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Automated Controls &

THE CONTROL INDUSTRY IS FLOURISHING, allowing contractors in the infrastructure and installation market to thrive. Maintenance, a crucial component for the end-user and installer, remains a hot topic. The control market has morphed into a versatile industry encompassing traditional forms, such as drive controls, and newer areas, such as building controls. Regardless of the specific control market being pursued, the industry is moving toward enhanced maintenance.

Energy awareness

Mounting energy costs have been cutting into profits across all markets, and energy-efficient building controls are one way to alleviate the problem.

“Throughout America, the large majority of energy is used to operate motors, refrigerator equipment, pumps, fans, etc., and these all require a lot of energy due to the almost constant use of a motor,” said Tom Matyas, drives, motors and motion product manager for Atlanta-based AutomationDirect. “Great strides have been made, not only in motor technology, but also in drive technology, to help make energy usage more efficient.”

To help control energy usage, contractors are turning toward alternative building and automation controls, such as daylighting and occupancy-based lighting controls. Daylighting means that controls can be set to dim lights during daylight hours to make use of the free light, while occupancy controls are based on the number of people in a given space. For instance, when an area is scheduled to be vacant between certain hours, the automated controls would automatically ensure that all of the controllable lighting is turned off. Overrides are available for both daylighting and occupancy controls, but those measures help ensure efficiency occurs on a routine basis.

Keeping tabs on the processes

One of the most important aspects of the control market is monitoring how everything is operating.

“Just picture 10 drives controlling a process,” said Matyas. “Using trending software, data is collected for the maintenance person. Right away, he can see where he needs to trim the process for efficiency. He can also determine when something is going wrong.”

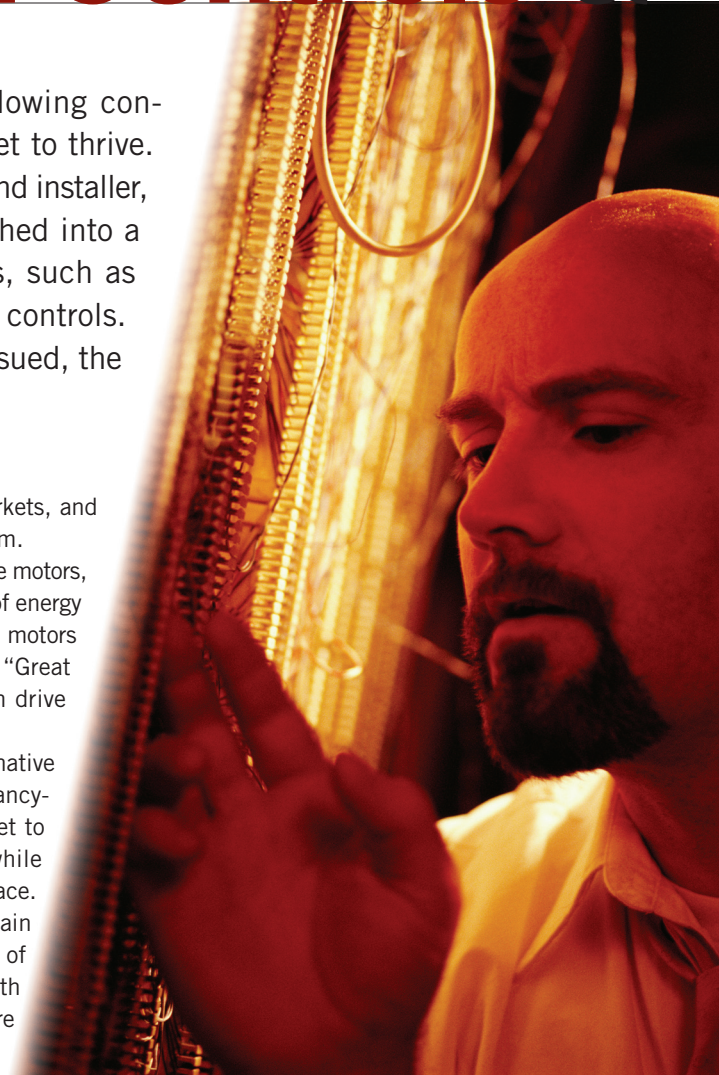
Lost productivity is one of the most critical areas end-users need to manage. Every piece of equipment that needs to be taken down for repairs, or fails on its own, translates into lost work hours for that piece of equipment. When equipment is not working, people aren’t either, and products aren’t produced. The same holds true for any system, when the power is out in a facility, all work stops. When computer systems or

communication systems go down, business slows to a crawl. Properly maintained systems and equipment operate more effectively and efficiently. More importantly, productivity is maintained, which can trickle down and increase productivity across the board.

