a(a + N_I)\dot{I}_1; \qquad (4)$$
$$\dot{I}_c = a(1 + aN_I)\dot{I}_1;$$

Card 1/4

$$\dot{U}_a = (1 + N_U)\dot{U}_1;$$
$$\dot{U}_b = a(a + N_U)\dot{U}_1;$$
$$\dot{U}_c = a(1 + aN_U)\dot{U}_1.$$

where $a = e^{j\frac{2\pi}{3}}$, $\dot{I}_1 - \dot{U}_1$ - positive phase sequence current and phase voltage

$\dot{I}_2$ $\dot{U}_2$ - corresponding negative phase sequence values;

$N_1 = \dot{I}_2/\dot{I}_1$ - degree of current asymmetry;

N_U = the corresponding voltage asymmetry on the positive and negative phase sequence impedances.

The method is easily extended to three-phase motors with additional resistance in two phases and to two-phase motors. The influence of asymmetry on starting torque is then considered and the following expressions are obtained:

$$\Delta \mu_1 = 1 - \mu_1 = 1 - q_1 = \frac{3(k^2 - 1)}{(2k + 1)^2} \qquad (10)$$

S/105/61/000/012/006/006
E194/E455

The influence of asymmetry ...

$$\mu_2 = q_2 = \left(\frac{k - 1}{2k + 1}\right)^2$$

where μ_1 - the positive phase sequence torque, μ_2 - the negative phase sequence torque, k - an asymmetry factor.
On the basis of the above equations, characteristic curves may be drawn and from examination of them the following conclusions are drawn: the reduction in the magnitude of the positive phase sequence torque that results from asymmetry has a much greater effect on the resultant starting torque than has the setting up of a negative phase sequence torque; and even with a considerable asymmetry factor, the asymmetry of currents and voltages is not great. It is also concluded that if an inductance is connected in one stator phase of a miniature motor, the speed in the working range of slip is lower and the mechanical characteristics are better than when the inductance is distributed uniformly between the three phases. It is accordingly recommended to use a saturating choke in one phase only of the stator circuit of small induction motors for speed control. There are 6 figures and
Card 3/4

The influence of asymmetry ... S/105/61/000/012/006/006
E194/E455

1 Soviet-bloc reference.

ASSOCIATION Kazanskiy aviatsionnyy institut
(Kazan' Aviation Institute)

SUBMITTED July 7, 1961

✓

Card 4/4

STOLOV, L.I., kand.tekhn.nauk, dotsent (Kazan')

Problem concerning the determination of the equivalent parameters of a small asynchronous motor. Elektrichestvo no.5:87-89 My '62. (MIRA 15:5)

(Electric motors, Induction)
(Equivalent circuits)

STOLOV, L.I., kand.tekhn.nauk, dotsent (Kazan')

Calculation of transient processes of a small asynchronous motor. Elektrichestvo no.8:76-81 Ag '62. (MIRA 15:7)
(Electric motors, Induction)

KUPALYAN, Stepan Davidovich; LOMONOSOV, V.Yu., prof., retsenzent; STOLOV, L.I., dots., retsenzent; ATABEKOV, G.I., red.; BYCHKOV, D.V., dots., red.; FRIDKIN, L.M., tekhn. red.

[Theoretical principles of electrical engineering in three parts] Teoreticheskie osnovy elektrotekhniki [v trekh chastiakh]. Moskva, Gosenergoizdat. Pt.3. [Electromagnetic field] Elektromagnitnoe pole. 1963. 110 p. (MIRA 16:12)

(Electric engineering) (Electromagnetic fields)

STOLOV, L.I., kand.tekhn.nauk, dotsent

Thermal design of electrical circuits with variable resistance. Izv. vys. ucheb. zav.; energ. 6 no.4:22-28 Ap '63. (MIRA 16:5)

1. Kazanskiy aviatsionnyy institut. Predstavlena kafedroy elektrotekhniki i elektricheskikh mashin.
(Electric motors) (Electric networks)

L 15129-65 EWT(1)/EWT(m) JD

ACCESSION NR: AT4047558 S/2529/63/000/075/0003/0014

AUTHOR: Stolov, I. I. (Docent)

TITLE: The dynamic mechanical characteristics of a low-power asynchronous motor

SOURCE: Kazan. Aviatsionny*y institut. Trudy*, no. 75, 1963. Aviatsionny*ye pribory* i avtomaty* (Aeronautical instruments and automatic equipment), 3-14

