

Dynamometer Controls and Data Acquisition

Challenge

John Henry Foster Company was asked to design a hydraulic and electronic system for testing transmission systems. With the end customer, JHF determined the testing needs; including test sequence, required inputs/outputs, required data, and overall operation. Their current system required plant operators to record data and adjust teststands manually. The tests were either stopped when operators were not present or the data was lost.

Goals

- Configurable sequence of operation
- User definable data points, with ability to save the information
- Automated data acquisition, control, and shutdown
- Expandable for future I/O Data Connection/Acquisition

System Features

- Allen Bradley Compact Logix control system
- RSViewSE Distributed Operator Interface
- 50 Step definable sequence, including speeds in any direction, aiding or opposing loading, and sequence controlled analog and digital outputs
- Operator Configurable IO, Including discrete, analog, thermocouple, and high speed
- Sequence data saved to SQL database
- Sequence Recipe and IO Definitions stored to SQL Database
- On Board "Flight Recorder" for real time logging of all data on specified time intervals
- Real Time, on screen trending of defined IO
- Real Time Email of faults
- Servo controlled actuators for precise speed control
- Hydraulic Proportional valves for precise system loading

Project Successes

- Increased data collection with more accurate results
- Un manned operation, allowing night and weekend testing and data collection

