

Review of: "The Application of Adjustable Magnetic Devices in Electric Power Systems"

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Potential competing interests: No potential competing interests to declare.

Opinion on the article titled:

The Application of Adjustable Magnetic Devices in Electric Power Systems

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The manuscript presented above is very interesting and ingenious, which after appropriate modifications can be used to compensate the power factor of receivers, especially high power ones. For this purpose, Author used the non-linear inductance properties of coils wound on ferrite cores. In electrical engineering, the phenomena of such magnetic elements for the construction of magnetic amplifiers have been known for a long time. For this purpose, the reduction of the winding inductance by submagnetizing the ferromagnetic core is used to amplify and regulate the alternating waveforms.

The advantage of such a system is high operational reliability and the ability to regulate high output power with a small magnetizing current. Currently, magnetic amplifiers are often used in the construction of PC ATX power supplies to regulate the voltage on the secondary side.

Although the idea of implementing the prototype is innovative, the question arises about the cost of a real device capable of operating at regulated powers of the order of MW. It can be guessed that the device intended for operation in 3-phase systems, additionally contains several TI branches in each phase. Practically, such a system would have to consist of, for example, 9 power amplifiers, and a similar number of other elements. The author gives the value of the gain coefficient of the PA in the range of 0 to about 2.5. Could a larger coefficient of this gain of this amplifier improve the parameters of the device?

The very detailed analysis of the system is well presented and the work is worth publishing.