



## Case Study

# Advantages of a common automation platform: Cutting-edge technology, global support give process gas system a competitive edge.

**By retrofitting the latest Siemens products into its existing gas cabinets – and using Siemens technology to spearhead its newest line as well – a leading manufacturer of gas and chemical distribution equipment is cutting costs, increasing efficiency, and building business at home and abroad.**

When Norcimbus began incorporating Siemens Industry PLCs into its gas cabinets and valve manifold boxes (VMB) a while back, the gas and chemical distribution equipment company had no idea what kind of impact the move would have on its operations. But now, just four years later, it is well on its way to adopting Siemens technology as its standard automation platform, a decision that is giving its customers a new level of service and support and generating new products and systems for its market base.

Founded in 1990, Norcimbus is a leader in designing, engineering, manufacturing, installing, and qualifying particle-free UHP (ultra-high purity) process gas systems. Its line of controllers, gas cabinets, gas panels, and variable flow gas mixers provides gas and chemical control at all levels to a variety of industries. Prompted by requests for Siemens technology from overseas customers and challenges with other suppliers' products, the company began its conversion to the Siemens brand retrofitting mainstay products – gas cabinets and valve manifold boxes (VMBs) – with Siemens' S7-1200 Series PLCs and HMI Basic

and Comfort panels. It then expanded the migration into its newest product line of modular universal controllers, in all cases harnessing the power of Siemens cutting-edge engineering software, TIA Portal, to integrate the components. In the wake of the unparalleled success of the effort, the firm is now extending its use of Siemens products, services, and tools to its entire product line.



Gas cabinets being assembled in Norcimbus' 20,000 square foot facilities in Phoenix, Arizona. Norcimbus is a leader in developing and manufacturing innovative high quality UHP process gas systems and controls.



Norcimbus clean room technicians assemble high purity gas panels that come in a variety of manual, automated, or semi-automated formats.

### In the beginning...

What led to this major change in platforms? A number of factors came into play. Norcimbus manufactures all kinds of automated specialty gas delivery systems. A global company – some 60% of its business is international – its products may be found in facilities from small start-up venture R&D firms to pilot fabricators to fully-automated manufacturing plants. Its primary offering, the gas cabinet, is essentially a cylinder storage device that automates delivery of highly flammable, toxic, or hazardous gases, taking the process out of the hands of the operator.

Systems are built for automatic or semi-automatic operation, delivering gas to users and letting operators know when it is safe to change out a cylinder. Typically, a VMB is installed between the gas cabinet and the tool to distribute the gas to the tool or tools. All components are designed to communicate with one another and many interface to a SCADA system. At the heart of every state-of-the-art system is a PLC.

In the beginning, the company was relatively unfamiliar with the Siemens brand. Then a customer in China asked for gas cabinets equipped with Siemens S7-200 PLCs and a Red Lion display. Issues with the display driver arose and were attributed to the S7-200 PLC, but further investigation showed the problems rested not with the controller but the display. As a result, Norcimbus took a closer look at the Siemens equipment, eventually embracing the S7-1200 PLC, a versatile, flexible product line whose diversity and modular design offers virtually all the features Norcimbus' customers would ever need, from expandable memory to customizable displays. In addition, the PLC's programming capabilities allowed the company to easily upgrade or downscale products while maintaining a standard Siemens core, a capability it had not known with the previous line.

Until that time, Norcimbus had been open to just about any brand of PLC. It had worked with other suppliers, but a spate of difficulties found that they were unavailable to provide needed assistance. With Siemens on hand, however, to help and guide, it quickly became the obvious– and better – choice for Norcimbus. In one case," recalls Norcimbus President and Founder John Wheeler, "we used another vendors touchscreen, and then found it was not upgradable. Not only were they unable to give us the support we needed locally, but they also wanted to charge us for the upgrades that were needed!"

### To support the old, develop the new

Product and support inadequacies grew and more customers requested Siemens hardware as Siemens was introducing its S7-1200 Series PLC and its cutting-edge TIA Portal engineering software tool. "Since then, we have been slowly migrating all our gas cabinets and VMBs to a Siemens platform," says Brian Ebert, Norcimbus' chief operations officer. "The success of those conversions, coupled with the high level of support and service we got from Siemens, prompted us to look hard at integrating its products into all our lines. Our customers' confidence in our PLC-based products has to be high, and with the Siemens platform, it became a lot easier to sell our products around the world."

Most recently, Norcimbus has put the Siemens automation platform at the core of its newest product, the NC Series universal gas systems controller. The revolutionary device, which can be used to populate new builds or upgrade legacy control, is outfitted with a Siemens S7-1200 PLC and either a 4- or 7-in. Siemens HMI Comfort Panel. The displays are equipped with Pack-and-Go and backup/restore features that allow modifications to be made quickly in the field, cutting time and service call costs because changes can be emailed or delivered overnight. Flexible and scalable, the universal controller is easy to use and offers open communication to SCADA systems. The new product family includes five models from NC1 through NC5 and can be upgraded or downscaled according to the required level of control.



Norcimbus' new NC3 gas system controller is enabled with a Siemens S7-1200 PLC touch screen interface to allow ease of use and open communication to SCADA / GMS.

