Single Version of Truth - Beyond Productivity

Simplifying Biopharmaceutical Production with Single-Use Systems

Modern Batch Systems Help Solve Today’s Market Challenges

Digital Transformation in the Pharmaceutical Industry

Inside
EXECUTIVE MESSAGE

Traceability Takes Precedence

Consumers are demanding more choices. Regulations are getting tighter and operations are becoming more complex. As today’s dynamic manufacturing industry continues to present multiple challenges, companies are now more than ever required to embrace the latest technologies to uncover new competitive advantages.

Digital transformation has become imperative for manufacturers facing shifting customer expectations, uncertain global trade and cost pressures, and workforce shortages. It can help companies establish connected operations as a way to remain competitive and better serve their customers.

As regulations and compliance requirements continue to tighten, a traceability infrastructure is no longer optional but now essential. Whether you are a pharmaceutical, medical device or consumer packaged-goods manufacturer, you are now required to track and trace products across the supply chain.

In fact, a number of countries around the world are in the process of rolling out serialization-based anti-counterfeiting regulations. A recent study found that while only 23 percent of manufacturing companies had the processes and software in place to enable end-to-end traceability, around 60 percent planned to have these in place in the next year.

This issue of Automation Today delves deep into how a traceability infrastructure can help improve your time to market, manufacturing processes and compliance. It focuses on how the latest technologies can help manufacturers make their production systems more flexible and efficient.

It features topics essential to establishing a traceability infrastructure, including: Single Version of Truth - Beyond Productivity, Simplifying Biopharmaceutical Production with Single-Use Systems and; Modern Batch Solutions Help Solve Today's Market Challenges. This issue also includes the latest products and technologies, customer case studies that demonstrate how we help customers address their application challenges and recent company news and events.

I hope you enjoy this issue of Automation Today and that it helps you identify new and innovative technologies for your digital transformation journey.
We work with top biotech, pharma, and device manufacturers to make their **life sciences facility** of the future a reality. Together, we advance industrial transformation with new technologies, innovative solutions, and shorter timelines to improve patient outcomes.
Rockwell Automation Strengthens Control & Visualization Portfolio with Acquisition of ASEM

Rockwell Automation announced it has signed an agreement to acquire Italy-based ASEM, S.p.A., a leading provider of digital automation technologies. ASEM provides a complete range of Industrial PCs (IPCs), Human-Machine Interface (HMI) hardware and software, remote access capabilities, and secure Industrial IoT gateway solutions.

ASEM’s high-performance automation solutions enable The Connected Enterprise with smarter technology, enhanced productivity, and a more secure environment by integrating smart devices, the control platform, and design and operational software all on a single network.

“ASEM’s strength in the IPC market and expertise in HMI will further expand our Control and Visualization hardware and software portfolio and enhance our ability to deliver high-performance, integrated automation solutions. ASEM’s products will provide our customers with a high degree of configurability for their industrial computing needs through innovative hardware and software that allows them to achieve faster time to market, lower their cost of ownership, improve asset utilization, and better manage enterprise risk,” said Fran Wlodarczyk, Senior Vice President, Architecture & Software at Rockwell Automation.

“ASEM has a leading market position in Italy and has a brand that is synonymous with quality. We are delighted to have the opportunity to leverage our pioneering expertise in the design and production of Industrial PCs and industrial software to broaden Rockwell Automation’s Control & Visualization offering and accelerate the digital transformation of our customers,” said ASEM founder, President, and CEO Renzo Guerra.

The transaction includes the purchase of a minority interest in ASEM held by KEB Group, Germany. Post-close, Rockwell Automation will maintain ASEM’s strategic supplier and technology partner relationship with KEB.

The transaction is expected to close in the spring of 2020, subject to customary approvals and conditions, and will be reported in the Control Products & Solutions business segment.

Rockwell Automation to Broaden Connected Enterprise Consulting Expertise with Acquisition of Kalypso

Rockwell Automation today announced that it has signed an agreement to acquire privately-held Kalypso, LP, a US-based software delivery and consulting firm specializing in the digital transformation of industrial companies with a strong client base in life sciences, consumer products and industrial high-tech. Kalypso offers a full suite of consulting, digital innovation, enterprise technology and business process management services that enable the transformation of product design and development, production management, and client service models.

“Kalypso’s deep roster of experienced consultants and technologists, expertise across the digital value chain and established customer base in key growth sectors will enable us to further accelerate our customers’ Connected Enterprise journey and support Rockwell Automation’s strategic objective of continued double-digit growth in Information Solutions and Connected Services,” said Frank Kulaszewicz, Senior Vice President, Control Products & Solutions at Rockwell Automation.

Rockwell Automation is best positioned to bring Information Technology (IT) and plant floor technology (OT) together. The Connected Enterprise converges plant-level and enterprise networks, and securely connects people, processes, and technologies to drive digital transformation and enable smart manufacturing through operational intelligence, productivity and risk management.

The added capabilities and experience of the Kalypso team will further enhance Rockwell Automation’s ability to deploy technology and deliver even greater value to customers.

“We are excited to be joining Rockwell Automation to broaden its enterprise software consulting and information architecture offerings and enhance our ability to help our clients harness the power of digital innovation to discover, create, make and sell better products,” said Kalypso CEO, George Young.

The transaction is expected to close in the spring of 2020, subject to customary approvals and conditions, and will be reported in the Control Products & Solutions business segment.
Rockwell Automation to Acquire Avnet to Expand Cybersecurity Expertise

Rockwell Automation announced that it has signed an agreement to acquire privately held Avnet Data Security, LTD, an Israeli-based cybersecurity provider with over 20 years of experience providing cybersecurity services.

Avnet offers a full set of IT/OT cyber services and solutions ranging from assessments, penetration testing, network and security solutions, and training to converged IT/OT managed services.

“Avnet’s combination of service delivery, training, research, and managed services will enable us to service a much larger set of customers globally while also continuing to accelerate our portfolio development in this rapidly developing market,” said Frank Kulaszewicz, Senior Vice President, Control Products & Solutions at Rockwell Automation.

Cybersecurity is one of the fastest growing parts of Rockwell Automation’s services business. As the manufacturing industry has evolved and become more connected than ever before, legacy physical security strategies are no longer enough to protect production operations.

To help our customers develop, maintain, and evolve proactive cybersecurity strategies, Rockwell Automation provides a comprehensive set of services and solutions.

The extensive knowledge and experience of the Avnet team will support Rockwell Automation’s strategic objective to achieve double digit growth in Information Solutions and Connected Services by expanding our IT/OT cyber and network expertise globally.

“We are excited to join Rockwell Automation to further expand their already robust cyber offering,” said Igal Cohen, CEO of Avnet.

“We are continuing to serve our existing clients while expanding our reach to service a much broader range of customers. Our passion and mission have always been to help as many organizations as possible secure their data from internal and external threats.”