One way to ensure a project runs smoothly is through quality communication. Many contractors have found that things flow smoothly when all key players are involved from the beginning.

The approach

The control systems market is evolving, forcing contractors to update their overall approach every few years. For example, facilities owners are very interested in maximizing the efficiency of their electrical equipment with the goal of longer life and energy savings. In 2005, Aldridge Electric Inc., Lib-



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ertyville, Ill., provided electrical infrastructure for two buildings in Chicago that are seeking LEED Silver Certification: The Chase Tower at One South Dearborn in Chicago and the Takeda Pharmaceuticals Office Campus in Deerfield, Ill.

“We’re seeing more and more bid packages with requirements for control devices and parallel circuitry in all types of industrial projects, including water treatment plants, office buildings, and high rises as well as outdoor lighting applications including parks, parking lots and other public areas,” said Tom McLinden, vice president of business development, Aldridge Electric. “This interest also extends to the transportation sector where federal, states and local highway departments are seeking greater control to allow for improved data acquisition and greater networking capabilities for better traffic management and security.”

One approach that works for Aldridge Electric is to involve everyone from start to finish. Steve Lang, Aldridge Electric project manager and engineer, explained that the company likes to get everyone on board as soon as possible, beginning with preconstruction.

“It is about complete quality control and making sure that everything is accounted for,” he said.

Contractors such as Aldridge Electric use their in-house team members for quality control. Foremen are used for their extensive knowledge on basic operations of systems, and CAD does the construction drawings. Proper planning can help contractors overcome integration—one of the biggest hurdles in a control project.

“If all of the pieces fit together, things will work,” said Lang. “It is tough, but if we bring CAD together with the foreman, engineer and vendors we can do things smoothly.”

The goal is to get each system installed and running. From there, everything is tied back to a supervisory control and data acquisition (SCADA) system for central control. Once turnover is complete, most contractors pass off the project to outside firms specializing in maintenance. This, however, is a mistake. Contractors should strive to set up maintenance contracts, because it creates an ongoing stream of revenue.

The maintenance triumvirate

Maintenance is an instrumental part of control systems that not only includes automated systems in manufacturing, but large control systems in buildings. Control systems have evolved to encompass more than just machine equipment on a plant floor. The market is headed in a direction that better addresses the needs of the end-user, and maintenance serves as the backbone of that relationship.

“It really is a collaborative approach,” said Scott Teerlinck, director of commercial marketing, Rockwell Automation, Milwaukee. “We just do not offer the areas of services that contractors do.”

Teerlinck mentions three areas of maintenance in the control market: reactive, predictive and preventative. All three are different and essential. Teerlinck refers to this as the “maintenance triumvirate.”

Reactive maintenance is a response to a failed device. This is when contractors are brought in due to unforeseen failures. In traditional contracting, reactive maintenance is the equivalent of emergency service. According to Teerlinck, training clients on competency is also part of this process.

Preventative maintenance is just as the name implies—measures used to prevent problems. Thanks to advanced software programs, most of this is computerized. By taking care of equipment throughout its lifespan, many problems can be avoided.

Predictive maintenance is the most crucial approach for dealing with mission-critical devices, because it can anticipate what problems may arise. Being able to accurately predict when equipment or systems may go down can help alleviate surprise failures that are detrimental to production and efficiency. The highest level of predictive maintenance requires major funding, but will save you money in the long run if it prevents even one system failure.

Every customer has individual maintenance needs, and it may seem difficult to sort through all the possible options.

“The key is to get the right mix of reactive, preventative and predictive maintenance for the customer,” said Teerlinck.

It is important for end-users to understand the true benefit behind maintenance, which helps preserve equipment and systems, making downtime controllable and avoidable.

The contractor's place

Contractors can participate in two distinct areas within the automated control market: design and application and maintenance. Automated controls have evolved into a comprehensive market which has been further accented by the addition of maintenance. This is a welcome sight for contractors.

“Some owners are also asking us to include on-site maintenance and warranty coverage as part of our installation proposal, a trend that we see continuing in the future,” said McLinden.

That should be good news to contractors who have been trying to find a new way to enter the control market. Who would have ever guessed it would be through the old standby known as maintenance? **EC**

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