

SUPPORTING FUGITIVE EMIS

EMERSON AUTOMATION SOLUTIONS ACQUIRES

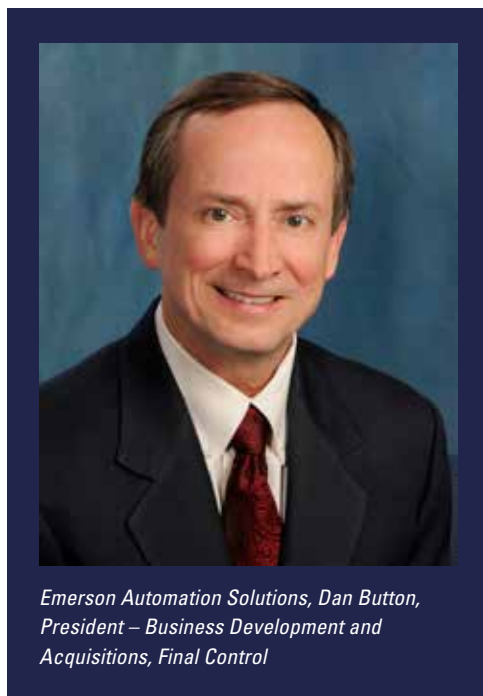
An interview with Emerson Automation Solutions, Dan Button, President - Business Development and Acquisitions, Final Control.

Q How does Emerson currently address customer initiatives to improve project and operational results?

A Emerson has been a leader in the automation solutions industry for a long time. As a seasoned solutions provider, our objective is to confront the challenges our customers face head on to help them meet their necessary goals. Projects are bigger, regulations are more stringent and markets remain unpredictable. The process industry is not what it was 30 years ago. No matter what the industry is going through, Emerson works alongside its customers as a trusted partner, providing both near- and long-term value through a series of programs and initiatives.

One of Emerson's initiatives, Project Certainty, is designed to help customers achieve transformational improvements in capital project execution and reduce the billions of dollars lost annually due to project excesses. This program gets customers engaged early on with Emerson to define project goals and the strategies to meet them. Our teams collaborate with customers to help take the complexity out of the procurement process and ensure compatibility of all technologies, trimming the need for excess parts and suppliers, while streamlining operations.

Emerson also offers a program called Operational Certainty that helps customers optimize inefficient work practices and intro-



Emerson Automation Solutions, Dan Button, President - Business Development and Acquisitions, Final Control

duces them to advanced digital technologies for enhanced operations. Our experts are helping customers identify the root causes of subpar performance and navigate their investment options for a clear roadmap to top quartile performance.

Both programs are designed to elevate customers to be top performers in their respective markets by using best practices and strategies that help combat issues, such as

fugitive emissions. We know which behaviors are required for companies to reach peak performance and we've been consistently able to help customers improve earnings. Customers are responding; they're adopting new processes and embracing new technologies to transform the way capital projects are executed in addition to maximizing their return.

Q How will Pentair's Valves & Controls technologies help deliver on Emerson's strategic plan to invest in Automation Solutions?

A It is Emerson's long-term strategy to focus on and invest in strong existing business verticals and expand in those markets. With the acquisition of Pentair Valves & Controls, Emerson is bringing together the recognized leaders in the industry in control, isolation and pressure relief valves. The technologies that Valves & Controls had developed and refined over the years complimented and even filled some of the gaps within Emerson's existing portfolio. The new final control portfolio now includes control valves, actuation technologies, pressure relief, butterfly, gate, globe, ball and check valves, making it more comprehensive and covering the scope of final control solutions.

This new combined entity offers customers the most complete solutions portfolio. We can design, manufacture, deliver, install, and service all valves everywhere. By broadening our offering of valve technologies, we're able to create even more value for customers by positively impacting their projects and helping them maximize the longevity of their assets.

Our long-term goal for investing in Automation Solutions will allow us to continue to revolutionize the final control market. Using new technologies, manufacturing practices and improved project and aftermarket services, Emerson looks forward to working with customers to solve their pressing valve problems.

Q How does the recent acquisition of Pentair's Valves & Controls business fit into your current business model?

A The Valves & Controls products are a great fit in our Automation Solutions portfolio of control valves, regulators and actuators. With this acquisition, we've added hundreds of new products and expanded the variety of solutions available to customers across the automation solutions industries. Product brands such as Anderson Greenwood, Crosby and Vanessa, for example, will have significant impact on our ability to offer more integrated solutions for an even wider range of customer challenges. Additionally, we have the broadest portfolio of smart devices for valve and actuator control, and we're introducing more and more digital connections into the field to help boost performance. From market-leading isolation valves to actuation technologies that monitor valve performance, Emerson is now a one-stop-shop for all valve needs.

