ABSTRACT

The volume of the explanatory note of this master's thesis is 96 pages. The explanatory note has: 46 drawings, 27 tables, 7 drawings, 1 supplement, 25 sources used.

The aim of this study master's thesis is to solve the problem analysis metrological parameters of sensor weighing transducer using modern computer technology. The basic elements of the weight measuring transducer on the basis of strain gauge sensors are analyzed. Criteria evaluation and limits numeric values of the characteristics of dynamic properties of sensitive items weighing converters that operate under the influence of pulsed loads. A universal mathematical model is developed.

Experimental studies included the determination of the eigen frequency of the strain gauge transducers. The experimental installation is based on the L-Card, using the L-Graphic software. The processing of impulse transient functions results in MatLab. The developed mathematical models of the sensor allow to analyze the nature of its work under pulse loading.

The object of the study is the elastic elements of weighing strain gauge converters. Subject of research: construction of a mathematical model of the response of a sensitive element to pulsed loads.

These results were published at the scientific conference "A Look at the Future of Instrumentation".

Key words: *impulse loading, weighting systems, strain gauge, reliability*.