The transaction is expected to close in early 2020 subject to customary approvals and conditions, and it is not expected to have a material impact on Rockwell Automation’s 2020 financial results.

2020 Industrial Innovator of the Year

IoT Breakthrough recognizes Rockwell Automation for delivering breakthrough industrial IoT innovation with FactoryTalk InnovationSuite

The IoT Breakthrough Award program has once again honored Rockwell Automation. This time around, we have been named the 2020 Industrial Innovator of the Year in recognition of our innovation and commitment to connecting people, processes and technologies, and bringing the Connected Enterprise to life.

Last year, we were named as the 2019 Overall IoT Company of the Year.

Now in its third year, the IoT Breakthrough Awards program provides recognition to innovators, leaders, and visionaries from around the globe in a range of IoT categories. In total, there were more than 3,500 submissions competing for more than 75 awards in ten categories. The Industrial IoT Innovator of the Year award considers nominees from among all IoT categories, from smart home tech all the way through to industrial solution providers. We were chosen based on our latest “breakthrough” industrial IoT (IIoT) innovation, FactoryTalk InnovationSuite.

AP Customer Events Calendar

<table>
<thead>
<tr>
<th>Event</th>
<th>City/Country</th>
<th>Date</th>
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<tbody>
<tr>
<td>RAOTM India</td>
<td>Hyderabad, India</td>
<td>Postponed until further notice</td>
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<tr>
<td>Digital Transformation Forum</td>
<td>Delhi, India</td>
<td>15 May 2020</td>
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<tr>
<td>Industry Forum – Chemical Industry</td>
<td>Dae San, South Korea, Yeo Soo, South Korea</td>
<td>May 2020</td>
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<tr>
<td>RAOTM China</td>
<td>TBA, China</td>
<td>May 2020</td>
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<tr>
<td>TII Industry Leadership Forum</td>
<td>TBA, China</td>
<td>May 2020</td>
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<tr>
<td>Industry Forum – Pharma Industry</td>
<td>Seoul, South Korea</td>
<td>June 2020</td>
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<td>IoT &amp; AR Forum</td>
<td>TBA, China</td>
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* Each event is subject to change
For more details, visit: www.rockwellautomation.com/global/events/events.page
Whether you are a pharmaceutical, medical device or consumer packaged goods manufacturer, a traceability infrastructure that uses the latest technologies can help improve your time to market, manufacturing processes and compliance.

Welcome to the age of the smart industrial plant. This is where operations technology (OT) and IT converge; digital technology connects people, processes and things into a single, seamless unified infrastructure; and data helps us identify new, exciting opportunities. While more manufacturing companies are adopting new data-enabling technologies, becoming a true, smart manufacturing operation requires one essential element: end-to-end traceability.

As the requirements for industry regulations and costs of warranty and refund programs continue to evolve, manufacturers can differentiate themselves by taking advantage of direct and indirect benefits provided by a traceability system: improving processes, controlling the supply chain, minimizing defect risk, navigating regulatory challenges and improving customer service levels.

With a traceability infrastructure, you can gather insight-rich data that helps improve manufacturing processes, compliance and supply chain management.

Why do smart plants need track-and-trace capabilities?

Large and middle-sized manufacturers are facing mounting challenges. For example, product recalls are on the rise. The recall process in the food manufacturing industry is a highly expensive one, averaging more than $10 million in costs to cover activities such as communicating the recall across the supply chain, retrieving and handling the recalled product, investigating the event and implementing corrective actions to prevent reoccurrence.

Also, counterfeit and diverted goods costs companies $500 billion in U.S. trade, according to the World Customs Organization. And simultaneously, organizations are struggling to improve continually operational efficiencies to stay profitable and competitive.

Without complete end-to-end traceability, it can be difficult to stay ahead of the competition, meet deadlines, keep customers happy and comply with regulations.

As an essential part of Industry 4.0, complete traceability still ranks among the technologies industry companies are slow to adopt. However, the trend is pushing toward more companies embracing it.

In a study of manufacturing companies, LNS Research found that while only 23 percent had the processes and software in place to enable end-to-end traceability, around 60 percent stated they plan to have these processes and software in the next year. This suggests manufacturers recognize the importance of product traceability.

Discrete part traceability

There are different ways to approach traceability. Discrete part traceability — the use of individual component-level marks — is typically the most effective at enabling end-to-end traceability, because each part can be linked within a final assembly.
A number of popular methods can create these discrete part-traceability marks. Direct part marking is the best method to verify readable marks are permanent and durable. Other indirect methods, such as ink jet printing and labeling, are commonly used because they offer low initial costs.

Among direct part-marking equipment, laser and pin (or dot-pee) marking systems are the most popular, capable of creating permanent marks quickly on a variety of materials. Direct part marking with laser or dot-pee equipment can create durable barcodes that connect the part to a database, allowing it to be tracked through plant-level operations to final assembly, and then traced for the life of that product.

To succeed at end-to-end traceability with discrete part marking, it is important to mark components at the soonest possible moment in the manufacturing process. This lets you see the entire lifecycle of each part and maximize the value of your data, so you can spot production issues or trends and make proactive improvements.

Traceability: From Component to Final Assembly
Traceability, the process for locating components and their appropriate history throughout their life, is an essential part of smart manufacturing. By digitally connecting individual components to the subassembly, major assembly and final assembly, manufacturers can:

- Track parts through the manufacturing process.
- Record the history of part’s activities.
- Create a genealogy of part relative to main part number and sub-assemblies.
- Achieve the benefits of end-to-end traceability.

‘While only 23% of manufacturing companies had the processes and software in place to enable end-to-end traceability, around 60% planned to have these in place in the next year’

Digitization improves time-to-market
Speed to market is an increasing concern for biotech and pharma manufacturers as product moves further along the pipeline from discovery through clinical trials. As the saying goes, ‘time is of the essence’ – this is particularly relevant in the highly competitive life sciences industry.

Laboratory data is essential to commercial production. Consequently, making lab or pilot plant data easily accessible to digital automation systems is critical. A modern DCS that can scale from user-friendly, software systems that are right-sized for labs to completely integrated plant-floor solutions can help.

Basing digital transformation on a scalable, modern DCS delivers significant benefits – in both the lab and on the production floor. A modern DCS can use analytics tools to convert raw data into actionable information that can impact operational and equipment efficiency from the lab through production.
For example, the system can analyze thousands of data points in a lab to quickly uncover correlations and causations that may otherwise remain hidden. On the plant floor, the modern DCS can deliver batch and equipment analytics to help keep systems running optimally.

Most critically, a modern DCS provides an end-to-end manufacturing solution that lays the foundation for electronic batch records (EBR), validation and regulatory compliance.

