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Application Case Study: Electric Damper Automation for Semiconductor Scrubber Yards

Genesis Systems has a long history of supporting the automated damper needs of our semiconductor customers since the early 1990's. Historically we have provided modulating pneumatic assemblies, but in recent years customers have started to adopt and embrace electric actuator technology. One of our largest semiconductor customers came to Genesis Systems looking for a more efficient, reliable and accurate method to control their scrubber yard dampers. These scrubber yard dampers are utilized to isolate and maintain fab pressure on the acid (ACIDX), caustic (CAUSX), volatile organic chemicals (VOCX) and general (GENX) exhaust systems. The dampers range in diameter from 18" up to 66". Maintaining the exhaust system pressure is critical to the operation of the tools in the fab and therefore the dampers need to actuate with very precise control. The customer was unable to get the control they needed using pneumatically driven actuators. The existing assemblies had limited control and feedback options, very high maintenance costs and did not allow the operators to easily engage the manual override on loss of power or air to the damper.

Genesis Systems worked closely with our customer to validate, test, specify and supply a new electric automation package that incorporates a precision gear driven motor with digital controls to provide a highly accurate and efficient method of controlling the damper position. In addition, the electric actuator provides a significant amount of performance and operation data, via a Bluetooth, to assist with troubleshooting and predictive maintenance. The assembly includes an integral manual override that can be engaged and disengaged without interruption while the system is online. The unit also includes independent fail-safe operation on loss of power and control signal so that the damper can fail in its last position until an operator is able to engage the manual override. The combination of these quarter-turn automation controls allowed the customer to gain infinite control and speed of their damper operation while enhancing their reliability and lower maintenance costs. The electric damper automation packages also allow the customer to safely manually operate the dampers without the risk of bumping the fab system pressure.

This is another example how Genesis Systems combines years of valve automation experience with a willingness to do whatever it takes in order to exceed our customer's valve and valve automation requirements and expectations. Contact Genesis Systems if you would like us to provide a knowledge based solution for your damper automation needs.

If you would like additional information on this application or any of our other specialty valve or valve automation packages, please contact our office directly or visit our web site to locate your Genesis Systems Territory Manager.