TOPIC TAGS: asynchronous motor, low power motor, Kirchhoff law, Helmholtz Thevenin theorem, braking moment

ABSTRACT: The author notes that in the investigation of the electromechanical transient modes of an asynchronous machine, three differential equations must be jointly considered. Two of these represent Kirchhoff's law for transient processes in the stator and rotor circuits, while the third is the equation for the dynamics of the drive. It is indicated that an equation system of this type, with variable angular velocity in the rotation of the rotor ω, can be solved by the method of consecutive intervals (with the continuous changes replaced by step-wise changes and assuming that in each time interval ω= const. and the initial conditions are non-zero), but that this technique entails cumbersome computations. Another approach is presented in this article. Kirchhoff's law for the stator circuit is represented in the Laplace form. The rotor circuit is replaced by an immobile circuit,

Card 1/3

L 15129-65
ACCESSION NR: AT4047558

moving from the natural coordinate axes of the rotor to the stator axes. Stator and rotor windings, as well as the feed voltage system, are considered balanced, and no allowance is made for upper harmonics. The author notes that in low-power motors the relative values of the active resistances of the stator circuit, and occasionally of the rotor circuit, are extremely large. In comparison, the corresponding scattering inductances are small and the rapidly attenuating free current components disappear in the course of negligibly small time intervals. For this reason, in his construction of the dynamic mechanical characteristics of the low-power motor, the author investigates the character of the fading of the free currents and flows by means of a transient mode displacement arrangement, with the scattering inductances disregarded. The Helmholtz-Thevenin theorem is used. The displacement theorem employed was borrowed from the work of Ye. Ya. Kazovskiy (Nekotory*ye voprosy* perekhodny*kh protsessov v mashinakh peremennogo toka. GEI, 1953). The author develops the static, dynamic and mechanical characteristics of a low-power asynchronous engine, as well as the initial braking moment as a function of the rotational velocity of the rotor, and presents these parameters in graph form. An example is given in the article and a technique is briefly outlined whereby the resultant characteristics can be further refined. Orig. art. has: 6 figures and 16 formulae.

Card 2/3

L 15129-65
ACCESSION NR: AT4047558

ASSOCIATION: Kazanskiy aviatsionny*y institut (Kazan Aviation Institute)

SUBMITTED: 01Oct61 ENCL: 00 SUB CODE: PR, AC

NO REF SOV: 005 OTHER: 000

Card 3/3

L 20781-65 EWT(d)/EWT(l) Po-4/Pq-4/Pg-4/Pk-4/Pl-4 IJP(c) BC
ACCESSION NR: AP5003792 S/0144/64/000/009/1082/1087

AUTHOR: Stolov, L. I.

TITLE: Calculation of the characteristics of a two-phase asynchronous micromotor with asymmetric distribution of the phases of the stator winding

SOURCE: IVUZ. Elektromekhanika, no. 9, 1964, 1082-1087

TOPIC TAGS: electric motor, miniature electric equipment, electric rotating equipment part

Abstract: In general, the discussion of the motion of a two-phase asynchronous micromotor with an asymmetric stator circuit may be carried out by resolving the pulsating mmf of each phase into rotating mmf's. Often, the above mentioned asymmetry of the stator circuit causes a spacially asymmetric distribution of the phases of the stator winding. The author shows that the spatial asymmetry of the phases may be reduced to an asymmetry of the resistances of the stator circuit phases and presents an appropriate method for the calculation of the micromotor characteristics using the conventional asymmetry coefficients of the equivalent circuit resistances.
Orig. art. has: 2 figures, 7 formulas, 1 graph.

ASSOCIATION: none

SUBMITTED: 01Feb64 ENCL: 00 SUB CODE: EE

NO REF SOV: 003 OTHER: 000 JPRS

Card 1/1

ATABEKOV, Grigoriy Iosifovich; LOMONOSOV, V.Yu., prof., retsenzent; STOLOV, L.I., dots., retsenzent; ANTIK, I.V., red.

