

## Patti Perspective

September 2015

### Greetings!

The 840D sl control system is a powerful piece of technology that is made for complexity and multitasking. Common in Europe, it's becoming more popular in the U.S., and for good reason. This month, we're taking an in-depth look at what it is, and why it's important.

Also known for his ability to handle complexity, Rick King is in the spotlight this month! Rick is a talented programmer with extensive knowledge of programming languages. He's used his skills to creatively solve many problems for our team - some they didn't even know they had! His hobbies have taken him around the world - read on to find out where.

### Rock Solid Technology - a closer look at Siemens 840D sl technology

The Siemens SINUMERIK 840D Solution Line (840D sl) control system sets standards when it comes to combining various technologies to create multi-tasking machines. Widely adopted in Europe, the 840D sl technology is becoming more common in the U.S., but just what is so

special about this technology?

How does Siemens SINUMERIK 840D sl control technology differ from a traditional PLC control system?



Siemens SINUMERIK 840D sl drive-based numerical control system is a tried and true workhorse when it comes to complex automation. It has highly advanced functionality and accuracy when it comes to coordinated motion control, and allows for operation of advanced, networked production areas to increase productivity. It is not just a programmable logic controller (PLC), it is actually a Siemens S7 PLC and a premium CNC Controller in one.

When and why is 840D technology used?

Anytime you need more advanced or coordinated motions in an application. The openness of the 840D sl is second to none, the CNC can be optimally adapted to the machine's technology with a high degree of flexibility in the production automation environment. For example, the operating system can be supplemented and adapted - even robots and handling systems can be integrated. Basically, it functions as a simple robot controller combined with a PLC. The 840D sl versatility allows for a broad range of requirements - from simple positioning tasks to complex machining processes, with up to 31 axes and 10 channels. The 840D sl can be used with any gantry system picking and placing parts; the technology is also used for machining centers which need precise, coordinated motions or high accuracy/repeatability. For example, 840D sl is ideally suited for controlling the machining of powertrain components in the automotive industry.

If you are an end-user of Siemens 840D sl technology, you know the value it brings to your manufacturing productivity. However, if your plant is in the U.S., you probably struggle with finding qualified engineering help for integration. Many U.S. based companies have needed to bring in engineering and integration resources from Europe and India for service needs.

Patti Engineering's team recognized this need from our clients, and we have trained a group of our engineers to provide clients with the 840D sl integration expertise. Oftentimes, our clients who require 840D sl expertise have been our clients for a long time. This becomes critical because we are already familiar with their processes and requirements,

another advantage over bringing in resources from other countries.

Recently, one of our large equipment OEM clients was fighting a tight project timeline on a project for an automotive manufacturer. They needed assistance with a new powertrain assembly line for electric drive and regeneration motors. Patti Engineering was chosen to assist with the project because of our expertise in 840D sl control systems and our familiarity with the OEM's programming style. The equipment involved 2-Axis Gantries, Promess Presses, and CTS Leak Test Equipment interfacing with Conveyor Control Systems. Our client needed assistance to get the machines functional.

The Siemens 840D sl needed to control the 2-axis gantry pick and place to assemble parts. The eFACS required system integration to organize and control all modifications to products within their portfolio, and integration of the transport system (conveyor) to handshake pallet transfer. Specific automation products used for the line included:

- Siemens S7 PLC
- Siemens 840D Solution Line CNC
- WinCC Flexible 2008
- Promess Drives for Press Operations
- CTS Leak Test Equipment

The scope of our services included:

- Implementation of CNC & PLC logic to make system more robust
- Implementation and testing of system alarms
- Testing/Implementation of eFACS tasks
- Modifications to Promess programs for press operations
- Testing of CTS equipment where applicable
- Onsite startup/commissioning
- Fine tuning of CNC pick & place positions
- Assistance with debug of transport system
- Debug of Cognex DataMan handheld scanners
- Debug of Cognex Vision Systems

Working alongside our client, we were able to help them complete this multifaceted project within the tight timeline required, successfully meeting the needs and expectations of the automotive manufacturer.

