**INTRODUCTION**

The SDG500 Series (Smart Digital Governor) is designed to regulate engine speed on diesel and gas/gasoline reciprocating engines. The SDG500 Series (Smart Digital Governor) is a suitable replacement for any mechanical system that needs more flexibility, precision or control in governing speed. The SDG500 Series is an integral part of a closed loop control system. When connected to an electric actuator and supplied with a magnetic speed sensor signal, the governor will direct the engine to the desired speed setting. The SDG500 Series (Smart Digital Governor) is designed for industrial applications ranging from generators and mechanical drives to pumps and compressors.

**DESCRIPTION**

The SDG500 Series is a solid state microprocessor based speed control unit that offers precise (+/- 0.25%) speed control with fast response to transient load changes in isochronous and droop modes. Designed for high reliability and ruggedly built, the SDG500 Series is hard potted to withstand the harsh engine environment and can be mounted directly in the engine compartment.

The SDG500 Series has several settings built in configurable features: three fixed and variable speed with correlating droop settings; engine overspeed shutdown protection; speed ramping from idle to operation speed; and starting fuel control for lower engine exhaust emissions.

The factory standard SDG500 Series can be configured to OEM’s specifications.

If needed, configuration and tuning of the SDG500 Series can be accomplished by the OEM via GAC’s configuration software. The software allows users to save the current configurations and data to a file. Saved settings can be utilized for configuring multiple units.
DIAGRAM 1 DIMENSIONS

DIAGRAM 2 SYSTEM WIRING/OUTLINE

SDG514
**PERFORMANCE**

- Isochronous Operation/Steady State Stability: ± 0.25%
- Speed Range/Governor: 400-10KHz
- Speed Drift w/ Temp: < ± 1% Max.
- Idle Adjust: Full Range
- Droop Range: 1-17% Regulation
- Speed Trim Range: ± 5% of Rated Speed

**ENVIRONMENTAL**

- Ambient Operating Temperature Range: -40° to +85°C (−40° to +180°F)
- Relative Humidity: Up to 95%

**RELIABILITY**

- Vibration: 7G @ 20-100Hz
- Testing: 100% Functionally Tested
- Agency: CE Compliant

**INPUT/OUTPUT PARAMETERS**

- Supply: 12-24 VDC Battery Systems (6.5VDC to 33VDC)
- Polarity: Negative Ground (Case Isolated)
- Power Consumption: 70 mA max. Continuous plus actuator current
- Speed Sensor Signal: 0.5-120 VRMS
- Actuator Current: 7 Amps continuous max
- Load Share/Synchronizer Input: 0-10VDC

**CONFIGURATION PARAMETERS**

- Flywheel Teeth: 50-250
- Range (Gain/Stability multiplier): 1-10
- Fixed Speed Settings*: 0-max RPM
- Variable Speed Settings*: 0-max RPM
- Overspeed Setting*: 0-max RPM
- Starting Fuel Preset*: 0-max Fuel

* Maximum RPM is based on the Flywheel Teeth. RPM = Frequency x 60/Flywheel Teeth. Maximum Frequency is 10,000Hz.