

Modular circuit breaker system makes life easier for system integrator

Highlights:

- In the past, ATN Hoelzel sometimes spent up to a day and a half wiring the I/O for its circuit breaker system
- By switching to the Phoenix Contact CAPAROC electronic circuit breaker system, ATN saved significant time and space
- The customizable CAPAROC gave ATN the flexibility, communication, and easy installation needed

> "The Phoenix Contact CAPAROC system makes our life easier."
>
> Carsten Koch, lead engineer for ATN Hoelzel

Customer profile:

ATN Hoelzel is a global, cross-industry supplier of application system components, automation systems for application and assembly processes, and engineering consulting solutions. The U.S. headquarters is located in Chattanooga, Tennessee.

Thomas Brandler, chief operating officer of ATN in the U.S., describes the company as "one of the leading suppliers in the automotive industry's fine assembly automation equipment. We were founded in 1999 in Germany, and since then, we have expanded to China, Spain, Brazil, and the United States. The U.S. facility is the second largest in the world."



Figure 1:
ATN Hoelzel is a global, cross-industry supplier of application system components, automation systems for application and assembly processes, and engineering consulting solutions.

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"I think ATN stands out because we're not a simple, straightforward system integrator like all of our competitors," Thomas said. "We're more vertically integrated. We have more in-house fabrication, in-house design, and in-house programmers. We like to keep programmers and designers from the beginning to the end of the projects, as much as we can."

Challenge:
Time-consuming installation process

ATN Hoelzel was building an assembly line of robotic cells. The cells were custom-designed to manufacture the often unique body components of self-driving autonomous vehicles and other specialized industrial applications.

ATN needed to upgrade and modernize how it outfitted its panels. In the past, ATN had used a thermal-magnetic circuit breaker system, but that system no longer met their needs. They wanted a less cumbersome circuit breaker system that would save space in the cabinet and produce useful operational data

"We were looking for something that makes our life easier, which saves us time with wiring and also saves space in the cabinet," Carsten Koch, lead electrical engineer at the Chattanooga facility, explained. "The normal approach with circuit breakers with auxiliary contacts involves a lot of wiring those auxiliary contacts back to a digital I/O module. Wiring that probably took a day or a day and a half."



Figure 2:
ATN handles most of its design, fabrication, and programming in-house.

Solution:
Customizable electronic circuit breaker system

Carsten said, "We always try to make our products better and more innovative, and that includes saving space. Space is a rare commodity, especially in the automotive industry. So that brought us to Phoenix Contact and the CAPAROC system."

CAPAROC is a customizable electronic circuit breaker system that provides overcurrent protection in 12 to 24 V DC applications. It is a space-saving modular system that can communicate over different industrial protocols.



Figure 3:
CAPAROC is a customizable electronic circuit breaker system that can communicate over different industrial protocols.

CAPAROC eliminated the day-long wiring process. Carsten explained, "With the CAPAROC system, we can just install it. It uses up way less space, and we only have to hook it up to 24 volts and a bus system."

ATN needed a zero-voltage circuit breaker system. This would ensure minimal electrical disturbances when switching the machines on or off. Carsten explained, "A zero-volt module allows you to do easier troubleshooting in the cabin itself, rather than chase down possible wiring or other errors in the application."

CAPAROC made it possible to position the zero-volt return module alongside the associated circuit breaker modules. This provides an easy-to-maintain, uninterruptible 24 V DC distribution system.

CAPAROC can also communicate via EtherNet/IP and PROFINET, which gives the ATN engineers important data about the state of the system. It has an integrated web server for granular control over complex applications and push-in terminals for easy installation.

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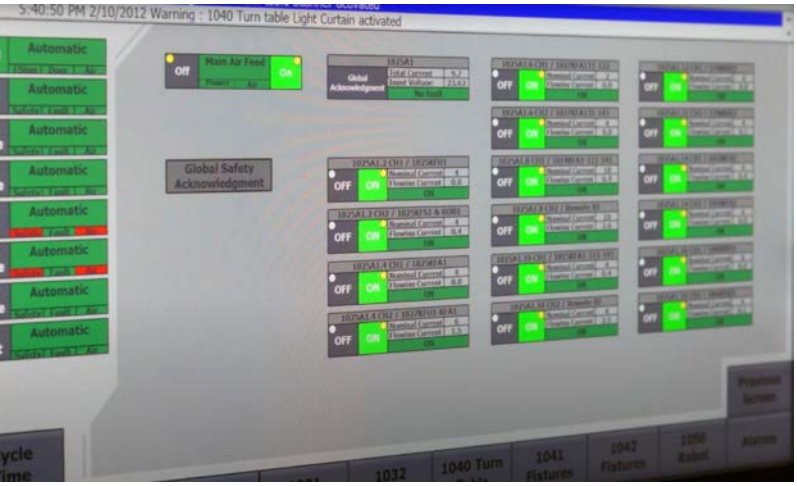


Figure 4:
CAPAROC circuit breakers give ATN valuable data that they can monitor and display to make better decisions.

ATN trusts numerous other Phoenix Contact components, including power supplies and various terminal blocks. Carsten stated, “Phoenix Contact provides us with the quality that we need, especially for terminal blocks and the long life of power supplies.”

Results:

Less time and space, but more data

“The Phoenix Contact CAPAROC system makes our life easier. It saves us wiring time and saves space in the cabinet,” Carsten concluded. “Since we can communicate over PROFINET or EtherNet/IP, we even get more information that we can display and monitor the values from those circuit breakers.”

Watch a video about the application.