

Summary

In the diploma project the eddy current device for control of axial movement of shafts of turbines was designed. The introduction substantiates the relevance of the development.

The first section provides an analytical review, which considers: the turbine as an object of eddy current control, the materials from which the turbine housing, inductors, regulatory and technical base of eddy current control, the need to save electrical signal data to remote storage.

In the second section the calculation of the eddy current converter is carried out. The design parameters of the converter are selected, the output signals are calculated, the limiting value of the coil overheating current, the depth of eddy current penetration, etc., the hardware part of the device, ADC, amplifier, microcontroller is selected, the block diagram of one channel of the device is built.

In the third section the software part of the device was developed, the principle of its work is described. The entities that will be in the remote data warehouse are designed, the use of cloud solutions for data processing, analysis, storage and visualization is substantiated.