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# Solar Centaur 4000 KW 60 HZ Gas Turbine Generator Set Datasheet

## General

Report:

1 off 4000 KW Solar Centaur Gas Turbine Generator Set is a skid mounted integrally connected, piped and wired unit featuring an indoor, sound attenuated gas turbine engine compartment.

The unit is presently equipped to burn natural gas fuel but can be converted to burn distillate fuel.

The unit is equipped with a Woodward governor; an air starting system consisting of electric motor driven compressors, air storage tanks and air expander; Donaldson self-cleaning air filtration system; inlet air fogging system; lubrication oil system; oil cooler; gauge panel; exhaust elbow, and a free standing switchgear for auto start, parallel and synchronizing operation.

A new turbine / generator control system is fitted, comprising – Allen Bradley Controllogix plc, Woodward 2301D Governor and Bentley Nevada Vibration monitor.

## Engineering / Performance Data & Operating History

### Solar Centaur refurbished Turbo-generator package specifications:

- Centaur T4501 single shaft gas turbine engine, overhauled
- 1800rpm reduction gearbox, overhauled
- 5000 KVA Ideal generator, 4000 KW, 0.8 PF, 1800 RPM, 3 Phase, 60 Hz, 13.8KV, 6 Lead, Continuous Duty with Class "F" Insulation
- Pneumatic Start System
- Fire detection/suppression system, including
  - New fire detection controller
  - New (2) UVIR flame detectors
  - CO2 bottles and rack
  - Horn/strobe light assemblies on skid
- New (2) gas detectors and sensors
- New instrumentation (transmitters, RTDs) for the following:
  - PCD
  - Gas Fuel Pressure
  - Lube Oil Header Pressure
  - Lube Oil Header Temperature
  - Air Inlet DP
  - Enclosure temperature
- Woodward Governor Gas Control Valve.
- New turbine/generator control system including:
  - Allen-Bradley ControlLogix PLC for turbine/generator sequencing and protection
  - Woodward 2301D-GT governor
  - Woodward DSLC generator control
  - ABB Generator Protection Relay
  - Basser SSR Voltage Regulator
  - Bentley Nevada BN1701 vibration monitor

- Hi-temperature velomitor for gas producer
- Accelerometer for gearbox
- Velomitors (2) for generator
  - HMI, with the following content:
- Panel-mount PC
- Keyboard Drawer
- RSView32 software
  - Digital generator meters (one for generator bus, one for running bus)
  - Synchroscope
  - Skid re-wired with new conduit
- 480V Motor Control Center, containing starters for the following motors:
  - Enclosure Vent Fan
  - Lube Oil Cooler Fan motors (qty. 2)
  - AC Lube Oil Pump
- Donaldson Self-cleaning combustion air filter
- Inlet silencer
- Exhaust Silencer
- 2 Lube Oil Coolers

**Photo**

