

APPLICATION BRIEF

2020

PRODUCTION – END OF LINE TEST SYSTEM

Brief Description:

Emerging Technologies, LLC. was called upon to procure components, fabricate, assemble, and verify operation of a customer provided design.

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, 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 (not pictured) was fabricated as well. The pendant included Banner Duo-Touch sensors, emergency stop button, and results indication, with acknowledgment capability.

Fabrication included mounting & wiring of all devices, custom machined brackets for mounting the instrumentation, and custom fabrication of the back panels to accommodate the enclosure penetrations yet allow easy access to devices for troubleshooting and maintenance.

Customer Benefit:

The customer was able to design the system and count on receipt of a fully assembled, tested, and functioning assembly, ready for installation of their custom written proprietary test application.

**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:

Detailed fabrication was required to accommodate sliding drawer style panels for the electrical devices and instrumentation. The instrumentation panels can be easily removed via removable sliding panel and modular electrical connection. This allows for speedy range changes at the production line.