[Theoretical principles of electrical engineering in three parts] Teoreticheskie osnovy elektrotekhniki v trekh chastiakh. Moskva, Izd-vo "Energiia." Pt.1. [Linear electrical networks] Lineinye elektricheskie tsepi. 2. izd., perer. i dop. 1964. 310 p. (MIRA 17:6)

STOLOV, L.I., kand. tekhn. nauk, dotsent

Pulsations in flux linkage, speed of its rotation, and torque in asynchronous micromotors. Elektrichestvo no.11: 30-32 N '65. (MIRA 18:11)

1. Kazanskiy aviatsionnyy institut.

ANDREYEV, V.Ye., inzh.; MITROFANOV, B.M., inzh.; STOLOV, M.A., inzh.; RYKOV, N.M., inzh.; KHZMALYAN, D.M., kand. tekhn. nauk

Burning of natural gas in thin jets in boilers with impact mills. Teploenergetika 10 no.11:28-32 N '63. (MIRA 17:1)

1. Upravleniye energeticheskoy promyshlennosti Soveta narodnogo khozyaystva BSSR i Moskovskiy energeticheskiy institut.

STOLOV, M.A., inzh.; LYAKHOVICH, M.G., inzh.; [illegible], D.M., kand. tekhn. nauk

Increase in the stability and efficiency in burning milled peat. Elek. sta. 34 no.10:20-23 O '63. (MIRA 16:12)

ANDREYEV, V.Ye., inzh.; MITROFANOV, B.M., inzh.; RYKOV, N.M., inzh.; STOLOV, M.A., inzh.; KHZMALYAN, D.M., kand. tekhn. nauk

Joint burning of milled peat and natural gas in thin jets in boilers with hammer mills. Elek. sta. 35 no.9:17-22 S '64.

(MIRA 18:1)

STOLOVA, O.

HOUSTEK, J., prof. Dr; HLUSKOVA, Zdenka, Dr; STOLOVA, O., Dr; Wellnerova, M.

Pneumonia in the Prague region during 1952 and during the first half of 1953. Pediat. listy, Praha 9 no.4:202-204 June-Aug 54.
(PNEUMONIA, in infant and child,
in Czech.)

STOLOVA, O., MUDr., krajska detska lekarka KNV - KUNZ Praha; VEKKERIVA, M.
krajska detska sestra KNV - KUNZ Praha

Causes of infant mortality in the Praha region during 1952 and 1953.
Pediat. listy, Praha 9 no.6:349-352 Dec 54.
(INFANT
mortal. statist. & causes in Czech.)
(VITAL STATISTICS
inf. mortal. in Czech.)

STOLOVA, Olga, MUDr, predn. V. odb. minist. zdravotn.

Aims of Czechoslovak pediatrics in 1955. Cesk.pediat. 10 no.1: 1-3 Feb 55.

(PEDIATRICS
in Czech., aims)

KUBAT, Doc., Dr.; STOLOVA, Dr.

Ten years of Czechoslovak pediatrics. Cesk. pediat. 10 no.5: 328-331 June 55.

(PEDIATRICS, history in Czech.)

STOLOVA, Olga, MUDr.

Results of child welfare activities in 1955 and tasks in 1956. Cesk. pediat. 11 no.2-3:82-89 Mar 56.

1. Vedouci odboru ZD ministerstva zdravotnictvi.
(CHILD WELFARE
in Czech.)

HOUSTEK, J., prof. dr.; BENESOVA, D., dr.; STOLOVA, O., dr.; VELEMEROVA, M.

Child mortality at the age of one to three in the Prague district in 1953. Cesk.pediat. 11 no.2-3:106-109 Mar 56.
(VITAL STATISTICS
child mortal in Czech., Prague district)

STOLOVA, O.; KUBAT, K., Doc.

Analysis of current status of child care in Czechoslovakia and its main tasks in 1957. Cesk. pediat. 12 no.1:1-12 Jan 57.

1. Prednosta odboru zena a dite. (for Stolova). Hlavni odbornik pro peci o dite. (for Kubat). Ministerstvo zdravotnictvi, Praha.
(CHILD WELFARE
in Czech. (Cz))

STOLOVA, O., Dr.; MARTINAKOVA, A.

Analysis of school health service in 1955-1956 and its tasks in 1957. Cesk. pediat. 12 no.1:75-79 Jan 57.

1. Ministerstvo zdravotnictvi, odbor pece o zemu a dite, Praha.
(SCHOOLS
med. serv. in Czech. (Cz))

STOLOVA, Olga; KUBAT, Kamil

Unified hospital in pediatrics. Cesk. pediat. 12 no.9:800-804 5 Sept 57.