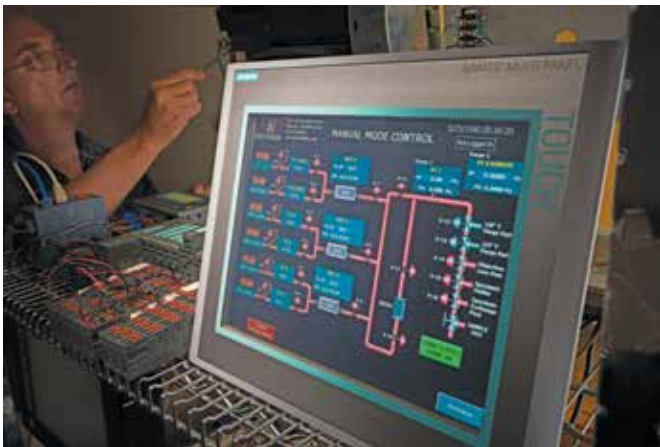
The modular controller can be retrofit to virtually any gas cabinet. “We see a great need for this type of product,” says Wheeler. “The PLCs in a lot of existing equipment are aging, control systems in them are failing, and replacement parts often unavailable or the supplier no longer supports the product. Owners face completely replacing a \$40,000 installation that performs well except for the controller. Now we can give them that component, plus new features and functions at a competitive price. It is much more cost effective to upgrade an existing system than to install a totally new one.”

The Siemens platform in Norcimbus’ new products and its existing systems has given the company countless capabilities it could not achieve with the other brand. Brian Ebert calls the new universal controller the way of the future. “The confidence we’re gaining with the Siemens equipment is allowing us to tackle more than gas cabinet upgrades. With the universal controller, we can upgrade aging, legacy equipment and also build new state-of-the-art systems.”

### Embracing integration, efficiency

Developing a controller that could be retrofit to any existing gas cabinet presented many challenges, but they were challenges the Siemens platform could meet. “We had to come up with a universal device and yet be able to program it to handle any and all options,” Wheeler points out. In this case, we’ve really seen the benefit of Siemens’ engineering software tool [TIA Portal]. Inside the program, we can place options and features that can be installed or uninstalled to match any cabinet specification. We can scale systems up or down as needed while using a lot of the same programming throughout the PLCs and the screens. We couldn’t do that with any other brand.”

Norcimbus has been using TIA Portal about a year now, and thus far is very pleased with what it has seen the software do. Says Peter Golde, Norcimbus software engineer, “I have worked with just about every product and manufacturer there is. One



Norcimbus software engineer, Peter Golde, uses Siemens’ TIA Portal to customize features on this comfort panel. The integration of the Portal makes configurations for customers’ specifications more seamless and user friendly.

of the things I wanted to do was to settle in on Siemens products because of the way they are so well integrated through TIA Portal. The way it brings all products to a single database and connects everything through one software package is a huge benefit. I don’t need to keep learning different software. I can concentrate on the code, my primary responsibility, and use and build on the library in TIA Portal.”

### It’s all in the service

Beyond innovative software and high-performance hardware, Norcimbus knew a successful conversion effort would turn on a critical concern: service and support. “When we first started using PLCs in our equipment,” recalls Wheeler, “we felt we weren’t getting the support we needed from our suppliers, especially from our major supplier. We needed a seasoned partner that could provide local support, service, and spare parts. Siemens seemed to have a much better grasp of the world market and was more accessible for our customers. We’ve had great support from them.”

Although all manufacturing takes place in the 20,000 sq. ft. facility at Norcimbus’ corporate headquarters in Phoenix, AZ, field service and sales technicians from Singapore to Shanghai are now in a position to service Siemens equipment on location. “We don’t have to dispatch a programmer or technician from here anymore,” says Ebert. “We can service customers quicker and better.”

Further, Norcimbus makes use of a special Siemens’ program called SIROT. Intended especially for machine builders who use Siemens parts and components, it allows a company to issue one purchase order to Siemens, who in turn handles everything needed to replace a part locally. The process significantly reduces time and effort required to accomplish maintenance and repair tasks.

### We’ve only just begun

Thanks to Siemens’ dedicated sales and service support and its versatile, cutting-edge product lines, the automation leader has become a trusted adviser to Norcimbus in a relatively short time. The flexibility and scalability of TIA Portal and the S7-1200 Series PLCs made them a natural fit for Norcimbus products. As the equipment was incorporated into one product line after the other, it continually proved its tremendous value over previously used brands and demonstrated an ability to perform and function as the other products could not.

At this point, putting numbers to savings is understandably difficult, but Norcimbus anticipates reaching the 25% to 30% savings in engineering time typically achieved using TIA Portal. “We have been very satisfied with the hardware and the ability to scale systems as needed while utilizing a lot of the same programming,” says Wheeler. “Right now, time spent programming is probably about the same as before, but once we get past the initial development stage, I believe we’ll see a real time saving benefit from being able to share and cross-pollinate original development instead of redoing everything each time.”

Although some Norcimbus products still use other brands, the company plans to eventually migrate totally to the Siemens line. "If a customer started out with another brand and has it in-house, it is understandable that he may want to stay with what he knows," Ebert pointed out.

"We will eventually migrate all our components to Siemens," Ebert stated. "We haven't even begun to realize the benefits we will incur once the company is fully integrated into the Siemens line. Then, we will achieve much greater cost and time savings and will be able to do things quicker and easier."

Wheeler agrees. "Development time will be less, time to market will be faster, and cost savings greater," he concludes. "It will give us a broader scope and have a positive impact on our business."

For more on Norcimbus and its gas and chemical distribution equipment, visit the company Website at [www.norcimbus.com](http://www.norcimbus.com). For more on Siemens Industry products, systems, and service, visit the Siemens Website at [www.usa.siemens.com/industry](http://www.usa.siemens.com/industry)



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