

Effect of Spring Constant and Thrust Constant to Displacement Characteristics of Slot Type Moving Magnet of LOA

ABSTRACT

This paper discusses the effect of spring constant and thrust constant to the displacement characteristics of LOA. A mathematical expression to represent the LOA has been derived to observed the effect of spring constant and thrust constant to the displacement of LOA. It is shown that the thrust constant is only influence resonance. Furthermore, at optimum value of spring constant will give maximum value of displacement. The LOA is aimed to have a peak displacement of 5 mm at operation frequency of 60 Hz. Consequently, the suitable value of spring constant has been chosen and the measurement result is used to verify the calculation results. It is shown a good agreement between these results.

Keyword: Displacement characteristics, dynamic performance, gain characteristics, spring constant, thrust constant