

Industry: Machine building

Customer case study



Fast and reliable: Novum Automation trusts Push-in Technology

Highlights

- Novum Automation takes historically manual processes and automates them for optimal system control and return on investment (ROI)
- While upgrading a conveyor system, Novum discovered the fast, easy, and reliable Push-in Technology from Phoenix Contact
- Novum now trusts Phoenix Contact products for most of its projects, as the faster installation time and high reliability save money in the long run

Customer profile

Novum Automation is a small, innovative engineering and fabrication company located in Traverse City, Michigan. Novum takes historically manual processes, such as data acquisition and life-cycle product testing, and automates them for optimal system control and ROI.

Reese Gallagher, owner and lead systems engineer at Novum, explained, “We’re a fairly young company and just recently rebranded from Gallagher Engineering to Novum Automation. We’re five engineers who are interested in everything, want to perform the best at everything, and just enjoy doing what we do. We hold ourselves to a pretty high premium.”

Reese stated, “In our industry, we’re at a mark where equipment has been installed for the last 20, maybe even 30 or 35, years. There’s a need to revamp that old equipment, since a lot of older technology is no longer supported. It’s starting to have many issues, and there’s a high demand for upgrading control systems in manufacturing facilities.

“We’re seeing high demand in the Northern Michigan area, where industry’s grown, yet the control support has not really grown with it. We’re starting to find common needs among our customers.”

“After using push-in terminal blocks, anything else looks outdated, so we’ve been asking customers ‘Do you want to upgrade that?’”

Reese Gallagher, owner and lead systems engineer

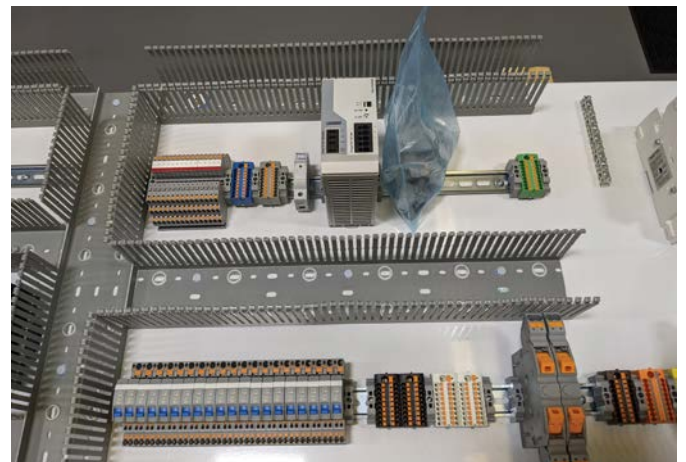


Figure 1: Novum needed to complete four conveyor systems in just four months, so the company needed a fast way to wire terminal blocks.

Modernizing the conveyor control system

Novum Automation sees this issue across many types of applications, such as conveyor systems. Novum had a client who needed to upgrade conveyor systems on four bottling production lines. The original system ran on obsolete hardware, which hindered operational productivity.

Reese explained, “A lot of manufacturing companies have conveyors moving their product throughout the facility. There has to be some form of a control system with handshaking between machines, so the operators know when products are backed up or jammed. We also do inline inspection equipment as well.

“We’re starting to build out a standard solutions portfolio. We realized, ‘Hey, we seem to be doing a lot of conveyor control systems. Why don’t we just build out a standard solution, so that way we can market specifically to that?’”

Novum designed, developed, installed, and commissioned a fully functioning conveyor control system using the latest scalable, future-proofed PLC control and panel build hardware with thorough documentation for operator usability. The new system included digital photoeyes to detect bottle jams; variable frequency drives (VFD) to minimize the severity of acceleration/deceleration conveyor sections, which maximizes the AC motor lifespan; and new AC drives for higher reliability and safety.

Novum had to complete all four systems in just four months, so the company needed to work fast. Wiring terminal blocks can be a time-consuming project. While terminal blocks are one of the most basic components in a control cabinet, wires sometimes come loose over time and cause problems down the road.

