Emerging Technologies

APPLICATION BRIEF
2020

MODULAR PRODUCTION TEST SYSTEM

Brief Description:
Emerging Technologies, LLC. was called upon to build a duplicate system to one previously provided by Emerging Technologies. Additionally, the system required the integration of a three-phase AC power source for testing three-phase product. The new three-phase panel is mobile for use with the automated test system (via GPIB interface) or elsewhere under manual control.

The test system performs HiPot testing, airflow and system pressure testing via backpressure control, and controls motor speed via voltage control. System vacuum is also monitored. An ambient temperature measurement RTD is employed for use in flow correction calculations. This PC-based system utilizes multiple communication formats to communicate with peripheral devices. Communication formats include, RS232, RS485, and GPIB. Additionally, USB printer and barcode reader are connected.

The system checkout included powering up the system and verification of all devices. Base communication drivers were used to verify operation of PC connected devices. Final verification using the customer developed LabView application was completed by the customer after delivery of the system.

An operator pendant including Banner Duo-Touch sensors, emergency stop button, beeper, and results indication, with acknowledgment capability was provided. An extra long 10-meter cable was used to allow operator additional flexibility.

Customer Benefit:
The customer received a fully assembled, tested, and functioning system, ready for installation of their custom written proprietary test application. The customer was able to take advantage of re-application of a previously provided system to reduce the cost of the overall new system. The integration of the new mobile three-phase power source made for a well-priced solution while providing flexibility of use for the new system.

ET Responsibilities:
- Functional Specification Generation
- ✓ Design / Engineering
- ✓ Fabrication
- ✓ In House Verification
- Programming – Software
- Programming – Firmware
- Field Installation
- On-Site Commissioning
- Post Commissioning Support

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

Special Features:
Instrumentation panels are removed via removable sliding panel and modular electrical connection. This allows for speedy range changes at the production line.

The three-phase power source is mobile and can be moved when not in use or used elsewhere when needed.

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