**Data integrity and compliance**

The move to an EBR system has been beneficial for most biopharmaceutical producers. By replacing paper-based workflows with computer-based workflows, they have reduced the risk of human error and sped up compliance processes.

However, EBR systems can do far more than digitize paper-based workflows and recordkeeping.

When integrated into a scalable manufacturing execution system (MES), EBRs become more dynamic and can support your operations in new ways. This is especially true as you move your operations toward a Connected Enterprise, in which your production and business systems are fully connected and can share information seamlessly.

When an MES with EBRs is brought into a connected ecosystem, it can begin to access enterprise-wide information, deliver role-based instruction to workers, and provide exception-based reporting. This can help speed up your time-to-market, cut costs in multiple areas, and ease or even improve your demonstrated compliance.

An MES that offers modern and dynamic EBRs can help accelerate time-to-market in multiple ways. In the words of one pharma producer, “An EBR solution is the GPS of manufacturing operations. It guides the user to the desired destination, finds the shortest trip, alerts one to dangers, and feeds them back in real time.”

Quality Assurance (QA) teams can use an EBR’s review-by-exception functionality to spot deviations much faster than scanning every record line by line to find them. This can speed up documentation review times and reduce how long a product must sit in a warehouse waiting to be released. It also can improve batch accuracy and consistency.

In addition, real-time information access creates opportunities to speed up processes throughout the production cycle. For example, gauge data can be collected automatically versus requiring a worker to physically walk to each gauge and record their readings. The ability to collect and review process information also allows you to identify and mitigate unnecessary tasks, such as redundant material checks.

Furthermore, the time savings only become greater in a Connected Enterprise. The ability to connect your EBR system to mobile devices. For example, it can give workers faster and more convenient access to information anywhere on the plant floor.

### Serialization for end-to-end supply chain

Whether you are a pharmaceutical, medical device or Consumer Packaged Goods manufacturer you are now required to track and trace products across the supply chain. In fact, a number of countries around the world are in the process of rolling out serialization-based anti-counterfeiting regulations. These include the European Union’s Falsified Medicines Directive, the United States’ Drug Supply Chain Security Act and China’s electronic drug supervision code requirement.

Serialization uses a numeric or alphanumeric code known as a unique identification (UID) to realize full **track-and-trace capabilities** of a product throughout the supply chain, from its manufacturing origin through distribution channels and down to the point of sale. Production, transportation and point-of-sale event information are recorded and stored in a central database. This allows a product to be authenticated as legitimate through something as simple as a quick barcode scan, and permits the complete product event history to be reviewed or audited should an issue arise.

While serialization regulations vary by country or region, some general requirements that pharmaceutical manufacturers are expected to comply with include:

- The ability to generate, acquire and manage a UID for each saleable item.
- Linking package-level serial numbers in parent/child data relationships (for example, pallets to cases, cases to cartons or cartons to saleable items).
- Storage of UID information in a secure database that can be shared with trading partners.
- Validation that serialization data matches the physical product received.
- Confirmation that products have complete and accurate documentation.

While some manufacturers may opt to develop their own customized serialization system in an effort to harmonize the system with their existing equipment and processes – there are some significant limitations with this approach. It can lead to
support issues, parts shortages and knowledge-transfer problems in the long term. The time and effort needed to design, test and commission a custom system can also be costly and disruptive to operations.

Pharmaceutical manufacturers should instead consider basing their system on a modular and scalable off-the-shelf control and information platform that can be easily integrated into their existing lines. Specifically, by tapping a software platform that also offers MES and EBR capabilities, a serialization system can help address global serialization requirements, including necessary data capabilities and high-speed device management of serialization components – all while minimizing production interruptions or validation burdens.

Additionally, a serialization system that uses an Electronic Product Code Information Services (EPCIS)-certified, cloud-based server can provide centralized UID generation, management and storage, as well as achieve interoperability with manufacturing and business systems. The cloud-based server is the central communications hub for supply chain partners and provides mobile connectivity, so product authentication can flow all the way down to the consumer level via tablets or smartphones.

Now, thanks to advanced industrial connectivity, data aggregation and automated analytics capabilities, manufacturers can exact more value from more disparate data sources faster than ever before.

Leveraging a secure IIoT infrastructure, the latest capabilities can quickly connect all data that’s important on an asset or a line – and immediately monitor performance as well as make predictions about that performance.

Choosing technologies that give your workers better visibility to process parameters in real time is one way to improve workflows. For many biopharmaceutical companies, the next step is engaging in other digital tools that help workers use data and analytics in smarter, more impactful ways.

Specifically, augmented reality (AR) can be a game-changer that not only enhances workforce management, but also improves quality, yield and time-to-market.

In fact, more companies are beginning to use AR to support operator-driven activities. For example, here’s one-way AR can dramatically improve situational awareness in your cleanroom. Using a mobile device and AR app, your operator can focus on a piece of equipment and view critical parameters superimposed on the machine. No HMI required.

This same technology that makes monitoring equipment easier can also provide maintenance workers with detailed, visual and interactive instructions – at the site of repair.

But how do you decide what digital technologies can best enable the workers in your plant? A good place to start is with the workforce challenges you understand best. Chances are, you don’t need complex analytics to determine what those challenges are – you probably encounter them every day.

Then, focus on deploying AR or other technologies that offer the best opportunity for short-term wins that deliver a measurable return. And that can scale across multiple applications and plants to establish a smart industrial plant.

Team up with technology
The Industrial Internet of Things (IIoT) continues to advance at a rapid rate. Pharmaceutical companies are transforming the industry by using smart, connected devices, analytics, and machine learning to improve drug manufacturing processes and deliver better patient outcomes.

Pharmaceutical companies have also dramatically increased the use of smart technology and automation in their production facilities to improve drug quality and speed innovation. And many have streamlined operations with modern MES and EBR systems.

But as the number of intelligent devices has proliferated, manufacturers have struggled to use the Big Data generated across the plant floor and beyond in truly transformative ways.
New Facility for Pistachio Production

Today, the U.S. is the world’s second-largest pistachio producer – and worldwide demand continues to grow.

Once reserved for royalty, pistachios have become a global snack sensation. People are hungry for the green nut because of its unique flavor, along with its natural health attributes. Like almonds, walnuts and other nut varieties, pistachios are packed with protein, antioxidants and fiber.

Wonderful Pistachios is a leader in satisfying worldwide demand for this tiny treat. The company is based in California’s central San Joaquin Valley, the heart of America’s pistachio industry. To flourish, the trees require cool winters and long, hot summers with low humidity. This largely limits pistachio production to three primary places on the planet – Iran, Turkey and California.

Today, Wonderful Pistachios alone accounts for 50 percent of the global pistachio market and 65 percent of the domestic sales. To continue to grow, Wonderful Pistachios needed a new facility where it could convert more raw fruit into the roasted – and usually salted – snack craved by consumers around the world.

