

- Fast, Compact Digital Engine Speed Governor
- Solid-State Microprocessor-Based Device Designed to Control Engine Speed with Precise Response to Transient Load Changes
- Easy Configuration using GAC SmartVU Software
- Three Fixed Speeds and One Variable Speed with Droop Governing Capability
- Overspeed Shutdown Protection
- Speed Ramping from Idle to Operation Speed
- Starting Fuel Control for Lower Engine Exhaust Emissions

**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.

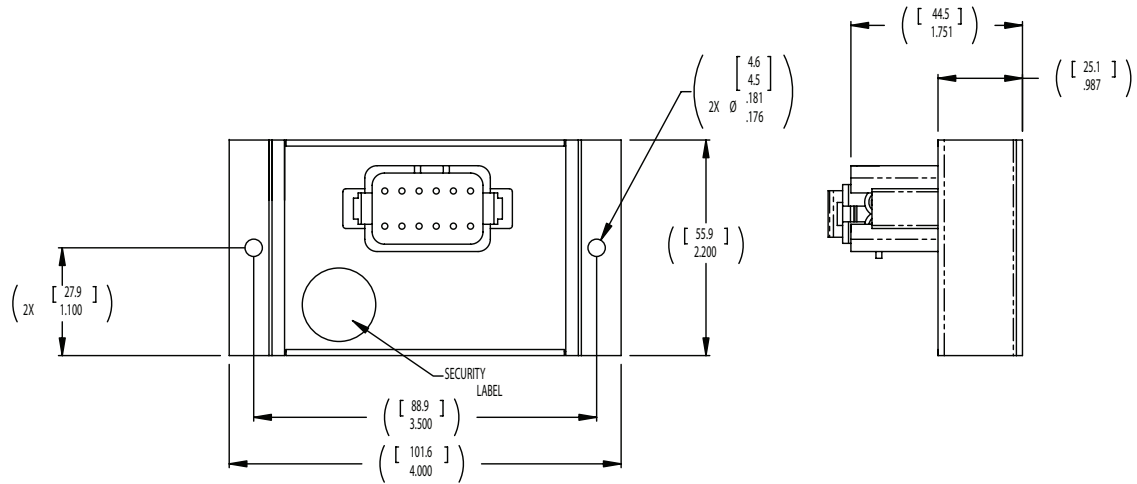
If needed, configuration and tuning of the SDG500 Series can be accomplished by the OEM via GAC's configuration software. The software allows users to save the current configurations and data to a file. Saved settings can be utilized for configuring multiple units.



**SELECTION CHART**

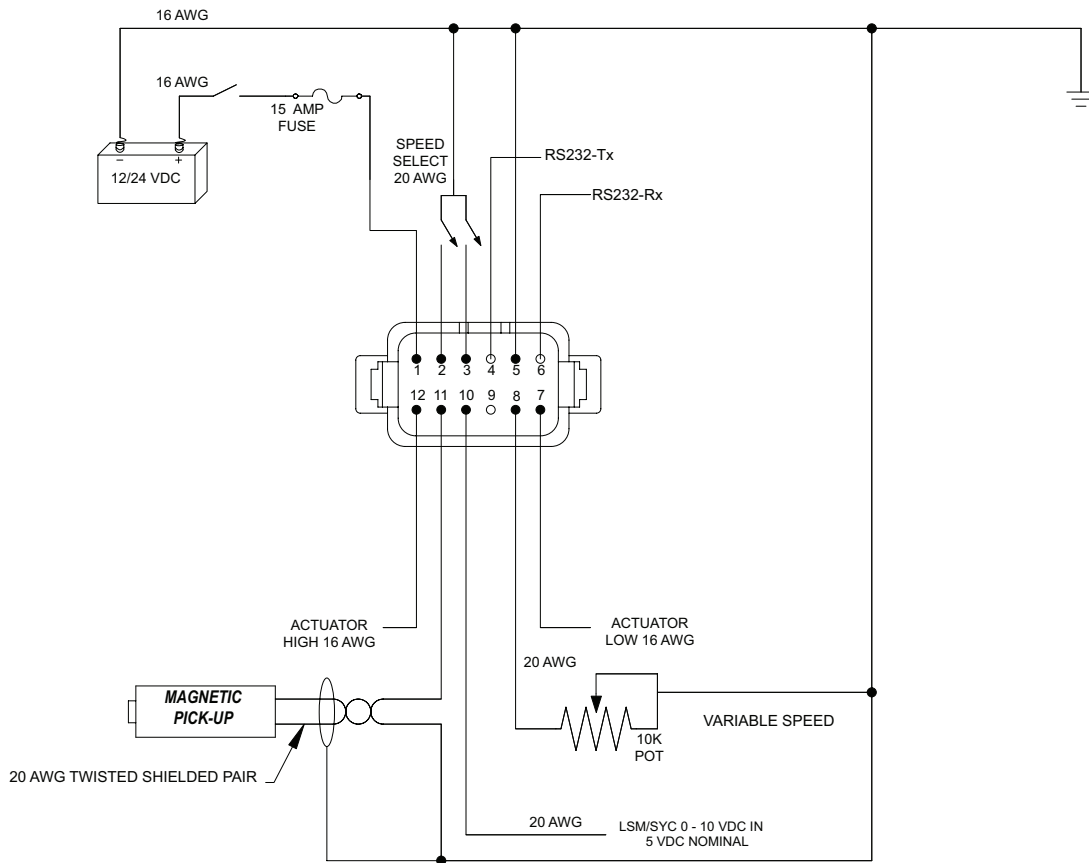
MODEL	CHARACTERISTICS
SDG514-01-01	Resistive (10K Potentiometer) Variable Speed Input
SDG524-01-01	0-5 VDC Variable Speed Input

