

HVAC Manufacturers Invest in Innovation and More Production

Industry transforms production methods while developing advanced control systems

by *AUSTIN KEATING*

The HVAC industry is experiencing a remarkable transformation as manufacturers invest heavily in both production capabilities, as well as develop synergistic and value-added technologies.

This two-pronged approach – upgrading manufacturing processes while developing more intelligent control systems – is helping companies take control of their supply chain and grow. From new CNC manufacturing equipment to wireless control systems, companies are finding different paths to serve an evolving market.

MANUFACTURING INNOVATION DRIVES DOMESTIC PRODUCTION

For S&P USA Ventilation Systems, the path to better ventilation control starts at the manufacturing level. The Jacksonville, Florida-based company has recently made significant investments in state-of-the-art manufacturing equipment, including new CNC punch/forming machinery and custom-designed flanging production equipment.

“The more we can fabricate in-house, the less we’re dependent on outside suppliers,” explained Joe Delia, a manufacturing leader at S&P USA. “While I’m not opposed to outside suppliers, controlling quality becomes more challenging when parts are made elsewhere. When you have to draw up engineering changes and send them to suppliers, you’re dealing with a pipeline full of parts that might need rework.”

This vertical integration strategy has increased S&P USA’s manufacturing throughput by approximately one-third, Delia noted. The upgraded equipment allows for more efficient production methods – for instance, using gang punches that can create multiple holes simultaneously, often proving faster than laser cutting for certain components like bird guards.

The company is also bringing production of mixed-flow fans to Jacksonville, which were previously manufactured in Thailand. “By doing the fabrication in Jacksonville, we can reduce costs and adapt designs for North American market needs,” Delia said. This includes developing belt-drive units better suited for contaminated air environments, such as commercial kitchens or electrical plants where motors need to be kept out of the airstream.

These manufacturing improvements have positioned S&P USA to better serve time-sensitive ventilation needs while maintaining strict quality control. “If I have a quality issue in the factory and only two days’ worth of supply, I can manage that. But if I’ve got a pipeline with three months of parts in it, that becomes a much bigger problem,” Delia explained.

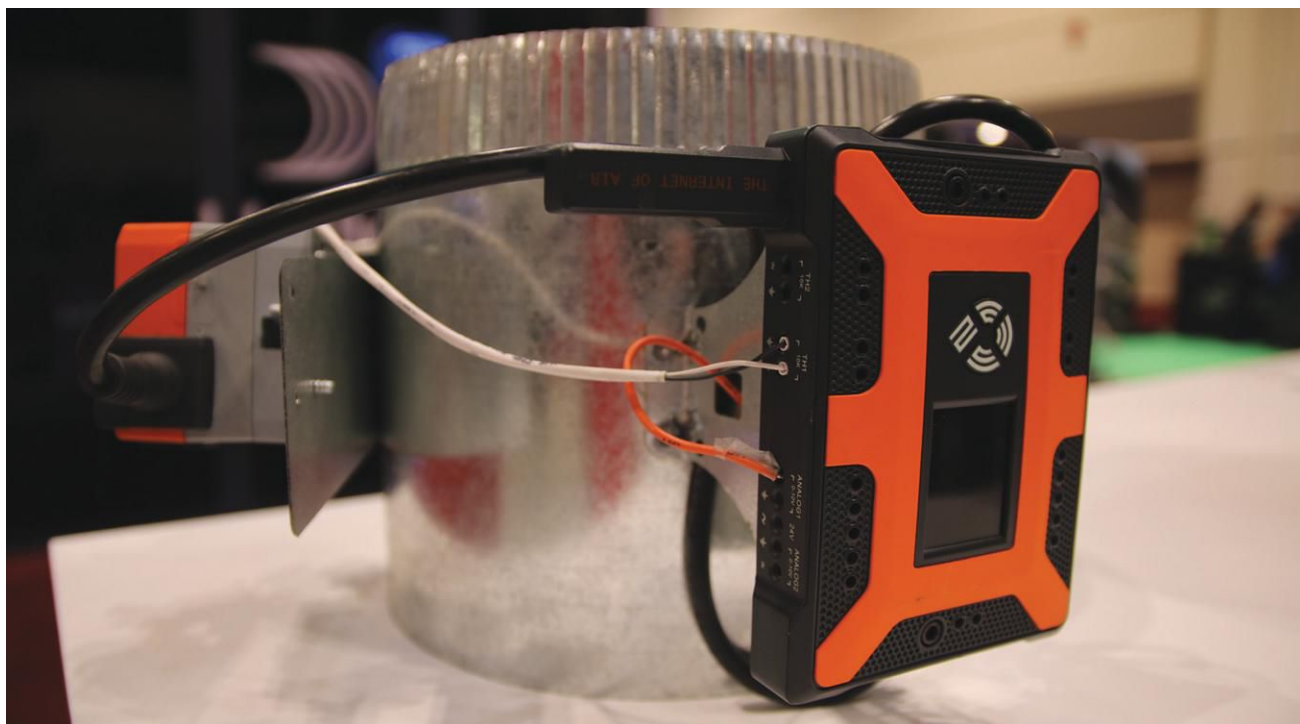
SMART CONTROL INNOVATION: DMI BUILDS ON MANUFACTURING EXPERTISE

While some manufacturers focus on production capabilities, others are enhancing how HVAC systems operate in the field. DMI Companies’ new Airoverse business unit builds upon the company’s established GreenSeam division, which manufactures dampers and other HVAC components. This integration allows Airoverse to offer complete solutions: from the physical dampers and actuators to the smart controls that manage them.

The Airoverse engineering team adapted their existing GreenSeam damper designs with specialized brackets and modified damper blades that work seamlessly with the Airoverse control system. This practical approach to product development is evident in how DMI tested the system at their own headquarters – a 1890s-era former bank building in Charleroi, Pennsylvania.



VERTICAL: Through vertical integration, S&P USA has achieved approximately one-third higher manufacturing throughput, said Joe Delia of S&P Ventilation. (Staff photo)



BALANCE: Traditional building automation systems are often cost-prohibitive for light commercial spaces. Aeroerse’s dynamic air balancing system addresses this gap in the market, with help from sister company GreenSeam. (Staff photo)

“Our corporate headquarters is a Frankenstein of an HVAC system,” explained Dan Quiroga, a business development manager at Aeroerse. “We had nine different offices in one section of the building, where the person at the front of the chain was getting blasted with cold air, while the person at the end received almost no airflow.”

Airoerse addresses this common challenge through dynamic air balancing, adjusting airflow every 60 seconds to maintain consistent comfort throughout the building. This improves upon traditional static balancing methods by responding to changing conditions and comfort demands in real-time.

The system is designed specifically for light commercial applications – restaurants, small offices, and similar spaces where traditional building automation systems could be cost-prohibitive. “People want that comfort, but they need to justify the price point,” Quiroga noted. “Now we have something that can deliver a return on investment through energy efficiency while significantly improving comfort.”

Installation and setup are streamlined through wireless configuration and a straightforward interface. Contractors can configure the system using Bluetooth pairing and simple device selection, making advanced HVAC control more accessible to smaller commercial buildings. ←