Beyond product, the Valves & Controls acquisition bolsters our Lifecycle Services offering at the site level. We've gained hundreds of service experts who are dispersed around the world and ready to assist with shutdowns, turnarounds and outages in addition to other maintenance needs that keep opera-



Emerson has added hundreds of new products to its portfolio that will complement its existing product brands, such as this Virgo™ ball valve pictured above

tions running smoothly and efficiently 24/7. Emerson Automation Solutions now has the most extensive service network in the world helping our customers maintain safe, reliable and optimal operations.

This new product portfolio, and the expertise that comes with it, has broadened Emerson's breadth of innovative solutions, enabling us to better support our existing customers.

Q What brands are being added to Emerson's portfolio, as a result of the acquisition?

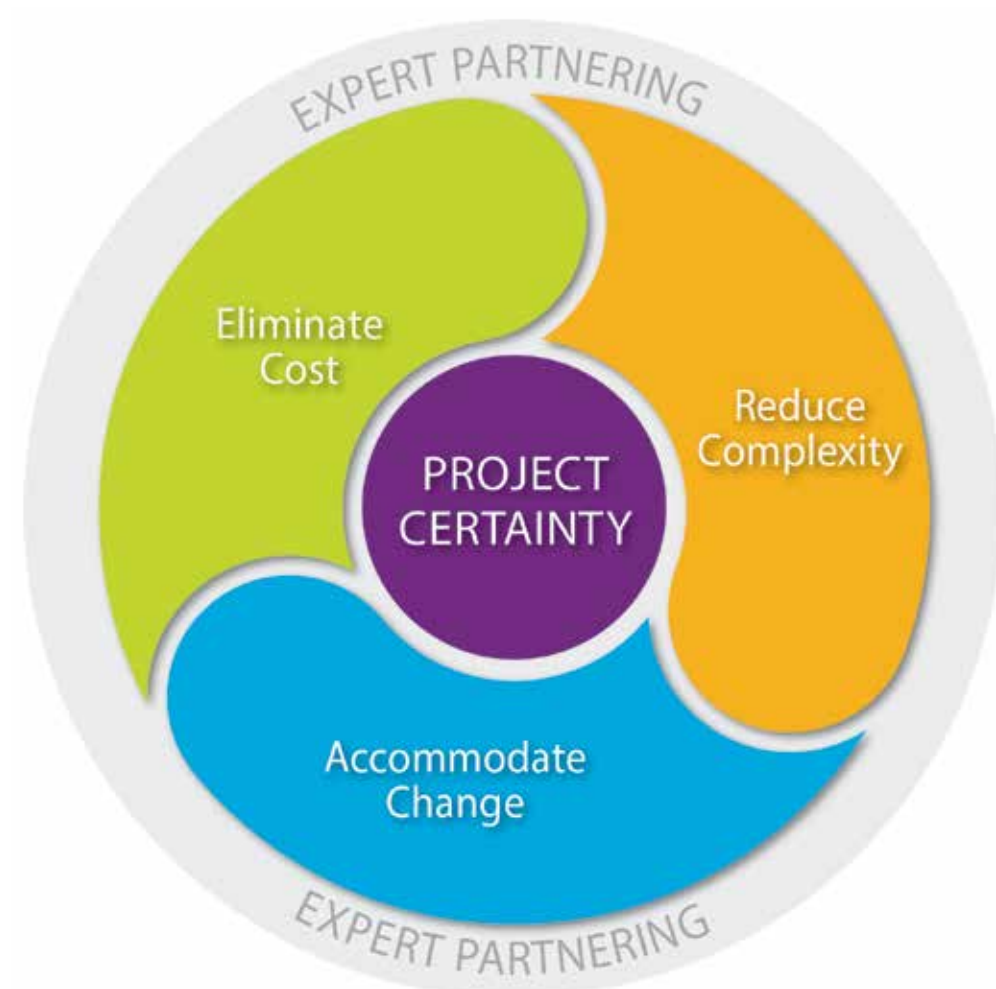
A The product brands that have been added to the Emerson portfolio are well established and have a track record of success and leadership in the global market. This includes pressure management brands, such as Anderson Greenwood and Crosby; Vanessa, Keystone, FCT and KTM isolation valve brands; Biffi actuators; and Sempell, Yarway and Clarkson control valves.

