

Summary

Actuality of theme

To date, accelerometers, velocimeters and vibrometers are widely used in automatic regulation systems. These sensors are used in important plants such as power plants in the service of turbine generators, and in household appliances.

The precision of the work of the vibration sensors depends on the safety of people in the workplace, in systems for automatic control of technological processes and the provision of comfortable working conditions when controlling the level of vibration in the workplace.

For reliable and precise operation of such sensors it is necessary to know precisely their metrological characteristics, before the start of their operation, and periodically believe these parameters. It is possible to achieve this with the help of vibrostands that allow you to set vibro-parameters in a wide dynamic range.

When operating sensors in the field, or in difficult conditions at the enterprises, when removing the sensor and losing it to check is a complex task, due to the shutdown of the installation, portable vibrating screens are used. Portable stationary vibration stands differ in that they have a built-in battery that allows the vibration sensors to be calibrated even under conditions without access to the 220V electrical network.

The problem is the absence of a domestic vibration stand that would allow us to calibrate and relive vibration sensors and vibration equipment in a wide frequency range conveniently and without external equipment. Therefore, the development of a system that automatically adjusts the amplitude of reproducible vibration is an urgent problem that will allow the calibration of vibration measuring equipment much faster and more convenient.

The purpose and objectives of the study

The purpose is to develop a system of automatic level control for the existing model of the vibrostend of the domestic manufacturer.

- Perform simulation and optimization of the elastic suspension VSV-131A
- Develop and substantiate the general structural scheme of the automatic level control system
- Analyze its metrological parameters.

Object of study

Portable kalibrator for MEMS accelerometers.

Subject of study

The system of automatic control of amplitude, spring chain vibrostendu.

Scientific novelty

- It is permitted to the inter-system of the that permits with the high accuracy of the parameters of the parameters
- It is modeled spring pidvis robotic table
- Optimized the parameters of the spring chain.