

Gas Turbine Control Systems

Overview

Proeon Systems Ltd. embodies over 25 years experience in the design and implementation of complex high criticality control systems for a variety of industries.

Using a variety of Programmable Logic Controller (PLC) platforms, the company supplies robust engine control systems that provide precise automatic governing, sequencing and load control for the engine and its driven load. Programmable systems can dramatically increase the start availability, reliability and performance older analog, relay or hydro-mechanical systems. The systems have extensive diagnostics and communication facilities allowing easy interfacing to other plant equipment, SCADA systems or DCS platforms.

Our extensive experience with some of the major international Oil and Gas companies provides the company with an understanding of the industry enabling us to implement control systems of the highest quality.

Solutions

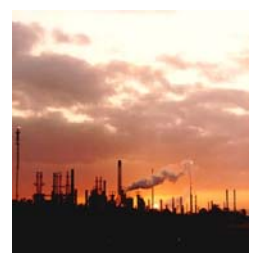
The company provides a complete automation control solution for mechanical drive gas turbines, station controls and Emergency Shutdown (ESD) systems. Our systems provide complete SCADA, DCS as well as Fault Tolerant systems and we are at the very forefront of machinery control and monitoring technology.

Facilities

We provide the basic engine sequencing and closed loop governor control our GT control systems can also include HMI systems, plant control systems such as Station Control and Anti-surge control systems for turbo-compressor plant as well as synchronisation and load control for power generation equipment.

Key Points..

- PLC based GT control systems using Rockwell and Siemens hardware
- Integrated governor, EGT and engine sequencer
- Increased reliability over older electro-mechanical systems
- High level of inbuilt diagnostics
- Optional Load Control packages for electrical and turbo-compressor loads
- Extensive communications to HMI, DCS and SCADA systems



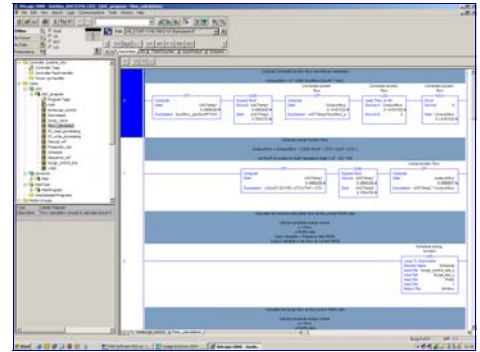
Innovatively Engineered Solutions

Proeon Systems Ltd.

Control platforms

Our control platforms include the state of the art Rockwell Controllogix and Siemens S7/400 PLC's.

These systems provide interchangeable hardware and portable software, greater standardisation, supplier independence as well as upgradeable technology with global support from established companies. Integration of the controls onto other hardware platforms is available where the controllers meet the performance requirements.



Each of the control platforms uses conventional I/O but may be interfaced with distributed I/O technologies such as Profibus, ControlNet and Genius Bus to provide a cost-effective alternative to traditional multi-core field cabling.

Engine control

The basic gas turbine engine control schema within the controller platform consists of:

- Governor control module—Closed loop control of engine speed and engine parameter limiters
- Exhaust Gas Temperature (EGT) package—Monitoring of the EGT temperatures as well as the calculation of average, deviation, spread, temperature alarming etc.
- Engine sequencer control module—The sequenced start-up and stop control of the engine as well as alarm handling and the interface to HMI and SCADA systems



Each software control module is designed to operate within its own independent optimised program execution blocks to provide robust high speed control. Interfaces to the modules are simplified through defined parameter lists and command structures.

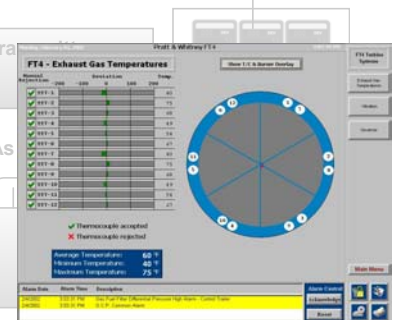
Load control

Additional modules can be installed within the GT controller platform to provide driven load control facilities including:

- Compressor Anti-Surge control
- Compressor Station control
- Electrical load control
- Electrical load balancing and load shedding
- Plant sequencing

Auxiliary equipment

Proeon Systems Ltd. can supply all the necessary auxiliary control and protective systems needed for the GT control system. This includes fuel valves, independent overspeed protection, Emergency Shutdown systems, Fire & Gas systems, vibration monitoring as well as replacement and new field instrumentation.



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