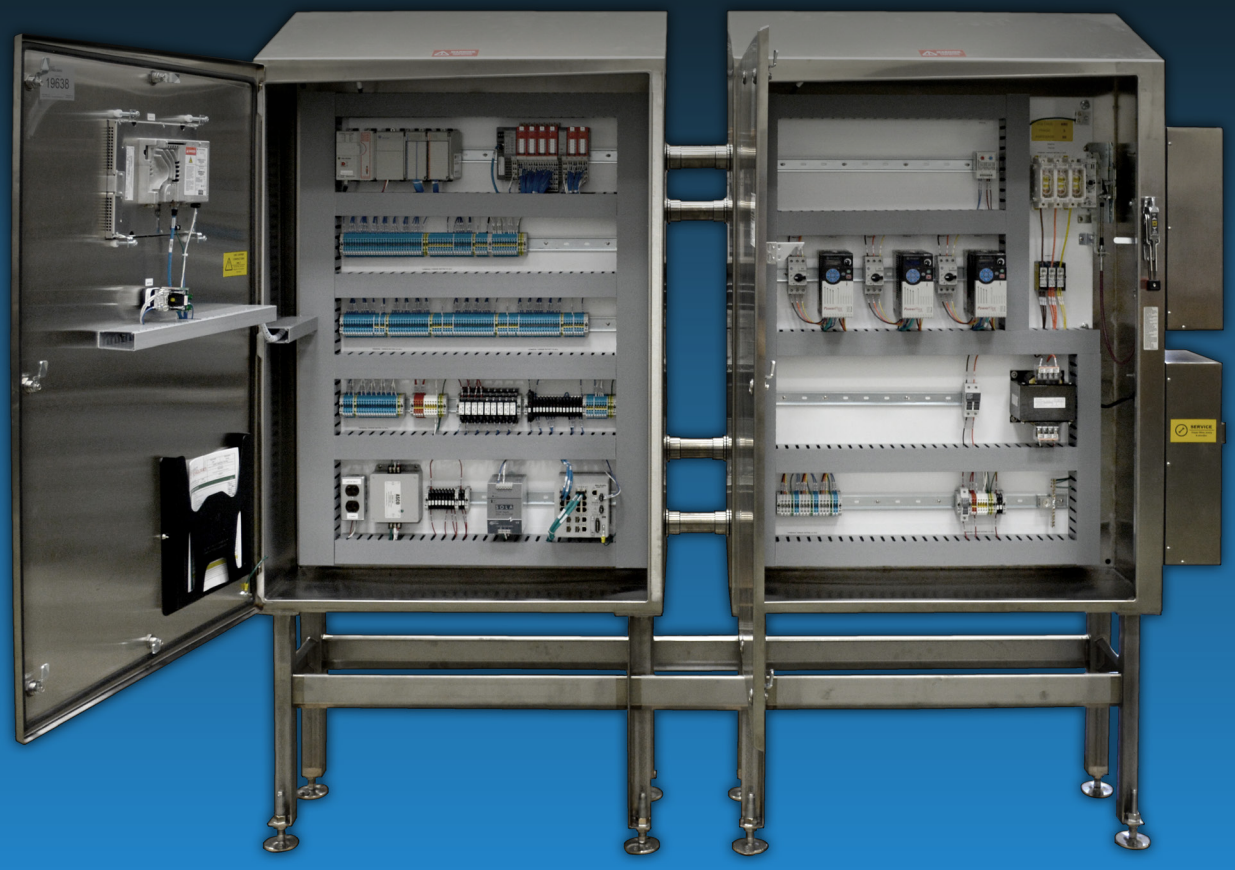
SELECT TECHNOLOGIES, INC.
ACCELERATING DEVELOPMENT OF ELECTRICAL PANELS WITH SOLIDWORKS ELECTRICAL SCHEMATIC PROFESSIONAL

Case Study



Since implementing SOLIDWORKS Electrical Schematic Professional software to develop electrical panel schematics for its automation systems, Select Technologies has cut in half the time it takes to create electrical panel schematics and drawings, enabling the company to better serve its customers and improve its bottom line.

Challenge:
Accelerate the development of electrical panels to support systems integration and industrial automation efforts.

Solution:
Implement SOLIDWORKS Electrical Schematic Professional software.

Results:
- Saved average of 2,033 man-hours per year
- Cut electrical panel layout time from two days to one
- Increased drawing speed by 25 to 50 percent
- Improved development speed and accuracy

Select Technologies, Inc. (STI) is a full-service food plant equipment systems integrator specializing in design-build-installation and production-line automation services for process, material handling, and plant facility/utility systems. The company's comprehensive process can yield cost-effective, highly detailed, and reliable systems even under the most challenging and difficult engineering requirements. STI's services include mechanical systems design, production line layout, electrical design, automation, ammonia refrigeration, UL 508 panel building, IT integration, and HVAC mechanical services.