Hulling harvest
The first stage of the production process – hulling – is time-sensitive. The nuts come off of the trees encased in a protective outer layer, which must be quickly removed to prevent spoiling. That’s why Wonderful Pistachios built the new facility in Firebaugh, California, close to the pistachio groves.

The hulling section of the new facility needed to be ready in time for the harvest, which begins in September and lasts eight to 10 weeks. After hulling, the nuts can be stored for the year-round processes of sorting, roasting, salting and packaging. Company managers planned to complete those subsequent sections once the hulling area was up and running.

They projected that more than 4.8 million pounds of pistachios would be hulled each day of the harvest. To handle such a huge volume – eventually across the entire production process – the new facility required major infrastructure investments, including a 30-megawatt transmission substation and miles of natural gas pipes.

With that groundwork under way, the company began planning the design of the hulling and production lines.

To manage the entire process, the Wonderful Pistachios team needed a control solution they could implement quickly, and later
expand to include critical stages, such as pasteurization and precise roasting.

Precise pistachio control
The choice of a control solution collaborator was straightforward for the project team since they’ve worked with Rockwell Automation for over 20 years. Almost 15 years ago, Wonderful Pistachios began standardizing on the Rockwell Automation control platform, including motor control centers (MCCs).

“In our industry, the turnaround time for projects is very fast,” said Don Kloster, electrical engineering manager for Wonderful Pistachios. “The Rockwell Automation control platform allows us to order and install controllers and MCCs, and start production in a few weeks.”

To control the 500 motors powering pistachio production at the new facility, Kloster and his team designed the process, confirmed their motor control needs, and ordered Allen-Bradley CENTERLINE 2100 MCCs from Rockwell Automation in bulk.

The smart MCCs, integrated with Allen-Bradley PowerFlex 70 and PowerFlex 525 drives from Rockwell Automation, help provide flexible control of production. The MCCs include preconfigured software that gathers real-time production and diagnostic data, trends, component history, wiring diagrams, user manuals and spare parts.

The MCCs provide significant startup time savings compared to Wonderful Pistachios’ previously in-house built panels. As always, the MCCs were fully inspected before arrival, easing installation for the Wonderful Pistachios team.

In addition, the MCCs’ centralized control and intuitive add-on instructions help provide a lower total cost of ownership compared to the in-house panels by reducing downtime and troubleshooting time. The team can easily make changes in the field, and quickly and safely move MCC buckets as needed.

The MCCs communicate the production and diagnostic data via an EtherNet/IP network to Allen-Bradley ControlLogix programmable automation controllers (PACs) from Rockwell Automation.

Facility operators can access the data directly from the controllers and pull historical production reports within an hour. That data allows them to quickly determine – and if necessary, adjust – production variables, such as dryer temperatures and roaster speeds. With the EtherNet/IP network connectivity, Wonderful Pistachios can monitor all systems remotely and quickly respond to any issues.

In addition, the open nature of the control platform and the EtherNet/IP network allowed the Wonderful Pistachios team to easily install and connect OEM-supplied equipment. The team purchased dryers, pasteurizers and other equipment without controls, and integrated them into the ControlLogix platform.

Operational efficiency
After the MCCs arrived, the production line was ready to go live within three weeks, just in time for the fall harvest season. Pre-processing then started the following year, which exceeded volume estimates by 15 percent.

With the control system’s reliability and monitoring capabilities, the new facility runs lean.

“Well, 100 people were required to run a facility that would produce 1.5 million pounds per day,” said Paul Hughes, general manager of capital projects at Wonderful Pistachios. “At the Firebaugh facility, 10 people onsite manage production of 5.6 million pounds per day during harvest season.”

By 2023, the facility will have finishing-processing capabilities, and the entire buildout will be completed by 2025.
The global pharmaceutical industry is facing increasing pressure to get drugs to market faster, while maintaining compliance and data integrity. The demand for targeted, smaller volume pharmaceuticals and personalised medicines is growing and therefore, driving operations away from large-scale bulk production to multiproduct facilities that require complicated batching, frequent changeovers and meticulous tracking.

Among the enabling technologies underpinning the ongoing digital transformation in industrial process control within pharma and food production, MES software is one of the fundamental building blocks. MES is capable of standardizing production processes, while integrating them and rendering them more homogenous, with a positive impact on corporate organization and employee productivity, all without any negative effects on production processes.

**MES improves pharma compliance**

Zhejiang Medicine Company (ZMC) is a global bio-pharmaceutical manufacturing and sterile-packing industry expert, an innovative pharmaceutical model in China’s export business. The company recently invested in a new MES system to more efficiently and cost-effectively produce antibiotic on FDA’s drug-shortage list.

The sterile powder for injection project was Zhejiang Medicine Company’s first MES application pilot project. To meet the strict regulatory requirements in Europe and America, Zhejiang Medicine Company chose Rockwell Automation as its strategic partner, using PharmaSuite to establish a Batch management as the core of the MES system to ensure compliance and efficient production.

Replacing traditional paper records and document management, PharmaSuite helped achieve the goal of 100 percent paperless production. After the PharmaSuite production order is issued, the operator picks material from the staging room. By using digital labels, PharmaSuite helps to achieve traceability and prevent mistakes or cross contamination. The digitising of the manufacturing process, coupled with the integration of the warehouse management system and laboratory information management system, enables ZMC to produce electronic batch records.

Through integration of process automation systems, PharmaSuite captures real parameters and generates real-time reports. Application of Rockwell Automation mobile solutions facilitates the scanning of digital label of equipment and material and uploading the related report to the MES by using global tablets.

PharmaSuite manages the production equipment and intermediate fault equipment status by scanning the digital labels on equipment or material, PharmaSuite confirms the correct equipment to be used and ensures the production process is under control. Real-time alarm monitoring of the production process ensures that abnormal situations can be attended to in a timely manner.

The PharmaSuite recipe design function is compliant with the ISA-88 standard providing a modular, graphical and configurable
solution. Using the latest virtualization technology, the MES and SCADA systems are three physical servers – greatly reducing hardware and maintenance costs while improving the IT management efficiency.

PharmaSuite accurately and completely stores the real-time data and production process information in the database and creates a back-up. Access management and audit trail capability helps to ensure that all data creation, entry and modification are controlled and traceable.

Replacing the traditional paper records and documents management, PharmaSuite achieved 100 percent paperless during the production process. The new solution also enhanced quality by automating data handling, reducing the risk of errors such as misinterpreting or incorrectly entering data. In addition, the PharmaSuite MES reduced costs. These cost savings include five to 10 percent labor savings; 46 to 75 percent reduction in batch product review cycle time; and 50 percent reduction in management review cycle time.

