

APPLICATION BRIEF

2021

END OF LINE TEST SYSTEM

Brief Description:

Emerging Technologies, LLC. was called upon to develop and build an end of line test system for a brushless DC motor assembly. The customer-provided specification called for easy loading and unloading of the product. The ability to store results to an SQL database for recall by other test systems to confirm pre-requisite tests have been completed and passed.

A multi-step test sequence consisting of discrete and analog I/O is employed to completely test the functionality of the product. Input current, device temperature, output torque, speed, and direction are verified while a load is applied to the output with the use of a dynamic brake and while no load is applied to the output. Test results are stored locally to a CSV file and remotely to an SQL database. Test parameters are stored locally and are editable by a user with administrator level access to the machine.

Emerging Technologies, LLC. Prepared a design package for customer review prior to fabrication of the tester. The design package included: System Layout Diagrams, Electrical Diagrams, Fixturing Diagrams, and Software Sequence of Operation. Once approved, the tester was fabricated, tested, and operation was verified by the customer.

Customer Benefit:

The customer is able to test a motor assembly, using the Emerging Technologies, LLC. custom test system, to verify correct operation prior to final assembly. The new system saves time and money by detecting faulty units before final assembly, resulting in reduction of final product rework.



ET Responsibilities:

- Functional Specification Generation
- ✓ Design / Engineering
- ✓ Fabrication
- ✓ Programming - Software
- Programming – Firmware
- Circuit & PCB Design
- On-Site Commissioning
- ✓ Post Commissioning Support
- Other

Technologies:

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

Special Features:

- ✓ Touch-screen monitor.
- ✓ Barcode Scanner
- ✓ Label Printer
- ✓ Automated DUT Clamping and Release
- ✓ Automated Test Sequence
- ✓ Results Stored to SQL Database