Emerging Technologies

AUTOMATED ENGINEERING TEST SYSTEM

Brief Description:

Emerging Technologies, LLC was called upon to add functionality to a test system design for electrically operated air pressure and flow based products. In addition to the functionality of the existing Engineering Test System, new features included computer-controlled pressure and motor speed and an automated testing sequence that would remove user interaction required for numerous tests. The control for the added functionality was added to the current user interface.

Pressure is controlled with an electronic pressure controller and pressure transducer integrated into the pressure line. The computer communicates the desired pressures to the electronic regulator.

The automated test sequence is configured and controlled from a separate dialog window. Sets of supply voltages, pressures, and motor speeds are entered into the dialog window. When the automated test sequence is started, the program cycles through voltages and pressures and stores collected data to the hard disk. A custom spreadsheet with macros gathers the saved data and displays it in a pre-formatted report including tabular and graph data. Manual test functionality was not compromised for the automated test.

Emerging Technologies, LLC prepared a design package for customer review prior to fabrication of the tester. The design package included: System Layout Diagram, Schematic Diagrams, Screen Layout, and Sample Reports (test spec results). 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 updated system provides increased efficiency and reduced error, while freeing
up the operator to perform other tasks.

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,RS485
- ✓ System Integration
  Other

Special Features:
By using an automated electronic pressure controller and custom automated test sequence, this test system can perform pressure tests without any user input during a test. Consequently, a laboratory technician can set up and perform a test on this tester while working on a different task nearby.

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