If you need assistance with 840D sl technology, we are here to help. Call us at (800) 852-0994, or fill out our [contact form](#) if we can be of assistance.

Solution  
Partner

Automation  
Drives

**SIEMENS**

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## Patti Personnel Spotlight - Rick King

Through the years, Rick King has earned an outstanding reputation among peers and clients alike, earning him the Patti Personnel spotlight this month. Rick fits in well with Patti Engineering's company culture; he is quite the adventure seeker in his personal life, and approaches his work as a fun challenge. As Rick explains, "Something I really like about Patti Engineering: the 'motto' includes 'having fun'."



"Rick has a multi-faceted programming background," said Dave Foster, VP of Engineering. "His depth of experience with lots of different software tools and his engineering aptitude have proven to be very valuable in implementing creative solutions for our clients."

Rick was hired by Patti Engineering in 2008 to assist with the creation of an advanced version of LEID Products patented Biometric Access Control System (BACS™) used to control access to critical assets stored in electronic cabinets. Rick's expertise in writing serial communication protocol in VB code helped LEID Products to customize the BACS system for a high-profile multinational technology company. That project was successful and installed in the client's flagship research and development facility.

After working with Patti Engineering on a handful of other projects, Rick had moved on from Patti and was doing contract work for an auto supplier, adding some minor monitoring and label printing. As that project was ending, he got a serendipitous call from Dave Foster, VP of Engineering. Patti Engineering was looking for someone to support a new major contract - doing production monitoring and label printing. "Basically just what I had been doing but on a gigantic scale. So I slid from one right into the other. It was amazing. That call was one of the most important calls of my life," Rick says.

Most recently, Rick has been using his software know-how in Python to write programs for our team and to be installed in plants that have eliminated hundreds of tickets, improved customer satisfaction, which has saved lots of hours of work for our team. All this programming work is valuable to our team and 'fun' to Rick!

In his off hours, the Michigan State alum enjoys an adventurous life. Though Rick King has lived in Michigan for almost his entire life, he has traveled extensively. "I've been to most states, Europe many times, Central and South America many times, and even Uganda and northern Canada on Hudson Bay," says Rick. "Many trips were for birding (aka 'birdwatching', but better described as 'bird finding'). Birding is addictive and I now have seen about 1900 different bird species - it's like any other kind of collecting, and you often travel to very remote and primitive areas because that's where a lot of birds are. My most recent trip was this spring to Brazil where I visited Iguazu Falls."



When he is not traveling, he's dancing! Folk dance has been a staple in Rick's life since 1978. He is now the group director. He leads many dances, including Tamzara, an Armenian dance, pictured.

It's obvious that Rick enjoys a good challenge, and we certainly enjoy having him on our team!

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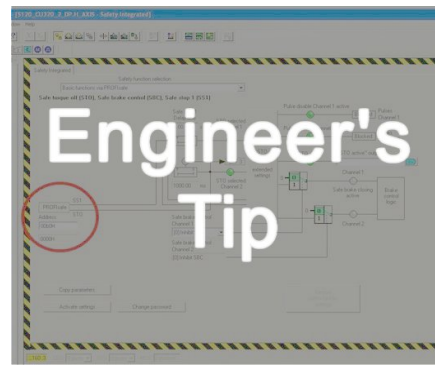
We work as partners with our clients. When you need an expert to help solve automation challenges, we are here to add value to your solution - enhance efficiency, increase productivity, and work with your team as a trusted resource. Visit our [website](#) for more information on our areas of expertise, or call us (248)364-3200 for a free initial consultation.

Thank you for your interest in Patti Engineering.

Best regards,

Georgia H. Whalen  
Director of Marketing  
Patti Engineering





Nikhil Niphadkar, one of our Texas engineers, wrote a step-by-step guide to configuring a variable frequency drive safety- saving time and frustration.

Read the full post here: <http://pattiengineering.com/blog/configuring-vfd-safety/>

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