

Hack the Crisis: Life-saving pneumatics from Emerson's ASCO and AVENTICS

By Mary Gannon | March 26, 2020

As the United States continues to focus on social distancing to combat COVID-19, more companies are revealing how the move home for their workers is impacting their business. Despite this, companies like Emerson's ASCO and AVENTICS divisions continue to step up production on key technologies used in life sciences and laboratories, including ventilators, respirators, hospital beds and testing equipment, among others.

I spoke with Erik VanLaningham, vice president of global marketing for industrial automation at Emerson and Andy Duffy, vice president of sales America for fluid and pneumatic control at Emerson, about how the company's fluid control and automation technologies are under extra production at this time, despite remote working and more challenges.

"Obviously, we are in completely uncharted territory here in terms of business environment, business model and then just sanity," Duffy said. "It's a very challenging environment but what I find very interesting is there's been a lot of talk about work from home, there's been a lot of discussion in the markets on whether we should or shouldn't do it.

"What I think a lot of companies have proven over the last couple of days is the speed at which business has transitioned into this remote environment. It has been remarkable. I give a lot of credit to our people that are flexible enough to do this because ... our team, our customers and our distribution have made a stunningly fast transition to be able to try and hunker down and work from home here. Probably the biggest single structural takeaway from this, I think is the ability to connect and keep working virtually."

VanLaningham added, "Within Emerson too there has been a task force that's been set up at the highest level with the focus on employee safety, number one, but also being able to service customers and maintain that high level of service and engagement. We know that there's going to be certain segments that are going to completely ramp up to meet the global demand in our medical and life science business and also just automation across the board to support an uptick in a number of different industries.

"It's been impressive to see not only from Emerson but at the ASCO and AVENTICS' facilities to maintain that level while there's a certain workforce working from home, and also implementing the social distancing and safety measures at the facilities and at the plants," VanLaningham said.

Keeping patients safe and comfortable

Duffy noted that Emerson saw an immediate and significant increase in demand from its customers that make breathing therapy products including portable oxygen concentrators and ventilators.



"We make a series of miniature instrument level valves for analytical and medical equipment and we're seeing it first and foremost from the oxygen therapy people," Duffy said. "The new hospital beds these days have air bladders that control the comfort of the patient. These bladders are pneumatically actuated. We do valves for that. Because you see the requirement for hospital beds has skyrocketed, the hospital bed manufacturers now are all calling us."

Emerson's line of miniature fluidic control valves for medical devices. Technologies like these are in high demand as the world requires more ventilators and oxygen treatment devices to treat COVID-19.

Emerson's technologies are also used in lab equipment for testing and blood analyzers. "I would say that kind of the frontline medical requirements are what's driving us first and foremost," Duffy said. "As Eric said, we've got a task force globally working both sides. We're talking to the customers, we're talking to the suppliers, we're making sure that the suppliers in that space understand that they're essential to this and we need them to stay open."

VanLaningham added that ASCO offers a range of proportional valves and other proportional type of capabilities such as pinch valves that go into those devices. "We have the compact size, the ability to have that variable flow and that proportional capability, and the quiet footprint. We also have a solenoid valve from our ASCO product that goes in the hospital beds."

Duffy and VanLaningham said that the increase in demand has come mostly from its current supply chain — existing customers and distributors — and that it's too early to see if new manufacturers coming online will further increase the demand. For their part, Emerson wants to beef up its own supply chain so that if others come up with the space and capability to manufacture ventilators, for example, they have the products ready to go for that need.

Preparing for single-use drug production

Drug production will also see added use of the company's 273 pinch valve as well as angle body valves, cylinders, FRLs, and total automation from the AVENTICS side.

Key to all these technologies is the need for single-use technologies, Duffy said. "I think the single use play will be important here," he said. "That's one of the things that I think gives the life sciences industry a little bit of an edge here opposed to maybe 10, 15 years ago. We didn't have a single use concept and now I think the ability to adjust these systems to different drugs quickly through single use will help speed up some of the delivery of potential treatments or whatever that's needed in terms of medication here."

Flexibility amidst social distancing

To meet these increasing demands, Emerson has been making several time adjustments at its manufacturing facilities. "The shift work is really kind of important. Where we didn't have it, we've looked at third shift," Duffy said. "Part of this is reaction to the employee's needs. Some of these workers have become primary care for their kids and they can't work during the day so we've offered them positions in the evening shifts. We're trying to be as flexible as possible.



"A lot of our manufacturing is set up in different cells. Inherently, they're separated and a lot of them are designed that a single person can work a cell. We do have some flexibility on the floor to make sure that the people are spaced," he continued. "Obviously, we've increased the cleaning and sanitation of the workspaces, the common areas, and provided whatever additional personal protective equipment, like gloves and things like that, to help protect employees."

VanLaningham added that the importance of communication has been critical as Emerson works to maintain the global perspective of its supply chains, particularly in Europe, Asia Pacific and the U.S. "For us, that meant relocating engineering (to home-based) and being able to make sure we're utilizing existing capacity in other plants across the globe. If you take the top 20 real market leaders in this analytical medical space, all of them are seeing just unprecedented increase in demand and volume.

"That's where turning to a business like Emerson with brands that they know like ASCO and AVENTICS at the plant level in automation, gives you credibility and know-how. You can't underestimate just recognizing the challenge and then being clear on how we're going to work that through in the days and weeks by getting ahead of it."

Key to this transition has been Emerson's online shop. The company's e-shop allows customers to access and specify products easily. "I think for Emerson one of the best things in this digital customer experience is just giving the right tools for quick configuration based on the application," VanLaningham said. "For any of our products within ASCO and AVENTICS, you can go and put your requirements and then get a design and be able to get that quickly quoted.



Pneumatic valves are crucial to breathing treatment devices, including ventilators like this one and above. ASCO and Aventics technologies are used heavily in these designs and their manufacture.

"Emerson has in-house design engineers who specialize in these rapid engineered prototypes and configured products that could be worked on in a very short amount of time. We have that digital footprint as an investment area and focus and we've seen a significant engagement and ramp up there."

For the most part, all of Emerson's office staff are working remotely, including engineering employees. Being able to use online tools like Microsoft Teams has allowed them to stay efficient and productive and the transition has been fairly seamless, they said.

Finally, particularly from the automation side, ASCO and AVENTICS have seen a great deal of uptick in packaging and processing technology needs, for things like food and beverage, disinfectants, tissues, air purifiers, and more. VanLaningham said it appears as more workers go remote, needs for these types of products are steadily rising. "ASCO and AVENTICS has products that support that plant automation, and also as new cells come on, we can quickly configure to support those applications that are across our control and pneumatics footprint," VanLaningham said. "In plant automation we have the broadest offering in the marketplace today ... We were kind of the founder of the solenoid valve and fluid control and we have a number of different medias we support with AVENTICS with our FRLs, cylinders and our directional control valves that really support plant automation."

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