Because STI's automation projects typically require the use of programmable logic controllers (PLCs) and electrical systems, STI tends to do a much higher volume of electrical schematics and panel design layouts than mechanical design, according to IT Manager Shane Trotter. "Until 2013, we used AutoCAD® LT 2D drawing software to create electrical schematics for our projects, yet we knew there had to be a better software solution out there because practically everything that we did in AutoCAD LT was tedious and done manually, including whenever changes were required," Trotter explains.

"For example, if you have a 100-page drawing packet, and needed to slip a new drawing in at page 52, you would have to manually edit the page numbers in every title block from pages 53 to 100 manually," Trotter notes. "We came to realize that working in a manner that required so much manual entry was slowing us down and impacting quality, so we began investigating a replacement solution that not only would eliminate our manual entry issues but would also integrate with our internally developed central parts database, which is Microsoft® SQL Server-based."

STI's search for a better electrical schematics solution led the company to evaluate the SOLIDWORKS® Electrical Schematic and EPLAN® software solutions. The company chose SOLIDWORKS Electrical Schematic Professional software because it utilizes the same Microsoft SQL Server database as STI's parts database and provides access to an open Application Programming Interface (API), which enabled STI to integrate the solution with its central parts database.

"The SOLIDWORKS API and the fact that SOLIDWORKS Electrical is Microsoft SQL Server-based were the deciding factors," Trotter recalls. "EPLAN had a proprietary database, whereas the SOLIDWORKS solutions had a back end in a database that we could use the API to get to and integrate and automate the solution with our existing systems."

FASTER DRAWING TIME THROUGH AUTOMATION OF MANUAL TASKS

Since implementing SOLIDWORKS Electrical Schematic Professional, STI has realized a range of productivity improvements associated with automating formerly manual tasks by integrating the software's database with the company's central parts database, which now contains roughly 500 electrical symbols, 500 2D layouts, and 2,500 manufacturer's part numbers. Items that have been automated via SQL integrations include serial number labels, fuse lists, material lists, wire labels, terminal labels, backplate labels, material imported into STI's custom Manufacturing Execution System (MES), and 2D panel layouts. Items still being automated include engraved or printed legend plates on switches and PLC input-output lists.

"The level of automation that we have been able to achieve via SQL integrations with SOLIDWORKS Electrical has allowed us to save significant amounts of time. Our designers report drawing speed increases ranging from 25 to 50 percent, and a detailed look at our projects over a five-year period revealed that we are saving an average of 2,033 man-hours per year."

— Shane Trotter , IT Manager

"The level of automation that we have been able to achieve via SQL integrations with SOLIDWORKS Electrical has allowed us to save significant amounts of time," Trotter stresses. "Our designers report drawing speed increases ranging from 25 to 50 percent, and a detailed look at our projects over a five-year period revealed that we are saving an average of 2,033 man-hours per year."

QUALITY ELECTRICAL PANEL SCHEMATICS IN HALF THE TIME

With increased drawing speed, STI engineers can build a schematic for an electrical panel in half the time. Developing panel schematics used to take two days to complete. It now takes a single day. And because STI's integrated systems maintain the information across systems, the data generated in

SOLIDWORKS Electrical in creating the schematic automatically feeds other processes, eliminating the potential for human error related to manual entry.

"With the integration that we've achieved between SOLIDWORKS Electrical and our existing systems, we now have one version of the truth, and the lists and other items that get created at the end of the process now use the same information as the schematics, and no one has to type that information in again, which reduces the potential for error and improves quality," Trotter points out.

IMPROVING PROFIT MARGINS, MAXIMIZING RESOURCE UTILIZATION

With improved accuracy and speed, STI has increased its throughput and profit margins, transforming wasted man-hours into greater throughput and profits. "Our business is primarily developing custom one-off automation systems, so we never design the same exact panel," Trotter says. "The advantages of integrating SOLIDWORKS Electrical with our central database rest on the fact that we are able to do more without bringing on additional resources.

"By maximizing resource utilization and automating processes, we better serve our customers while improving the bottom line," Trotter adds. "SOLIDWORKS Electrical software enables our designers to focus more on the work at hand and less on the frustration accompanying tedious, manual effort. Now, once a designer selects all of the symbols and builds a schematic, engineering can quickly and easily compile the 2D layout based on the components already placed in the schematic set, reducing the overall time required to create a good-looking layout, which facilitates assembly and installation."

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Because Select Technologies has leveraged the SOLIDWORKS API to integrate the SOLIDWORKS Electrical Microsoft SQL Server-based database with its central parts database, the company has been able to automate many manual tasks, resulting in improved profit margins and resource utilization.

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