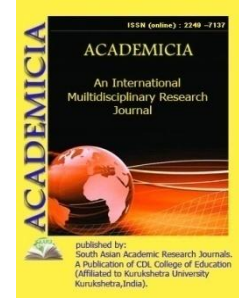


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**WIDE-RANGE CURRENT TRANSFORMERS WITH NON-CONTACT
 REGULATION**

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ABSTRACT

Several designs of wide-range current transformers (TT) have been developed. The analysis of their work has established that the most complete requirements of control and control systems are met by TT, in which the wide range is implemented by the implementation of a spiral core in the form of an Archimedean spiral. This leads to an increase in the stability of the TT. The developed TT consists of a fixed hollow core 1 in the form of a spiral made of non-magnetic and non-conductive material, a primary winding 2 applied according to the required functional law to a fixed core 1, a movable ferromagnetic magnetic core 3 that can rotate around a common axis 4 with the help of a holder 5, a secondary winding 6 located in the inner cavity of a movable ferromagnetic core 3 and a ferromagnetic liquid 7 filling the parts of a spiral hollow tube covered by a movable ferromagnetic core 3 of 1.

KEYWORDS: *Wide range, Current transformers, Magnetic circuit, Magnetic resistance, Stability, Ferromagnetic liquid.*

BIBLIOGRAPHIC LIST

1. Amirov S.F., Khushbokov B.Kh. Current transformers with a multi-turn core for control systems // Innovation-2006: Abstracts. Report International scientific – practical. Conf. October 26-27, 2006. In 2 volumes - Tashkent, 2006. Vol.2. - S. 670-673.
2. Amirov S.F., Khushbokov B.Kh. Current sensors with multi-turn cores // Innovative technologies in management, education, industry "ASTINTECH-2007". Materials of the All-Russian Scientific Conference. In 2 volumes - Astrakhan, 2007. V.2. - S. 76-78.

3. Amirov S.F., Khushbokov B.Kh., Kadyrov J.F., Balgaev N.Ye. Current transformers for operation in transient modes // from the legendary Turksib to the strategic trans-Eurasian highway: Materials of the scientific-practical conference dedicated to the 75th anniversary of the start of operation of Turksib, Almaty, and May 31, 2006. In 2 volumes - Almaty, 2006. Vol.2. - S. 51-55.
4. Amirov S. F., Khushbokov B. Kh., Shoyimov Y. Yu. Remote converters of large currents with multi-turn cores // VestnikTashiit. - Tashkent, 2006. - No. 1. - p. 162-169.
5. Amirov S.F., Shoyimov Y.Yu., Ochilov N.N. Wide-range electromagnetic converters of large direct currents // Resource-saving technologies in railway transport: Sat. scientific. tr. Rep. scientific and technical conference with the participation of foreign scientists. - Tashkent, 2006. - S. 40-43.
6. Amirov S. F., Khushbokov B. Kh., Shoyimov Y. Yu. Remote converters of large currents with multi-turn cores // VestnikTashiit. - Tashkent, 2006. - No. 1. - p. 162-169.
7. Andreev Yu.A., Abramzon G.V. Cell converters for measurements without breaking the chain. - L.: Energy, 1979. -- 144 p.
8. Atamalyan E.G. Instruments and methods for measuring electrical quantities: Textbook. - M.: Bustard, 2005. -- 415 p.
9. Afanasyev Yu.V., Adonyev N.M., Kibel V.M., Sirota I.M., Stogniy B.S. Current transformers. - L.: Energoatomizdat, 1989. --417 p.
10. A.c. CCCP № 135789, Cl. 74 B, 8/04, БИ № 3, 1961.
11. A.c. CCCP № 211638, Cl. 71 d, 54, 21e, 32, GOIR 17/20, БИ, № 8, 1968
12. Golovanova A.M., Kravtsov A.V. Theoretical Foundations of Electrical Engineering // Electrical Measurements: A Textbook for Students of Electrical Engineering. - M.: FGOU VPO MGAU, 2006. -- 96 p.
13. Gurtovtsev A.L., Bordaev V.V., Chizhonok V.I. Measuring current transformers for 0.4 kV: testing, selection, application // News of Electrical Engineering. - 2004. - No. 1 (25), No. 2 (26). - S. 66-71, 91-94.
14. Kochemasov Yu.N., Kolegaev Yu.B. Comparative analysis of the characteristics of magnetic field sensors // Sensors and systems. –M., 2001. - №4. - S. 33-34.
15. Patent of the RUZ. No. 03316. Multi-turn contactless potentiometer of alternating current / Amirov S.F., Turdibekov K.Kh., Shoyimov Y.Yu., Sattarov Kh.A., Khushbokov B.Kh. // Rasmiyahborothnoma. - 2007. - No. 3.
16. Plakhtiev A.M. Non-contact ferromagnetic transducers with distributed magnetic parameters for monitoring and control systems. Avtoref. dis. ... doct. Tech. sciences. - Tashkent: Tashkent State Technical University, 2009. -- 46 p.
17. Rosenblat M.A. New achievements and directions in the development of magnetic sensors // Instruments and control systems. –M., 1996. –№9. - S. 42-50.

-
18. Shabad M.A. Current transformers in relay protection circuits. (Library of electrical engineering, supplement to the magazine "Energetik"; Issue 1). –M.: NTF "Energoprogress", 1998. - 64 p.
 19. KhushboqovB.X., UlugovB.Dz., JurayevA.Ch., OdinayevR.Q., TuraxonovM.I. The problem of measuring large currents with the help of current sensors. EPRA International journal of multidisciplinary Reseahch (IJMR) – Peer ReerRevirewed journal. Volume: 6| Issue: 10| October 2020 || Journal DOI: 10.36713/epra2013||SJIF Impact factor: 7,032||ISI Value: 1,188. pp. 312-318
 20. KhushboqovB.X.,UlugovB.Dz., KhudaynazarovS.Kh., Omonov F. Comparative analysis of modern current converters. EPRA International journal of multidisciplinary Reseahch (IJMR) – Peer ReerRevirewed journal. Volume: 6| Issue: 10| October 2020 || Journal DOI: 10.36713/epra2013||SJIF Impact factor: 7,032||ISI Value: 1,188. pp. 319-325.
 21. Akhmedovich, M. A., &Fazliddin, A. (2020). Current State of Wind Power Industry. The American Journal of Engineering and Technology, 2(09), 32-36. <https://doi.org/10.37547/tajet/Volume02Issue09-05>