

Worldwide Turbomachinery Support



Electronic Fuel Module

Solar's pre-engineered, pre-tested electronic fuel valve modules greatly improve performance, reliability, and serviceability, while extending the life of turbomachinery equipment.

Primary Goals	
●	Safety Enhancement
●	Operational Efficiency
●	Emissions Control
●	Life Extension
●	Reliability Enhancement
●	Installation Efficiency

The pre-engineered gas fuel module is designed as a direct replacement for the existing gas fuel system. The new system, assembled as a single-lift module, will utilize an electronic gas fuel control valve(s), gas fuel primary and secondary safety isolation valves, new gas pilot system, and associated hardware and instrumentation.

Upgrading the fuel system is a great way to extend the life, improve performance, and reduce maintenance of a Solar® gas turbine. The Electronic Fuel Modules are available as stand-alone improvements or in conjunction with other system upgrades and uprates. The modules have been designed to include the latest safety and performance enhancements. Each preassembled module is fully tested at the factory and ships ready for on-site installation.

Solar Turbines offers a suite of pre-engineered Electronic Fuel Modules available in a variety of configurations, applicable to the Saturn®, Centaur®, and Taurus™ 60 with TurboTronic™ 3MX or TurboTronic 4 control systems. These modules are designed for 24 Vdc operation and are configured for standard combustion, SoLoNOx™, and liquid fuel systems. A 120 Vdc system is available for Taurus 70 and Mars® gas turbines. The pre-engineered Electronic Fuel Module is a complete fuel system, from the package fuel inlet to the engine fuel gas manifold.

Certifications

NEC, CSA, and ATEX

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Benefits

- **Extended Machine Life:** An on-board computer is used to perform the fuel flow control helping to maintain equipment life and keep it running as long as possible.
- **Improved Performance:** The Electronic Fuel Module and accompanying fuel control software provide faster transient load response, improved performance in *SoLoNOx* mode, and more effective overall control of the turbine engine.
- **Improved Start-Up Reliability:** Upon initial power up, the electronic fuel valves automatically self-calibrate, eliminating the need for manual adjustment. Fuel flow control with flow meter accuracy eliminates fuel system starting problems, even under adverse conditions of heat, humidity, vibration, ambient temperature, and fuel variability.
- **Safety Enhancement:** Equipment integrity, protection and safety are enhanced with improved turbine surge protection and flameout detection, made possible through the combination of fast-acting (250 ms) electronic fuel shut-off valves, actuators, and regulators—all controlled by updated software. The Electronic Fuel Module protects the gas turbine from overspeeding in emergency situations, such as loss of load. The primary shutoff valve actuator is configured with a large exhaust port that reduces backpressure, enabling rapid closure of the valve to isolate turbine fuel supply.
- **Serviceability:** Modular design allows easy access to the fuel system components for service or troubleshooting. The electronic system design replaces servo hydraulic system components for easier adjustment and calibration.

Pre-testing the fuel module significantly improves reliability after installation. Drawings updates are included.

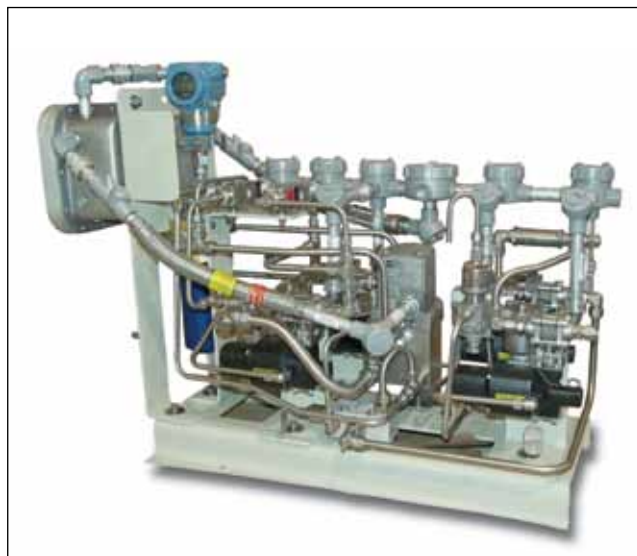
- **No Voltage Change:** The 24 Vdc or 120 Vdc design matches the existing power supply, thus avoiding the need for a new battery system.
- **Reduced Installation Downtime:** Installation time associated with traditional fuel system components is reduced by approximately 75% for the fuel system portion. Missing or wrong project components are virtually eliminated.
- **Achieve Low Emissions:** Solar's *SoLoNOx* emission reduction systems require the use of Electronic Fuel Modules for state-of-the-art fuel management to minimize pollution.

Additional Information

For more information about our Electronic Fuel Valve Modules, contact Solar's Field Office nearest you or go to www.solarturbines.com



2-piece *SoLoNOx* fuel module



Centaur liquid fuel module