



CONTROL SYSTEMS ENGINEERING

Our team of dedicated engineers and drafters deeply understand the workings of an integrated control system. We have extensive experience working in hazardous locations with class/division ratings. Our certified professional engineers and automation professionals evaluate and help determine the technology needed to make your project a success.

Engineered Drawing Packages

Interstates delivers value through our drawings packages. These drawings are linked electronically to keep the information current, prevent repetition of data, and avoid entry errors. A drawing package could include the following documents:

ELECTRICAL EQUIPMENT DATABASE: This is a standard equipment list for the project. All equipment connected by the electrical contractor is made available in electronic format.

PROCESS INSTRUMENTATION & MOTOR CONTROL LOOP DIAGRAMS: Interstates develops detailed motor control loop diagrams for all process related motors and discrete and analog process related control devices showing control and starter wiring details for each motor and instrument. In addition, we can provide P&ID diagrams showing process flow, piping, and instrumentation.

CONTROL SYSTEM ARCHITECTURE DRAWINGS: This is a complete communication one-line detailing all relevant information for the connections to the integrated process control system controllers and HMI stations. If fieldbus technology has been implemented, wiring information is also documented within the system architecture drawings. We can also help by evaluating existing installations. We have experience with Modbus, profibus, Ethernet, devicenet, foundation fieldbus, controlnet, and ozzibus.

CONTROL PANEL & MOTOR STARTER PANEL LAYOUTS & FABRICATION DRAWINGS: Panel drawings include back plate layouts, details, communication and/or power one-lines, and bill of materials.

CONTROL PANEL WIRING DIAGRAMS: Diagrams include card wiring details, rack layout, and detailed terminal layouts for control panels.

MACHINE FUNCTIONAL SAFETY: Our engineering group can participate in team based Risk/Hazard Assessments to produce the Function Requirements of the machine, design the safety functions/circuits, and confirm the desired degree of risk reduction has been achieved by testing, checking, and validating all safety functions to insure they are performing to the desired level of reliability.

CONTROL INFRASTRUCTURE ASSESSMENT: The assessment is dedicated to articulating the process control infrastructure to help management understand life cycle status, manage spare parts, and risk exposure.