1. Ministerstvo zdravotnici, Praha, odbor Zena-dite.
(HOSPITALS
pediatric (Cz))

STOLOVA, Olga, MUDr.

Problems of pediatrics in Russia. Cesk. pediat. 12 no.11:1040-1045 5 Nov 57.

1. Vedouci odboru min. zdravotnictvi, Praha.
(PEDIATRICS
in Russia, problems (Cz))

STOLOVA, Olga

Various pediatric problems in Russia. Cesk. pediat. 12 no.12:1111-1117 5 Dec 57.

1. Vedouci odboru min. zdravotnictvi, Praha.
(PEDIATRICS
in Russia (Cz))

STOLOVA, Olga, MUDr.

School health service and its tasks in the year 1958. Cesk. zdravot. 6 no.2:73-76 Mar 58.

1. Voduci odboru ministerstva zdravotnictvi.
(SCHOOL HEALTH
in Czech., plans for 1958 (Cz))

STOLOVA, Olga, MUDr.

Unified hospital and child care. Cesk. zdravot. 6 no.6:285-289 June 58.

1. Vedouci odboru ministerstva zdravotnictvi.
(HOSPITALS,
pediatric serv. in unified hosp. (Cz))
(PEDIATRICS,
same)

STOLOVA, Olga, MUDr.; MARTINAKOVA, Anna

School health service in the school year 1956-1957 and the tasks for the year 1958. Cesk. pediat. 13 no.1:64-67 5 June 58.

1. Odbor Pece o zenu a dite ministerstva zdravotnictvi, Praha. O. S., Praha 12, tr. Wilh. Piecka 98.
(SCHOOL HEALTH,
in Czech. (Cz))

STOLOVA, O.

Results of the school health service for the school year 1957-58 & our future tasks. Cesk. pediat. 14 no.2:101-108 5 Feb 59.

1. Ministerstvo zdravotnictvi - odbor Zena - dite, Praha.
(SCHOOL HEALTH
school health serv. in Czech. (Cz))

KURAT, K.; STOLOVA, O.

Future plans in the field of pediatrics. Cesk. pediat. 14 no.3:197-202 5 Mar 59.

1. Ministerstvo zdravotnictvi, odbor pece o zenu a dite.
(PEDIATRICS,
in Czech. (Cz))

STOLOVA, O.; HAVLICKOVA, V.

Analysis of the activity in a child hygiene center during 1958. Cesk. pediat. 14 no.6:543-547 5 June 59.

1. Ministerstvo zdravotnictvi.
(CHILD WELFARE
in Czech. (Cz))

STOLOVA, O.; SALICHOVA, J.

Pediatric psychiatric aid in our country. Cesk. pediat. 16 no.4: 289-293 Ap '61.

1. Odbor "pece o zenu a dite" ministerstva zdravotnictvi v Praze.

(PSYCHIATRY) (PEDIATRICS)

STOLOVA, Olga

Fulfillment of instructions of the state regulation No. 662 of 8/5/1959.
Cesk. pediat. 17 no.4:366-368 Ap '62.

1. Odbor pece o zenu a dite ministerstva zdravotnictvi v Praze, vedouci MUDr. O. Stolova.

(PEDIATRICS legisl)

STOLOVA, Olga; MARTINAKOVA, Anna

Analysis and results of care for school children. Cesk. pediat. 17 no.5/6:541-545 Je '62.

1. Odbor pece o zenu a dite ministerstva zdravotnictvi v Praze, vedouci MUDr. O. Stolova.

(CHILD WELFARE)

STOLOVA, O.

Results of child care in 1961. Cesk. pediat. 17 no.9:850-856 S '62.
Cesk. pediat. 17 no.9:850-856 S '62.

1. Odbor poce o zenu a dite ministerstva zdravotnictvi, vedouci MUDr. O. Stolova.

(CHILD WELFARE)

STOLOVA, O.

Analysis of the problems of child health. Cesk. pediat. 18 no.1: 3-10 Ja '63.

1. Odbor pece o zeňu a dite ministerstva zdravotnictvi, Praha.
(CHILD WELFARE) (PEDIATRICS)

STOLOVA, O.

Legislation on increasing care for pregnant women and mothers. Cesk. pediat. 19 no.5:438-439 My'64

1. Odbor pece o zenu a dite ministerstva zdravotnictvi, Praha.