The new MES enabled ZMC to thrive in a highly competitive global pharmaceutical industry while remaining compliant in an ever-tightening regulatory environment.

Digital transformation: Endusers’ perspectives

At a recent round table discussion in Italy titled “The Digital Transformation: Challenges and Opportunities for the Manufacturing Industry,” Rockwell Automation was able to discuss the challenges of digitalization of production processes. And, above all, how do they attribute new technological and business values to these challenges.

Luca Pezzano from IBI Lorenzini, Alessia Crivelli from Farmaceutici Formenti (Gruppo Grünenthal), Davide Cascella from Idea 75, Tiziano Petrucciani from Molteni Farmaceutici and Sigfrido Velicogna from Ibsa Farmaceutici Italia – in collaboration with the Rockwell Automation Italy team – are working in the direction of 4.0 production systems, through the implementation of MES, serialization solutions (based on standard PharmaSuite software) and process technologies in their various facilities across the country.

MES software was defined as one of the fundamental building blocks by Idea75 and Farmaceutici Formenti (Gruppo Grünenthal). In Molteni Farmaceutici and IBI Lorenzini, serialization was first deployed as a regulatory requirement but was then progressively transformed with the adoption of PharmaSuite software from Rockwell Automation in order to implement new process management practices within their facilities – maximizing and optimizing the collection and analysis of data along the entire supply chain.

The importance of the integration, management and integrity of data along the entire supply chain is a fundamental aspect for IBSA Farmaceutici Italia too.

In this and other examples, process technologies, logical control of production lines and environmental condition monitoring must guarantee maximum stability and safety along with scalability and improved interactions with line operators.

For pharmaceutical producers, it is essential to have stable and scalable platforms that not only work together to prevent data loss, but also facilitate data analysis and comparison as quickly as possible.

Based on the feedback from these end users, it is obvious that those who are seeking to create Smart Industry 4.0 production processes must also deploy ever more integrated, rapid and slim-line data management using “cognitive” automation process.

As these Italian end users have confirmed to us, in the world of Industry 4.0, there are and always will be improved forms of standardization and open, integrated platforms.

To continually drive this digital transformation, it is therefore necessary to invest in software and technologies that render data and information more useable and transferable to those who truly need them, with a closer connection between IT and OT, providing support for decisions without precedents.

Above all, it’s important to remember that digital transformation involves three fundamental elements: people, processes and technologies.
A large global brand snack manufacturer suffered excessive production losses and inferior financials at one plant for far too long. Low yield, poor dough quality and unplanned downtime all were created by the problematic batch control system for its 12 mixing stations and ingredient delivery systems. To complicate things, the existing code was inaccessible and “locked-down” as a precaution of the proprietary software. Frustration mounted daily as everyone knew what the problem was but recognized the implications of untangling it while maintaining the business’ pace.

They seemed to have only two options. One, do nothing and continue to suffer the ills of the aging system, poor production, inefficiency “tax” and lack of flexibility to upgrade. Two, shut down each of the 12 mixing stations one by one over a long and drawn-out transition period, replacing and testing code in each of the 14 individual programmable automation controllers (PACs) and hope, after several months of change, that production for the entire plant would improve.

But what if there were a third option? What if all the code for the 14 PACs, all the human-machine interface (HMI) stations and a new batch management solution could be written and tested on a running system — offline?

Replacing locked code
The existing batch control system had been installed several years earlier and contained locked-down, proprietary code that still had bugs; the plant couldn’t support or modify the system on its own. The snack baker had to rely on a supplier who was tough to schedule, was hundreds of miles away and came at a high cost.

Replacing locked code presented its own challenges:
1. With no documentation for the existing system, Polytron and the snack baker had to redefine how the system was operating and reverse engineer all the code before starting on the new code.
2. The system integrator’s team of engineers and the plant’s batching systems experts worked side by side, tapping into the operations supervisors’ expertise and knowledge to verify the appropriate technology transfer was applied so the new code definition captured critical information.
3. Creating a detailed description of how the new FactoryTalk Batch system from Rockwell Automation would operate was essential to making sure the snack baker wouldn’t lose time retraining its operators on a completely new system.
4. Using the detailed description, the existing ControlLogix processors were reprogrammed using PlantPAx Library of Objects for standardization of code.
5. The FactoryTalk View HMI screens had to look and operate the same. To accomplish this, existing HMIs were replaced with thin clients using ACP ThinManager and FactoryTalk View. Sequences had to work just as they
did previously. And all the batch recipes had to be followed precisely to meet strict food quality standards.

6. The existing Windows PCs in the facility were replaced with thin clients using ACP ThinManager.

7. Integration with each of the subsystems had to be rewritten to flawlessly integrate each critical system into the entire solution.

Another Polytron team created a simulation model of the plant’s entire mixing system: 12 mix stations and almost two dozen dry and liquid ingredient delivery subsystems. All in all, more than 700 devices were modeled. When connected to the PACs, HMIs and new batch management solution, the baking company had a fully operational batch system that could be tested offline.

Polytron used simulation software with PlantPAx to simulate IO drivers using EtherNet/IP and OPC specifically made for the Rockwell Automation Logix and RSLogix Emulate automation platforms. The team could test the new control system with a dynamic, realistic simulation of their plant.

The team spent days verifying recipes and operating scenarios, manual and automated sequences and even potential faults and recovery steps. After participating in some of this extensive testing, the plant manager felt confident in shutting down the plant with little risk of missing the start production date.

New dough flowing
The baking company extended its already planned Thanksgiving shutdown by just one day. Polytron had to deliver and have the plant back in production Monday morning.

The planning, modeling and testing paid off. According to a representative from the baking company, “The ability to run a full precheck was invaluable and eliminated the guess work and uncertainty at start-up. The new code was introduced into the system in a seamless fashion, which resulted in an on-time start-up.”

By nine o’clock Monday morning, only five days later, all the systems had been cleaned, and new dough was flowing.

The completely new batch management and control solution met all expectations: no unplanned downtime, technicians now had access to examine code at will, and quality specifications were on target.

- Even better, downtime decreased by 25 percent and dough quality improved 30 percent, meaning no bad batches.
- Operators were up and running in no time. One even asked a week after the programs had been switched, “So, when are we going to make the changes to the system?”

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Simplifying Biopharmaceutical Production with Single-Use Systems

Biomanufacturers are looking for technologies that can make their production systems more flexible and efficient – single-use technology can help

The advancements in single-use and mobile technology have made biopharmaceutical production more flexible and profitable. Antibodies, proteins, vaccines, cell therapy, and gene therapy are all examples of molecules that can benefit from being manufactured in fully single-use, end to end processes.

Single-use systems help to lower overall operating costs by reducing the time required to perform cleaning and cleaning validation – decreasing analytical quality control costs and improving facility utilization time. They also allow manufacturers to more easily and quickly change over from one product to another, or from one batch to another batch.

