

Darren Ash, P.E. - Principal Engineer
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Profile

- 19 years of experience as a hands on engineer, manager and mentor.
- Ability to direct complex projects from concept to fully operational status.
- Organized, highly motivated, and detail-directed problem solver.
- Proven ability to work in unison with staff and upper management.
- Registered Professional Engineer in the state of Alabama, other states as needed.

Education

Bachelors of Mechanical Engineering, Auburn University

Relevant Experience & Accomplishments

Engineering Design Experience

- Balanced experience with mechanical and electrical design.
- Successfully planned and executed control system upgrades in processing and discrete manufacturing plants.
- Extensive experience with multiple control platforms (A-B, Siemens, GE, ABB) in a distributed environment.
- Programmed control systems using multiple IEC-1131 languages (Instruction List (IL), Structured Text (ST), Relay Ladder Logic (RLL), Function Block Diagram (FBD) and Sequential Function Chart (SFC))
- Worked with multiple MMI/SCADA software systems (Wonderware InTouch, RSView32, RSView SE, Iconics Genesis32, Citect and Intellution iFIX).
- Designed, managed installation and startup for control systems located in hazardous areas. Have worked with explosion proof, intrinsically safe and pressurized systems.
- Have worked extensively with multiple field bus systems including; FOUNDATION Fieldbus, HART, PROFIBUS/PROFINET, DeviceNet, EtherNet/IP, ControlNet, Modbus TCP, A-B RIO, AS-i Safe, PROFI-safe.
- Worked with multiple Historian products (Wonderware IndustrialSQL, OSIsoft PI and Rockwell FactoryTalk Historian)
- Created different custom historians and batch management systems utilizing commercial off the shelf technology (standard MMI/SCADA software, PLC logic, SQL Server, MySQL, ORACLE, IBM DB2, etc.).
- Familiar with using UTM (universal threat management) appliances from Juniper, SonicWALL, Fortinet and WatchGuard to create secure access to control networks.
- Worked with multiple instrumentation technologies (mag-meters, coriolis mass flow meters, turbidity sensors, pH probes, RTDs, thermocouples, guided wave radar level probes, ultrasonic level probes, Doppler flow meters, etc.)
- Have worked with many different systems/equipment from ABB. This includes their VFDs, the lower end DCS Freelance 800F, mag-meters, coriolis meters and AC500 PLCs.
- Extensive field startup and engineering experience. This includes sand handling systems for foundries (belt conveyors, bucket elevators, hot gas bag houses, dense phase sand transporters, sand classification screen systems, vibratory conveyors, etc.). Startups for industrial HVAC projects. Startups for chillers, up to 4000 tons (3000 HP compressor motor @4160VAC) of cooling in one single stage York compressor. Robotics work cells at large GM Powertrain facility in Saginaw Michigan that included large distributed control system with 100+ ControlLogix processors, 50,000+ I/O points, vision systems, ABB material handling robots, HMIs, large hydraulic systems, etc. This project included over 50 startup engineers.
- Formulated, wrote, and implemented new equipment operation and maintenance manuals.

Management/Supervision

- Project management for electrical and mechanical jobs in heavy industrial setting.
- Trained, supervised and evaluated staff, coached improvement management skills.
- Successfully refined and implemented new projects.

Employment

Engineering Manager, *Intelligent Products and Systems, Inc.*

2003-Oct. 2009

- Managed and performed design work for mechanical and electrical systems.
- Provided guidance to other engineers on staff for implementation and startup.
- Designed multiple generations of Dynamometers for use by Harley-Davidson. This included mechanical and electrical design. Configuration of ABB ACS800 drives operating in torque and speed mode. Also used the ABB drives in a dual roll test stand where the drives operate in a coordinated mode to stress test the rear differential of a tri-wheeled motorcycle.
- Designed mechanical systems and controls for industrial humidity/temperature control. This included integrating multiple systems together for precise temperature and humidity control. The system consisted of a Munters Cargocaire Dessicant dehumidifier with face and bypass dampers, pre-cool chilled water coil, post cool chilled water coil, post heat and a humidifier. Developed the control strategy to coordinate multiple PID loops which provides precise control and minimizes energy usage. The space is controlled to $\pm 1^{\circ}\text{F}$ and $\pm 2\%$ Relative Humidity.
- Improved process efficiency at Jack-Daniels Distillery by working with their engineering department over a 6 year period. Have automated the whiskey handling from the dump lines through the bottling operating. This includes data collection, batch process automation, process control (heating, cooling, mass flow, density measurement, calculation lookup tables required by the BATF embedded in the control system) and two large filter systems which have automated cleaning cycles. There are also other unique portions of the system including utilizing variable frequency drives on pumps to control flow rates and surge tank levels.
- Performed design reviews, engineering and programming for Eglin Air Force Base with the HERD (High Energy Explosives Research and Development). Many of the projects centered around the safe processing of high energy plastic explosives in an industrial environment so that the design can be given to private contractors to safely deliver the materials and equipment to the US military. Also implemented a process data collection system to monitor critical systems and collect data to be stored in a custom historian based on SQL Server
- Worked with Gestamp North America to develop a large high speed data collection system for over 250+ robotic production cells. Several of the cells produced parts at a rate of 10 pieces per second. The data was buffered in the programmable automation controllers and had a custom routine to handshake with the controller to record the data. The data is analyzed against the ideal production rate assigned to each work cell on a per shift schedule. It also accounts for assigned break times. The system also records downtime information automatically using the built-in alarming system that was provided by ABB's automation group.
- Improved efficiency of design by implementing AutoCAD Electrical and

Autodesk Inventor Professional.

- Control System Project Management**, *Vulcan Engineering* 1997-2003
- Electrical design, electrical schematics, programming and purchase request.
 - Wrote bid proposals, vetted sub-contractors and managed installation by selected sub-contractor.
 - Mechanical equipment design. Experience with hydraulics, electrical servos, mechanical linkage, etc.
 - Designed the data collection strategy and database model for an investment casting shell management system. This unique system was awarded patent number: US6453210 in 2002.
 - Equipment startup and commissioning.
 - Service calls.
- Engineering Manger**, *Alabama Specialty Products* 1996-1997
- Managed design group for industrial laser systems (CO2 and YAG).
- Piping Design**, *Rust Engineering* 1995-1996
- Pipe routing using Intergraph PDS and intelligent P&ID software.
- Process Engineer**, *Southern Tool, Inc.* 1990-1995
- Worked with cost accounting to set pricing on quoted components, work center costing, job standards, etc.
 - Worked with machine shop for improving efficiency.
 - Worked with multiple departments for optimizing process and quality. This included wax injection, ceramics, foundry and the finishing area.
 - Designed automation equipment for investment casting foundry.
 - Designed and implemented industrial drying systems.
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