

## ELECTRONIC FUEL MODULE

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

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

Upgrading the fuel system is a great way to extend the life, improve the performance and reduce the maintenance of a Solar® gas turbine. These modules are available in conjunction with control retrofits as well as other package system upgrades and engine 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 Saturn® through Titan™ 130 with TurboTronic™ 3MX and newer TurboTronic control systems. These modules are available in two varieties, 24Vdc and 120Vdc fuel control valves, and support conventional, SoLoNOx™, liquid fuel and dual fuel package configurations. 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, ATEX, NACE and PED.

### BENEFITS

- **Extended Machine Life:** Replacement of legacy components which are tough to repair and maintain with modern electronics fully supported to the latest standard.
- **Improved Performance:** The electronic fuel module and accompanying fuel control software provides 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 (200 ms) fuel shut-off valves and actuators – all controlled by updated software. The electronic fuel module protects the gas turbine from overspeed in emergency situations such as loss of load.
- **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. Pretesting the fuel module significantly improves reliability after installation.
- **No Voltage Change:** The 24Vdc or 120Vdc design matches the existing power supply, thus avoiding the need for a new battery system.

# Solar® Turbines

A Caterpillar Company

Powering the Future Through Sustainable, Innovative Energy Solutions

- **Reduced Installation Downtime:** The pretested and pre-engineered fuel module design requires less time to install and commission compared to a system installed component by component, allowing the customer to gain beneficial use more quickly after retrofit.

- **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.



24Vdc Conventional Combustion for Centaur® 40 to Taurus™ 60



120Vdc Conventional Combustion for Centaur 40 to Titan 130

## Additional Information

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