Reese said, “After five hours of troubleshooting, we would find out that one of the screw terminals wasn’t tightened all the way, and gravity is taking it down. Or maybe someone came in at some time and bumped it. It comes off, and now we have to somehow troubleshoot a thousand different points of contact to figure out which wire is not connected.”

Push-in Technology

After seeing some panels built with Phoenix Contact products, Reese was interested in learning more about Push-in Technology (PT). “When we noticed it, we thought, ‘Wait – you have something where you just push it in? And then it just stays, and it holds well, and it resists vibration?’ We were wondering, ‘Why isn’t everyone doing this?’”

Reese admits he was initially a bit overwhelmed by Phoenix Contact’s wide-ranging product line, but Zach Vinski, his local industrial sales engineer, helped guide him through the catalogs.

“Zach’s done an amazing job at helping us get through that and hone in on things.”

Novum specified the PTPOWER high-current terminal blocks and PTIO sensor/actuator terminal blocks. PTPOWER offers fast, user-friendly connection for wiring conductors as large as 350 kcmil. The PTIO is tailored to the wiring of modern machine controllers. These terminal blocks have the same shape as Phoenix Contact’s CLIPLINE complete plug-in bridge system and offer maximum flexibility.

Novum had a very tight turnaround to complete the conveyor control systems. “We did four of these systems within about four months,” said Reese. “We had to build these extremely fast, and one of the great advantages that PTPOWER and the overall PT terminal blocks gives us is that time savings. We’re not screwing things in. I got tennis elbow back in the day, from screwing in so many terminal blocks, so I’m a significant proponent of PT. The time savings helped us build the systems faster.

“They’re also finger-safe, which is amazing. But they’re quick and easy to use. There’s no torquing on them.”

He said that the PTIO’s narrow size was another benefit. “It’s a nice sensor I/O. You basically can provide power to it, and then you use a jumper across. Then it’s very slim. You can bring in I/O very efficiently, to where you can bring a proximity sensor. The power’s already run across. You don’t have to run individual power. That’s amazing, and yet you can still get the I/O directly from it. So that’s another realm where we use it, along with just standard feed-through terminal blocks.”

Connections you can trust in the long run

Novum fully overhauled all four control systems within the short four-month development timeline. The new system’s footprint



Figure 2: PTPOWER offers fast, user-friendly connection for wiring large conductors. Novum now uses PTPOWER for nearly all of its power distribution.



Figure 3: Despite their small width, the PTIO terminal block range saves time and space when wiring. The easy Push-in connection makes them fast, easy, and reliable.

encompassed just two standing control enclosures, compared with three or four in the old system.

Reese said Novum uses PTPower for all of its main power distribution. “And we use PT terminal blocks in almost all of our applications now. There’s such a wide range of variety that you’ve got the double level. You’ve got even a triple level. One interesting, cool one was you’ve got one for AC motors. Then it’s got the ground, too, so you can quickly terminate going into or coming out of a VFD. Then your field wiring could come in and go right to it.

“After using push-in terminal blocks, anything else looks outdated, so we’ve been asking customers, ‘Do you want to upgrade that?’”

Reese says that from a cost standpoint, Push-in Technology and other Phoenix Contact products save money over time. “Phoenix Contact products, and specifically push-in terminal blocks, save us a lot of time on building a panel. Then you look at the long-term effects of a quality product, in my opinion. It’s not going to break down in the field unless someone does something to it. So, we don’t get calls saying, ‘Hey, something’s not working.’”

“What I like about Phoenix Contact is I can trust their product line. I do not have to bring it in for testing from a quality standpoint first. I don’t have to be concerned that it’s going to break down in an unexpected way two years into it or even during the commissioning,” he concluded. “If I go with Phoenix Contact, it lessens the load on my shoulders, makes me sleep better at night, and I just know that the product that they’re giving me is going to do what it says it’s going to do.”



Figure 4: Novum condensed the control system into just two standing cabinets, compared with three or four in the original system.