Given the significant costs involved when developing and producing biopharmaceuticals, biomanufacturers are looking for technologies that can make their production systems more flexible, scalable and quicker to implement.

As a result, single-use technologies have evolved to become a mainstream approach for achieving productivity. From single-use bioreactors and disposable chromatography columns, to complete single-use workflows and biomanufacturing facilities, GE Healthcare has been at the forefront of single-use innovation.

Streamlining process control and automation

GE Healthcare Life Sciences has been collaborating with Rockwell Automation to streamline the process controls and automation of its bioreactors, FlexFactory production lines, and shipping container-based, clean-room units it operates worldwide.

"Biotechnologies and biopharmaceutical processes affect all of our lives—from removing lactose from milk to improving bread and cheese to creating flu vaccines, pregnancy tests and diabetic therapies. We’re also using them to develop a protein that can help fight lung cancer by making cancer cells a target, which allows the body’s natural white cells to attack those cancer cells, while leaving regular lung tissue unharmed," said Kevin Seaver, general manager, Bioprocess Automation and Bioprocess Digital, GE Healthcare. "It’s estimated that by 2022, biopharmaceuticals will make up about 30 percent of the prescription drug market."

Both upstream and downstream manufacturing processes benefit from single-use systems, particularly when manufacturers are producing buffer solutions or cell-culture media. Furthermore, bioprocessing applications include large-molecule and small-molecule processes. So, while traditional medicines like Prozac are compounded from molecules with less than 60 atoms, biopharmaceuticals like insulin have molecules with hundreds of atoms, monoclonal antibodies have more than 10,000 atoms, and flu vaccines have more than 100,000. This complexity makes development and upstream and downstream production of these newer biopharmaceuticals increasingly complex and costly.

"Because of these expenses, there are efforts to develop ‘bio-similar’ medicines that cost less. Plus, when patents expire, other manufacturers start producing them," explained Seaver. "Other drivers of change in the biopharmaceutical market include personalized medicine, localized manufacturing, and other new technologies."

Seaver added that the industry is challenged by downward price pressures, time-to-market pressures, and adapting quickly to changing market demands. "For example, cellular therapies have only been available for four or five years, and now gene therapies are quickly emerging," he explained. "However, because it can take seven years and $1.2 billion to $1.7 billion to develop a new drug, pharmaceutical manufacturers need to build their plants four or five years ahead of time. Consequently, if we can implement a single-use bioprocess facility in just one year or 18 months, it allows our biopharmaceutical manufacturers to put off decisions to go into production, which can save money and time, and avoid a lot of frustration."

Collaboration yields benefits

Seaver reported that GE Healthcare’s 30-year collaboration with Rockwell Automation has already yielded many benefits, but their latest collaboration on optimizing the bioreactors in its FlexFactory lines, which can be deployed in its KUBio prefababricated shipping-container clean rooms, have even more potential benefits.

"When we run a typical 2,000-liter bioreactor, there can be 300 pipes, lines and connection that must be made every time we run a batch," explained Seaver. "Developing an application like this can start small with one type of process control, but it may need an entirely different, more expensive type of control when we scale up. We needed a better, more consistent way to scale up, and this is another reason why we’re partnering with Rockwell Automation."

As a result, biomanufacturers are looking for technologies that can make their production systems more flexible and efficient – single-use technology can help
Seaver added the pharmaceutical industry wastes about $50 billion per year in inefficient manufacturing, and so biopharmaceutical players are trying to unlock isolated data that can’t be accessed, reduce the substantial time spend on gathering and cleaning data, and at the same time protect against cybersecurity probes, intrusions and attacks.

"One FlexFactory generates about one terabyte of data per day," said Seaver. "So we also need to waste less of that data, and do more with it."

**Choosing the right technologies**

GE Healthcare’s strategy for addressing these multiple challenges in its biopharmaceutical application is called "Figurate," and it includes taking advantage of automation, flexibility, efficiency and confidence. Seaver added that automation’s benefits for bioprocesses include:

- Optimized uptime due to system redundancy;
- Reduced maintenance and training by using a common framework;
- Yield optimization with centralized data trending and alarming; and, 
- Reduced regulatory exposure with GAMP-proven and CFR-compliant designs.

"Whenever we heat, agitate, add air or otherwise process these $1-2 million batches, we need redundant servers and redundant power that can swap over if one system fails," added Seaver. "These solutions also help with achieving common training and reducing our regulatory exposure."

To develop and put its Figurate program in place, Seaver reported that GE Healthcare adopted Rockwell Automation’s PlantPAx process system and software and GE’s Unicorn software to automate its bioprocess equipment; made their data available by integrating it with applicable manufacturing execution system (MES) applications and electronic batch records (EBR); and also provided it to cloud-computing services.

GE Healthcare’s FlexFactory lines include its media and buffer preparation, cell culture production, harvesting, purification, viral clearance, sterile filtration and bulk formulation processes. All of these can be combined in modular KUBio clean-room shipping containers, and GE Healthcare presently has 63 of these modular production facilities running worldwide.

"We’re able to deliver a FlexFactory inside a KUBio in one year to 18 months because we can do all testing, electronics, pre-verification and pre-validation, and have these units ready to go," said Seaver. "This allows our manufacturers to adjust deployment as needed."

Seaver added that benefits from its Figurate program also include 10-20 percent increases in production throughput, availability and production employee efficiency, as well as 5-30 percent decreases in energy use, scrap material, batch release time, maintenance, and downtime investigations.

To integrate these gains even more firmly, Seaver reported the GE Healthcare is also working with Rockwell Automation and PTC to create augmented reality (AR) versions of these tools. For example, its operators can use AR image capture, display and manipulate images that show pH, dissolved oxygen, carbon dioxide, control cabinet performance and other crucial parameters more quickly. PTC Chalk software even allows operators and supervisor to mark up images to point out details that need to be addressed.

**Staying ahead of the innovation curve**

Billy Sisk, Life Sciences Industry Manager EMEA, Rockwell Automation, explains that there’s been a large increase in the level of complexity in the biopharma manufacturing industry.

Rockwell Automation has developed solutions for the single-use market to help increase the speed to market for end users, reduce risk and increase regulatory compliance. We do this through our technology.

In a typical single-use environment, everything is built around EtherNet/IP. We adopted EtherNet/IP as part of the single-use solution because it allows for equipment mobility and the addition of new and different equipment.

AR can be a game-changer for biopharmaceutical companies that not only enhances workforce management, but also improves quality, yield and time-to-market.

In fact, more companies are beginning to use AR to support operator-driven activities. New advancements in AR and artificial intelligence (AI) can guide operators through a sequence of tasks and then verify that the correct connections were made – all from a handheld device.

