

“We Need A Partner Who Can Develop A Siemens Control System To Coordinate A Complex, Diverse Set Of OEM-Based Production Processes.”

What Our Client Said

A single facility produces all of our popular carpet tiles, and recently a tornado came dangerously close to it. We need a second location, but more importantly we need a world-class facility – one that will become the gold standard for our company and serve as a template for future facilities. We know that we can trust LSI to help us deliver this new vision.

What We Heard

After working with us for decades, we know we can trust you to act in our best interest. Now we'd like you to show us more of your set of skills, planning and integrating 90% of the controls in our state-of-the-art production facility. This is a big job that will require a controls and systems integration partner that knows how to collaborate with our engineers, understands how to harness the strengths of automation titan, Siemens, and can successfully coordinate and integrate the diverse systems of many OEMs into a cohesive process.

What We Did

The LSI team started by listening to the carpet manufacturer and their stakeholders, including OEMs like Tuftco, Signal Machine, Shoen, NFM and others. As a Siemens Solutions Partner, LSI was responsible for the project from the conceptual phase through commissioning. We provided a seamlessly integrated design encompassing all the different equipment OEMs, leveraging each OEM program and integrating it into the overall system. Operations can run the line as a unified system rather than individual pieces of equipment from a variety of manufacturers with varying standards.

In addition to many other pieces of advanced control technology, this project utilized the latest TIA Portal, S7-1500, Sinamics Servos & VFD drives, and integrated products like E&H mass flow meters, Proton encoders and Sick Optic Cameras. Integrated systems included a compound extruder, plant-wide material handling, tufting machines, finishing line controls, reclamation controls, and a tile cutting & packaging line. All safety systems were integrated into the S7 platform and diagnostic capabilities for the overall system were improved dramatically.



LSI Provided / Managed:

- 4000 total used IO points
(>10k configured IO points)
- 30 HMIs
- 250 VFDs
- Seven major PLCs with many subordinate controllers
- TIA Portal
- S7-1500 controllers
- Sinamics converters
- Complex network configurations spanning multiple subnets and routers
- A central historian with which all PLCs shared data and exposed their tags via OPC-UA
- More than 10,000 total effort-hours over a one-year period, including:
 - Control panel design
 - PLC & HMI programming
 - Coordinating drive system

The Results Speak For Themselves

Unparalleled control

First and foremost, the operations team can easily and quickly control the entire facility without wrestling with disparate systems and contrasting standards.

Reliable safety

With all safety systems integrated into the S7 platform, it is possible to coordinate and monitor systems control with a focus on the welfare of users.

Upgraded diagnostics and history

Coordinated system controls provide the operations team with in-depth diagnostics that allow for matchless process management. In addition, the powerful historian provides data critical for making databased adjustments and improvements.

An award-winning facility

The carpet tile manufacturing plant's control system took home a prestigious award at the 2017 Siemens Automation Summit. [Click here](#) for the full story.

A lasting impression

The plant has become the carpet manufacturer's gold standard facility. The sales and management teams provide tours to customers when they want to make a positive, lasting impression.

When you want to set the standard with your manufacturing automation, contact LSI. We'll listen to your challenges, then work with you to write a success story for your business.



LSI listened,

then put our experience as a Siemens Solutions Partner to work. We seamlessly integrated a cohesive design across multiple equipment OEMs, providing user-friendly controls that allow the operations team to run the line as a single system as opposed to individual pieces of equipment.

***The impact of
this project is
still being felt
throughout
the carpet
manufacturer's
commercial
division. Other
plants regularly
use it as a
model for any
improvements
to controls or
automation.***

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Tags: TIA Portal, S7-1500, Siemens, Servo, Coordinated Drive Systems, Sinamics, G120 series of sinamics drive, S120 series of sinamics drive, S110 series of sinamics drive, CU240E-2PN Control unit for sinamics drive, CU250S-2PN Control unit for sinamics drive with encoder, CU305 Control unit for sinamics servo, TP1200 Comfort HMI 12" HMI, TP2200 Comfort HMI 22" HMI, TP1500 Comfort HMI 15" HMI, ET200SP series of IO used plantwide

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