

Abstract

The operation and dynamic response of components on a pneumatic process rig are characterized. A linear model of a pneumatic process is derived from first principles. The model's open loop gain and time constant are experimentally determined at varying operating points over the entire process range. The model's response is simulated and compared to experimental data. Results are tabulated and reveal nonlinear trends. A custom interface developed as part of this work will enable future testing of new model-based or other advanced control strategies.