

Please read the following instructions and visually inspect this product for damage from shipping before installing. It is your responsibility to have a qualified person install this unit and make sure it conforms to local codes.

! This bulletin is not intended to replace the Product User Guide. Refer to the **SDG500 Series PUG4124** for complete product overview available for download at www.Governors-America.com.

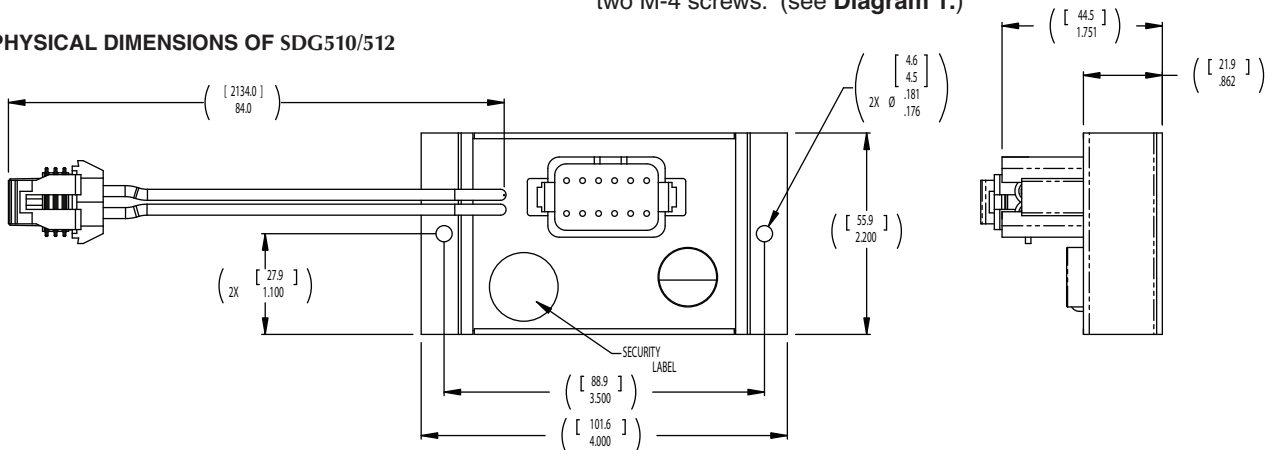
The **SDG500 Series (Smart Digital Governor)** is designed to regulate engine speed on diesel and gas/gasoline reciprocating engines. The **SDG500 Series (Smart Digital Governor)** is a suitable replacement for any mechanical system that needs more flexibility, precision or control in governing speed. The **SDG500 Series** is an integral part of a closed loop control. 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. (see **Table 1.**)

TABLE 1.

Devices covered in this manual.							
Model	Hardware Version -01 Standard -03 Dither	Software Version	Deutsch Connector	Samtec Connector	Packard Actuator Connector	Automotive 2 Pin Connector	Gain Pot
SDG510	-01 -03	-01	x		x		
SDG511				x		x	
SDG512			x		x		x
SDG513				x		x	x
SDG514			x				

Example: SDG500 with stanard software, dither, external GAIN POT and Samtec Connector. **SDG513-03-01**

DIAGRAM 1. PHYSICAL DIMENSIONS OF SDG510/512



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 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.

Configuration and tuning of the **SDG500 Series** can be accomplished via **GAC's SMARTVU™** configuration software and the **TSE304 GAC's Programming Connector Unit** for the **SDG511** and **SDG513** and **CH1330 Cable Harness** for

GAC's SMARTVU™ configuration software is available for download at www.Governors-America.com.

MOUNTING

Locate the **SDG Series** control a distance from extreme heat, wires or coils. Operating temperature range is from -40° to 85° C (-40° to 180°F).

To mount the **SDG** to a panel, drill 2 (Ø.181 / .176 [4.6 / 4.5mm drill size) holes for mounting screws. Place module in front of the panel aligning with the pre-drilled holes. Secure the module in place with two M-4 screws. (see **Diagram 1.**)

