

Abstract

The reliability of the hi-flex bellow coupling and the magnetic feedthrough utilized in the Flying Wire systems are two prime components that require research to increase dependability. The current design of the Flying Wire system has an issue with the coupling and the feedthrough being overwhelmed from prolonged use. In order to improve the dependability of these two components, a motion control system was designed to test these specific components. Using a test setup, a motion control program was written to analyze the consistency of the coupling and feedthrough. The motion control program was created by programming the Elmo Solo Whistle digital servo drive, which stores and executes the designed program. The system had to be tuned so that the Elmo Solo Whistle digital servo drive can provide the most suitable parameters while also reducing error. Once the setup has been tuned, the system operated continually for about 1.6 days to gather data about the coupling and feedthrough. This paper reviews the hardware and software format, proficiencies, and the results from the test system.