

APPLICATION BRIEF

2020

ENGINEERING TEST SYSTEM

Brief Description:

Emerging Technologies, LLC. was called upon to develop a test system for electrically operated air pressure and flow based products. Accurate measurement of flow, pressure, vacuum, temperature, and barometric pressure of air with correction to standard flow was required. Additionally the system required control of AC voltage and frequency, DC voltage, as well as, metering of voltage, current, frequency (AC only) and power. Non-contact shaft speed measurement was also required. All metered values are stored to disk based on operator input via a National Instruments LabView 7.0 interface.

A special sampling routine is used to collect and average data samples to correlate with previous testing procedures. Collected data is saved in specification format. The specifications developed are later used for manufacturing test of the product. Three canned tests were developed for the system. Free form testing can be performed as well.

Emerging Technologies, LLC. prepared a functional specification and design package for customer review prior to fabrication of the tester. The Specification and design package included: System Layout Diagram, I/O list, Schematic Diagrams, Screen Layout, Sequence of Operation, and Sample Reports (test spec results). Additional details such as data storage formats, metering accuracies, and special calculations were covered as well. Once approved by the customer the tester was fabricated, tested, and installed at the customer site.

Customer Benefit:

The customer was able to test their devices, using the Emerging Technologies, LLC. custom designed test system, to verify correct operation of their product and automatically develop specifications for manufacturing test. The new system provided better accuracy and repeatability while shortening the test cycle.



ET Responsibilities:

- ✓ Functional Specification Generation
- ✓ Design / Engineering
- ✓ Fabrication
- ✓ Programming – Software
- ✓ Programming – Firmware
- ✓ Field Installation
- ✓ On-Site Commissioning
- ✓ Post Commissioning Support
- Other

Technologies:

- Embedded Computers
- Microcontrollers
- ✓ Visual Software
- ✓ Control Software
- ✓ Data Acquisition
- ✓ Computer Based Control
- ✓ Communications – RS232, RS-485
- ✓ System Integration
- Other

Customer Category:

- ✓ OEM
- Custom Equipment
- Utility
- R&D