These brands, and others acquired through the Valves & Controls acquisition, have been engineered to adhere to strict standards for safety, durability and reliability, including stringent standards for fugitive emissions. For example, the FCT brand has a line of fully welded ball valves that are ideal for minimizing any risk of fugitive emissions and are compliant with worldwide safety standards.

To see detailed brand information and the expanded markets that Emerson now services, visit valves.emerson.com.

Q How will the new addition of Pentair's Valves & Controls business drive better plant productivity and safety?

A Emerson has two initiatives that are designed to help our customers reach their full performance potential - Project Certainty and Operational Certainty. Project Certainty helps customers avoid significant losses during the development of capital projects and establish goals and strategies for their operations. Research shows that over 65 percent of projects greater than \$1 billion fail, companies often exceed their budgets by more than 25 percent or miss schedules by more than 50 percent. Developing large projects is a serious



Project Certainty is an Emerson Automation Solutions initiative to help customers achieve transformational improvements on capital project execution

SIONS CONTROL INITIATIVES

PENTAIR'S VALVES & CONTROLS BUSINESS



As part of its recent acquisition of Pentair Valves & Controls, Emerson now offers Vanessa triple offset valves like the Vanessa 30,000 pictured above, known for their zero-leakage capabilities

challenge for our customers. Emerson Automation Solutions is better equipped with more options to help customers navigate investment decisions on large projects, select the right products and develop the best processes from the start. With the additional knowledge and experience from Valves & Controls, we'll be able to help our customers take their asset management to the next level by providing fresh insights on the most current best practices for valve management. This will lead them on the journey toward top quartile performance in their industry. Top quartile is defined as achieving operations

and capital performance in the top 25 percent of peer companies.

The second initiative is Operational Certainty, a technology and engineering-based program designed to help industrial companies recover more than \$1 trillion lost annually across all industries due to poor operating performance. By recovering these losses and maximizing operational efficiencies, companies can achieve top-quartile performance in the areas of production, reliability, safety and energy management. Research shows that top quartile performers have one-third the number of safety incidents as compared

to their average industry peers. They spend half as much on maintenance compared with average performers and operate with an additional two weeks of available production each year. Top-quartile manufacturers spend 20 percent less on production-related expenses and one-third as much as the industry average on energy costs as compared to average producers with 30 percent less CO₂ emissions.

Q How will this acquisition help support fugitive emissions control initiatives?

A The Emerson Automation Solutions final control portfolio is very focused on combating fugitive emissions. We are approaching this topic, not only with our product design, but also with our team expertise. We have trained and hired fugitive emissions experts with decades of experience tackling this growing issue for customers. Our products have set the standards by being the leaders in the market to develop testing criteria for pressure relief valves (PRVs) that independent testing confirmed to be thorough and successful. Our experts partnered with a leading oil company and a third party testing team to develop and design this new, never-been-done-before testing criteria for the PRVs market. Using helium gas as the testing medium, the criteria allows global oil and gas producers to meet the most stringent requirements up to 550 psig and from -320°F to 1000°F. Producers can now better protect their personnel and reduce emissions at their production sites by utilizing safety relief valves throughout the production line that are specifically tested to reduce fugitive emissions.

These new tests are enabling the fugitive emissions conversation to continue to develop and promote process and standards improvements that control the amount of emissions that are released. By embracing these types of new standards, process industries can make significant strides in leading the way for cleaner processes.

On Tuesday, June 20 at 10:30 a.m. in the Valve World Americas conference, our expert Dr. Amr Gado, Emerson Automation Solutions engineering manager – pressure management, will be presenting his innovative approach to fugitive emissions in pressure relief valves and findings. The presentation will review the first-of-its-kind fugitive emissions testing program for PRVs.

The acquisition of Pentair Valves & Controls has also added to Emerson's portfolio the process industry's first bidirectional zero-leakage valve, the Vanessa triple offset valve series. This versatile valve is engineered to minimize external emissions risk and remains the standard today for critical and general applications. Today, more than 300,000 Vanessa valves are installed in operations around the world.

In addition to our experts, we've developed specific programs in fail-safe electric actuators, low emissions gas pipeline operators, monitoring solutions for pipelines and packing boxes, and condition-based maintenance approaches that are being introduced or are currently under development. Fugitive emissions remains a critical focus and topic for our customers and a critical research area for Emerson.



Operational Certainty is a program designed by Emerson Automation Solutions that helps customers optimize inefficient work practices and introduces them to advance digital technologies for enhanced operations



Emerson's Anderson Greenwood 9300 pilot operated pressure relief valve is designed to maximize operating pressure and minimize fugitive emissions