

# Heavy Duty Gas Turbine Electric Fuel Valves and Actuators

ELIMINATE HYDRAULIC ACTUATOR PROBLEMS AND IMPROVE SYSTEM RELIABILITY



**FLOW CONTROL VALVE**



**PRESSURE CONTROL VALVE**



**GUIDE VANE ACTUATOR**

# Common Problems with Hydraulic Actuators in Heavy Duty Gas Turbines

- > Hydraulic fluid viscosity dependent on ambient temperatures - leads to slower response times in cold temperatures - resulting in failed starts
- > Fluid varnishing can lead to clogged servovalve passages resulting in failed starts or stops
- > Potential of high pressure hydraulic leaks pose safety risks
- > Premature seal failure - noise on hydraulic control circuits can lead to premature wear on hydraulic and gas seals
- > No actuator/valve data to predict failure in advance of outages



Hydraulic Fuel Valve and Power Unit

# Next Generation Electric Valves and Actuators Increase Turbine Reliability and Availability

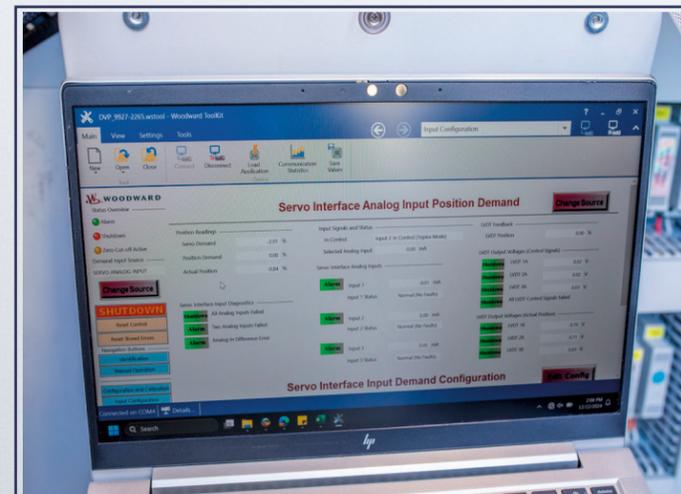
Heavy Duty Gas Turbines have increasingly been dispatched to support the grid during renewable energy transition. These market conditions drive fleet owners to operate their assets as peakers, creating the need for frequent starts. Start-up reliability has become a key success factor for these units.



Installation of Electric Valves

# Benefits of Electric

- > Elimination of hydraulic fluid and associated problems with contamination, cold weather and leakage
- > Higher reliability design inherent to electric actuation significantly increase maintenance intervals
- > Improved control response and precision
- > OEM Qualified and included with the majority of new Gas Turbines
- > Compliant with NERC standards for cold weather preparedness
- > Service Tool provides enhanced diagnostics for plant personnel and early indication of performance issues at the DCS operator terminal



Service Tool Screen

# Easy to Install

- > Most valves are drop in replacements and do not require piping modifications
- > Servovalve Interface option allows the installer to use existing signal wiring from the control system
- > Alternate communication options for control system integration are available such as CAN Bus and Analog I/O for maximum flexibility
- > Electric actuators are paired with a remote Digital Valve Positioner (DVP) that controls the actuator operation and serves as the customer interface for power/signal wiring and digital communications. Multiple DVP's can be packaged within a stainless steel cabinet and prewired from the factory to greatly reduce commissioning time



DVP Cabinet Installation

# Global Locations



**Legend**

- Woodward Locations
- Channel Partner Location

 Woodward Industrial Support: Get Help

Woodward, Inc.  
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