# DIAGRAM 1 DIMENSIONS



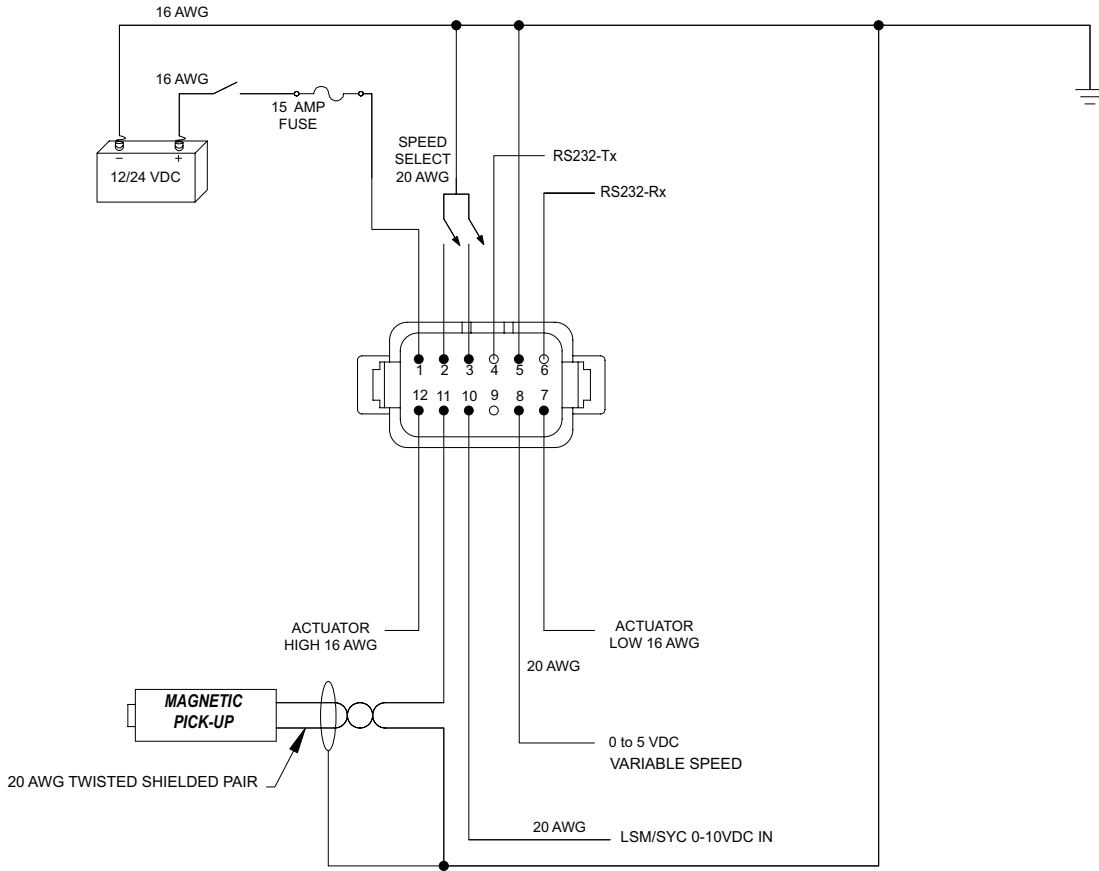
# DIAGRAM 2 SYSTEM WIRING/OUTLINE

## SDG514



This document is subject to change without notice.  
 Caution: None of GAC products are flight certified controls including this item.

# SDG524



## SPECIFICATIONS

### Performance

Isochronous Operation/Steady State Stability	±0.25%
Speed Range/Governor	400-10KHz
Speed Drift w/Temp	< ± 1% Max.
Idle Adjust	Full Range
Drop 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 - 24VDC Battery Systems (6.5VDC to 33VDC)
Polarity	Negative Ground (Case Isolated)
Power Consumption	.70 mA max. Continuous plus actuator current
Speed Sensor Signal	0.5-120VRMS
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.

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