Furthermore, that verification can be stored in the electronic batch record (EBR) – along with supporting pictorial or video documentation.
Modern Batch Solutions Help Solve Today’s Market Challenges

Addressing today’s batch manufacturing challenges require a modern approach – leveraging the latest technologies to uncover new competitive advantages

The world is changing and as a result so is manufacturing. Today’s dynamic manufacturing industry presents multiple challenges: control costs, mitigate risks, and seize every opportunity to gain a competitive edge. For many companies, this means production areas must drive out inefficiencies that are holding them back with bold approaches. This requires informed decision making, data-driven exposure of inefficiencies, and a tremendous amount of collaboration. Indeed, organizations that embrace today’s rapidly advancing technologies stand to uncover new competitive advantages.

As companies tackle these challenges, they must review new and modern approaches to established processes traditionally used in batching applications. Facilities that are constrained by rigid systems cannot adapt to changing equipment conditions over time or take advantage of common workflows as they scale procedures from pilot areas to volume production.

Modern batch delivers value
Each producer has diverse batch processing needs from simple, single-vessel, single-product production to complex production systems. While batch processing needs differ between manufacturers, their focus remains the same – to make better informed business decisions.

Advancements in technology can add opportunity and risks from both internal and external sources that expand with each new connection of smart things. With each opportunity comes added threats capable of disrupting batch operations, safety, productivity, and the ability to help protect assets, machinery, and information. A modern batch system must utilize a design for security approach that secures production systems and intellectual property yet helps the plant meet uptime expectations.

The system must simultaneously make data available for continuous improvement analysis while protecting the integrity of data. This data can then be leveraged in regulatory and quality control reporting. The Connected Enterprise fully incorporates the ability to both capitalize on opportunities and protect against risks through a modern batch system.

In fact, a modern batch solution is a key component of The Connected Enterprise. It helps you view real-time data on manufacturing processes, compare performance across plants, quickly scale production up or down, and manage energy consumption. A Connected Enterprise promotes seamless collaboration and integration enabling the power of real-time data to help improve productivity.

Making it scalable
Scalability is not just about supporting technologies that possess the ability to control both small and large systems. It is about understanding the need and applying the right technology rather than starting with a product and trying to use it for all solutions. A scalable offering of solutions can result in more productive operations by lowering the engineering and maintenance costs.

In some instances, server and network infrastructure and their associated security needs are a barrier to apply batch software on small or standalone systems. In the absence of this infrastructure, users should still be able to implement established industry standard control through integrated state model and state propagation control. Conversely, to simply drive batch management models down to the controller, which may provide some benefit, may not be the right solution either.

The benefits of a supervisory batch management system for complex architectures cannot be overstated. When complex architectures result in control being distributed among several units in multiple controllers, a centralized system can provide the most logical and consistent coordination of the platform.

Advanced control technology
Control systems in a modern batch system must be designed so that the responsiveness can be maximized when the process calls for it. Making allowances for underperformance in areas such as the latency of a state transition ultimately costs time, product quality, and overall profitability. In many cases it is preferred to move the sequencing control closer to the physical equipment to better control sensitive steps, maintain security and improve the reliability of the system.

The processing power of today’s controllers provide unprecedented speed and functionality compared to their predecessors. There are many applications that try to leverage these controller characteristics for rapid response or high available performance architectures in a batch process. A modern batch solution must be able to take advantage of these capabilities for phase and state transition control – without abandoning proven technologies and methods that were traditionally only available with server-class systems.
Find your competitive advantage

The changing expectations of today’s workforce with the fast-moving pace of technology presents a shift from rigid technology specialist towards operational generalists. Today’s workforce demands the easy adoption of tools that have intuitive workflows. A modern approach must not only address these challenges with technical capabilities but do so while maintaining the security, integrity, and reliability of the production system.

Meeting constantly changing consumer demand requires the ability to intuitively manage recipes and workflows and provide access to critical production information. A modern batch system can help you find your competitive advantage by: Reducing waste and energy use; Improving yield; Optimizing consumption of materials; Enabling fast and efficient product changeover; Drive quality improvements.

Advances in batch technology provide the capability to improve workflows, reduce procedural steps in a task, and simplify configuration. This applies to both the design and runtime environments. The reuse of code templates and software-based change management tools are no longer options or perks, but an essential part of the batch control process. The Rockwell Automation FactoryTalk Batch software offers an intuitive and scalable, browser-based interface that adapts across smartphones to tablets and PCs. Users can access real-time information and interact with their process from the plant floor to the production office through a consistent user interface.

Reduced time to execute routine tasks benefits everyone in a production environment by using mobile devices. Operations must no longer be bound to control rooms or fixed terminals to execute activities such as alarm acknowledgement, manual data entry, or basic equipment operations. To truly maximize system performance, the actions and activities of people interacting with the system must also be optimized. Gains in productivity may take many forms such as by using scalable graphics that are device independent, simple user interfaces that reduce the number of clicks required to navigate, and the support of multiple languages a global workforce.

Manufacturers depend on batch operations for flexibility and performance that can be tailored to meet specific business and production goals – quality, delivery and, most of all, responsiveness can be your competitive advantage. The Rockwell Automation batch portfolio is uniquely positioned to leverage multiple technologies to provide a flexible control environment to help you meet your demands for increased production and improved yields. It is time to rethink what a modern batch system can do for you.

‘It’s time to rethink what a modern batch system can do for you’
New Fanless Kinetix VPC Servo Motor Delivers Energy Savings

Printers and other industrial operators can improve their energy efficiency and reduce machine complexity with a new fanless version of the Allen-Bradley Kinetix VPC continuous-duty servo motor from Rockwell Automation.

The new motor uses the same interior permanent magnet technology as the original fan version to help operators achieve better performance and higher energy efficiencies.

The new motor achieves IE5 energy efficiency ratings. Additionally, by removing the fan the motor further reduces wiring and components, saves even more on energy costs, and is ideal for applications like printing that are sensitive to airflow disturbances.

The VPC family of motors reduces torque ripple, which translates into smoother roll-to-roll web-handling processes critical for high-quality printing, tensioning and other application-specific tasks.

New Motor Protection Circuit Breakers Offer Space, Time and Cost Savings

Engineers can use the new Allen-Bradley 140MP Motor Protection Circuit Breakers from Rockwell Automation to simplify motor protection.

The circuit breakers, also known as motor-protective switching devices, can be mounted on Allen-Bradley 100-C or 100-K contactors to create a two-component motor starter. The devices provide magnetic short-circuit protection and thermal-overload protection up to 32 A, and interrupting ratings up to 100 kA at 400 V.

The circuit breakers are enabled by UL approval for use in group installation. This type of installation can reduce panel space, installation and wiring time, and overall costs by eliminating the need for individual branch short-circuit protective devices for each motor circuit.