DIAGRAM 2. PHYSICAL DIMENSIONS OF SDG511/513

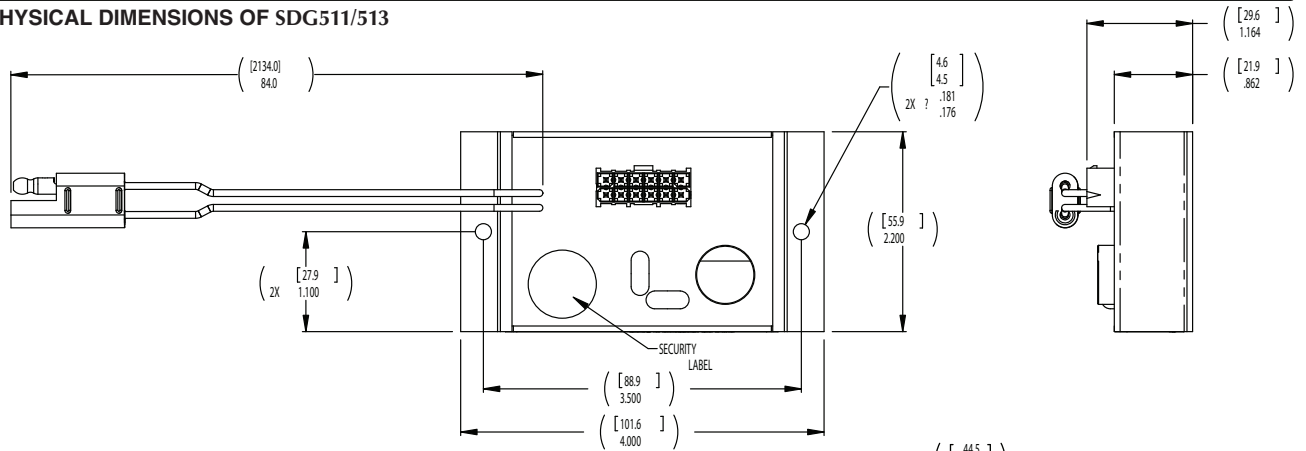
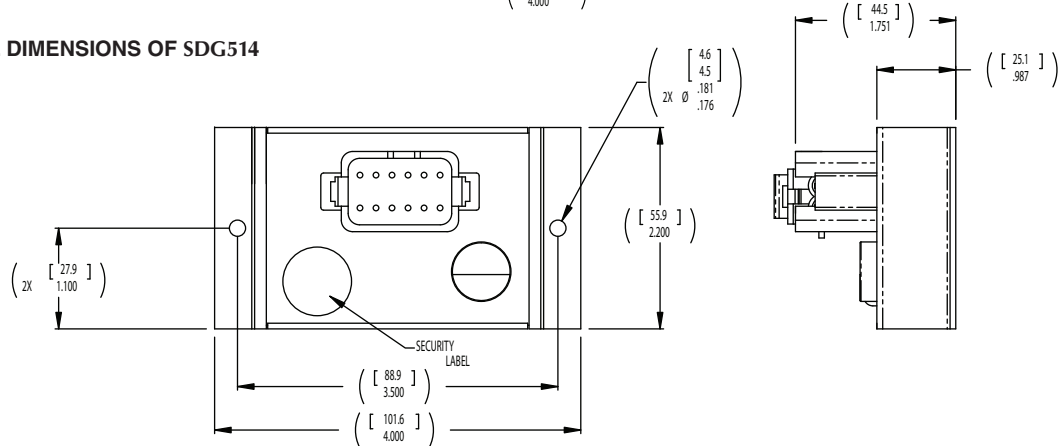


DIAGRAM 3. PHYSICAL DIMENSIONS OF SDG514



WIRING THE SDG

SDG510 & SDG512 use the below listed DIAGRAMS & TABLES	SDG511 & SDG513 use the below listed DIAGRAMS & TABLES
GENERAL WIRING INSTRUCTIONS	GENERAL WIRING INSTRUCTIONS
DIAGRAM 4	DIAGRAM 5
TABLE 2 & 3	TABLE 2 & 4
Deutsch Cable Connector DT06-12SA & W12S	SAMTEC IPBD-06-D
Duetsch Pins 0462-201-16141	SAMTEC Pins CC69L-1620-01-T-HP
SDG514 use the below listed DIAGRAMS & TABLES	
GENERAL WIRING INSTRUCTIONS	
DIAGRAM 6	
TABLE 2 & 5	
Deutsch Cable Connector DT06-12SA & W12S	
Duetsch Pins 0462-201-16141	

TABLE 2.

All SDG500 Series		Speed Select
Connector Pin 2	Connector Pin 3	
No Connect	No Connect	Variable Speed*
Battery -	No Connect	Fixed Speed 1
No Connect	Battery -	Fixed Speed 2
Battery -	Battery -	Fixed Speed 3
*A 10K Variable Speed Potentiometer needs to be connected to activate.		

BEFORE BEGINNING INSTALLATION

! Disconnect all electrical power to the machine. Make sure the machine cannot operate during installation. Follow all safety warnings of the machine manufacturer. Read and follow instructions carefully.

GENERAL WIRING INSTRUCTIONS

- For specific wiring instructions on **Connector Pins 2 & 3** for the **Samtec & Deutsch Connector** see **TABLE 2**.
- Battery connections to **Connector Pins 1 & 5** should be 16AWG (18mm²) or larger. Long cables require an increased wire size to minimize voltage drops.
- Battery positive(+) input to **Connector Pin 1** should be fused for 15A.
- The Magnetic Speed Sensor connections to **Connector Pin 11** on the **SDG510, SDG512 & SDG514** and **Connector Pin 8** on the **SDG511 & SDG513** must be twisted and/or shielded for their entire length. The speed sensor cable shield should be connected to ground.
- The shield should be insulated to insure that no other part of the shield comes in contact with engine ground, otherwise stray signals may be introduced into the **SDG500 Series** causing erratic operation.
- Connect the **Actuator Connector** to the connector on the actuator (**SDG510, SDG512, SDG511 & SDG513 only**).