Outside North America, these devices meet the IEC 60947-4-1 requirement for motor protective switching devices. They also meet the IEC 60947-2 requirement for circuit breakers.
New Signaling Devices Meet Global Ratings, Certifications for Hazardous Locations

New Allen-Bradley 855X Hazardous Location Signaling Devices can help industrial operators meet the latest global hazardous-location ratings and certifications. The signaling devices include horns, beacons and combination horn-and-beacon units.

In most cases, these new 855X devices (Series B) are drop-in replacements for the original 855X devices (Series A). However, the redesigned portfolio also offers additional advantages:

- Triple certification in a single unit: The new 855X products are all cULus, ATEX/IEC EX and Class/Zone certified, so they can be applied globally.
- Easily customizable to application needs: The new 855X products feature two conduit entry options for flexibility in power connections to suit the application requirements. The beacon’s color can be changed quickly and easily in the field by simply replacing the beacon lens with the desired color, without affecting the device’s ingress protection rating.

The new 855X stand-alone multifunction LED beacon and combination radial sounder/LED beacon feature rugged yet lightweight, corrosion-free construction. They also have ingress protection certified to UL Type 4/4X/13, IP66/67, making them suitable for wet and harsh industrial environments in the oil and gas, food, paper, mining and wastewater-treatment industries.

New PUR and PVC Single-Cable Options Ease Installation, Maintenance

Industrial operators can speed up installation times and reduce parts inventories by using a single cable to provide both power and feedback between drives and motors. And now, operators have more single-cable options at their disposal with the release of new Allen-Bradley 2090 single cables that include halogen-free PUR and PVC options.

The halogen-free options are ideal for applications like food and beverage, where users want to reduce exposure to toxins, and for applications looking to meet IEC 60754-1.

The cables are designed for systems that use Kinetix 5500 and 5700 servo drives, Kinetix VP-Series servo motors and Kinetix VPAR electric cylinders. The cables also have a smaller bend radius for continuous-flex and static applications and are available in a wide range of cable AWGs, types and connector options.

PowerFlex 525 AC Drives

PowerFlex 525 AC Drives feature an innovative, modular design to support fast and easy installation and configuration. This next generation of compact drives offers embedded EtherNet/IP communications, USB programming, and standard safety features.

PowerFlex 525 drives, which offer a power rating of 0.4...22 kW (0.5...30 Hp) with global voltage classes of 100...600V, provide a variety of motor control and flexible mounting options. PowerFlex 525 AC drives operate at temperatures as high as 70 °C (158 °F), and they are ideal for applications such as conveyors, fans, pumps, and mixers.

PowerFlex 525 drives now have the option of permanent magnet motor control that can help improve energy efficiency and reduce related costs. The higher power density provided by permanent magnet motors often results in a motor size reduction while maintaining the same output torque.
New Electronic Overload Relay Helps Prevent Motor Damage, Downtime

The new Allen-Bradley E100 Electronic Motor Overload Relay can help industrial companies better protect their motors and avoid unplanned downtime. As the next generation of Allen-Bradley electronic overload relays, it more accurately measures a motor’s current load, models its temperature and shuts the motor off when it’s in danger of damage due to overheating.

Options are available to immediately detect jams and ground faults, enabling faster responses to these specific conditions. A remote reset option is also available for customers to remotely reset the overload.

The E100 overload relay comes in basic and advanced configurations. The basic model has two user-adjustable trip-class settings of 10 and 20. The advanced model has four trip class settings: 10, 15, 20 and 30. Above a sensing range of 100A, the advanced model can use external current transformer configurations to achieve a maximum rating of 800A.

The E100 overload relay is part of the Rockwell Automation integrated motor control system. It can mount directly to bulletin 500 NEMA contactors and 100-C IEC contactors up to 100A.

Rockwell Automation Helps Secure Industrial Operations by Earning New Certifications

Rockwell Automation continues to add to its list of achievements in industrial cybersecurity to help industrial companies focus more on transforming their business and worry less about potential cybersecurity risks. The company recently received ISA/IEC 62443-2-4 certification, which defines security requirements for service providers.

The certification shows that the security capabilities Rockwell Automation uses when quoting, designing, integrating and maintaining automation systems meet the standard’s requirements. ISA/IEC 62443 is the world’s only consensus-based cybersecurity standard for industrial control applications.

Rockwell Automation also received a maturity-level increase in the ISA/IEC 62443-4-1 certification it obtained last year for its Security Development Lifecycle, showing the company meets the standard’s security requirements in the way products are produced and supported. In addition, this shows the company has mature processes to handle vulnerability disclosures and work transparently with customers to help manage their risk.

The new certifications were independently performed by TÜV Rheinland and add to a growing list of ongoing Rockwell Automation achievements as the company helps customers strengthen cybersecurity.

“Industry needs partners that can help them use technology to expand what’s possible in their operations while protecting what matters most to them,” said Blake Moret, CEO, Rockwell Automation. “When companies work with us, they can take comfort knowing we provide products and services built with security in mind. The security requirements in ISA/IEC 62443 aren’t a mere checklist for us, they’re embedded in our everyday work.”

Earlier this year, Rockwell Automation introduced the first industrial controller certified to ISA/IEC 62443-4-2, with more products to follow. Rockwell Automation is also a founding member of the ISA Global Cybersecurity Alliance, a coalition of industry, government agencies and others working to help secure manufacturing and critical-infrastructure operations.

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Manufacturers can now realize the design and productivity benefits of On-Machine I/O modules on smart machines used in harsh applications.

The new Allen-Bradley ArmorBlock I/O modules can operate in a wide range of temperatures and offer up to IP69K protection in applications like automotive, material handling, packaging and welding.

The new ArmorBlock I/O options can be mounted anywhere on a machine for shorter cable runs and lower wiring costs. They use nickel-plated zinc die-cast housing, have QuickConnect functionality and offer diagnostics in an EtherNet/IP universal digital I/O block to reduce commissioning and troubleshooting times.

Three IO-Link hub blocks help reduce design complexity by allowing more devices through the IO-Link master. And an M12 L-coded power connector on selected blocks supports higher current, allowing more blocks to be daisy-chained and resulting in lower wiring and installation costs.

For companies with separate I/O blocks for digital input and output, the ArmorBlock I/O modules are an ideal choice. They provide 16-channel self-configurable digital I/O with flexibility to be used as the digital input or output depending on the application needs.

Moda is a global leader in producing high performance modular food packaging equipment. Moda integrates the latest technology with hygienic design for the vacuum packaging of meat and dairy products. Moda equipment has been crafted to endure the challenges of demanding environments, increase productivity, and deliver energy, labor and total package cost savings. The rigorously tested line of Moda systems provides improved ergonomics, product-flow and food safety, also.

Find more information at: www.modanz.com
We combine the imaginations of people with the potential of technology.