IGC700 Series Integral Governor Control

- Integrated Governor Control for Constant or Variable Speed
- Applications like SDG 725 series
- Crank Termination, Fuel Valve or Solenoid Output, Alarm or Preheat
- Outputs (3 Relays)
- 5 Discrete type switch signal Inputs
- Micro-Processor Controller for intelligent system control
- Remote starting with battery system monitor
- PID loop for pump- or compressorpressure control.
- Small convenient size and mounting
- Panel Area Dimensions (127x110x40 mm)
- Panel cut out 96x96 mm (DIN), depth 24 mm

Introduction

The IGC700 is a highly configurable, compact, panel mounted module designed for the control and protection of diesel and spark ignited engines. This integrated speed control system is a high performance multi-functional isochronous digital speed control. The governor function can be used for wide range variable speed (Pumps, Hydraulic system, Sweepers, etc.) applications or constant speed Generator Sets. The front panel keypad allows direct settings and security without need of a laptop or special software. Customized firmware can also be downloaded into the flash memory with a laptop. Integrated "Start" and "Stop" buttons provide manual control and shutdown supervision with additional security. The monitoring and protection capability of the IGC700 includes inputs for up to 10 sensors, all of which are setup through the front panel keypad. Oil Pressure, Engine Coolant Temperature and Charge Level are dedicated standard inputs, which can be configured for either digital or analog inputs. The additional inputs can be configured to accept signals (switch-type, analog, active high or active low) through GAC's SmartView software. With this greater flexibility, conditions like Low Air Pressure, Low Oil Level, Low Coolant Level and Door Open can be configured and monitored with the proper sensory devices. All faults and failures are indicated by bright, multi-colored LEDs located on the front Annunciator Panel. The IGC700 is designed to take the appropriate action, which is to warn the operator of the faulty/failed condition and to shutdown the system if the condition is potentially damaging and/or dangerous. These actions are taken based on parameters set at the time of installation. THE IGC700 Series has three normally open 20 Amp relays with outputs that are common to battery voltage. These are provided for Crank Termination, Fuel Solenoid (shut down signal) and Glow Plug Preheating.

Specifications

Performance

Isochronous Operation & Steady State Stability ..... ±0.25% or better
Speed Range/Governor ..... 400 – 10KHz
Speed Drift with Temperature ..... < ± 1% Maximum
Idle Adjust ..... Full Range of set speed
Droop Range ..... 1 – 17% Regulation
Speed Trim Range ..... ±5% of Running Speed

Environmental

Ambient Operating Temperature Range ..... -40° to 85°C (-40° to +180°F)
Relative Humidity ..... Up to 95%
All Surface Finishes ..... Fungus Proof and Corrosion Resistant

Input / Output Parameters

Supply ..... 12 or 24Vdc Battery Systems (6.5Vdc to 33Vdc Nominal)
Polarity ..... Negative Ground (Case Isolated)
Power Consumption ..... 70mA max. continuous plus actuator current
Actuator Current Range@ 25°C (77°F) – (Inductive Load) ..... Max. 10 Amps continuous
Applicable actuator models ..... All GAC actuators, except ACB2001
Speed Sensor Signal ..... 0.5-120 Volts RMS
Discrete Outputs (Alarm/AUX ..... Sink up to 500mA@25°C

Configuration Parameters

Flywheel Teeth Range ..... 50 – 250
Range (Gain and Stability Multiplier) 1,2,3
Fixed Speed settings ..... 0-Max RPM*
Variable Speed settings ..... 0-Max RPM*
Overspeed Setting ..... 0-Max RPM*
Starting Fuel Begin Point ..... 0-Max Fuel

Reliability

Vibration ..... 7G@20-100Hz.
Testing ..... 100% Functionally Tested

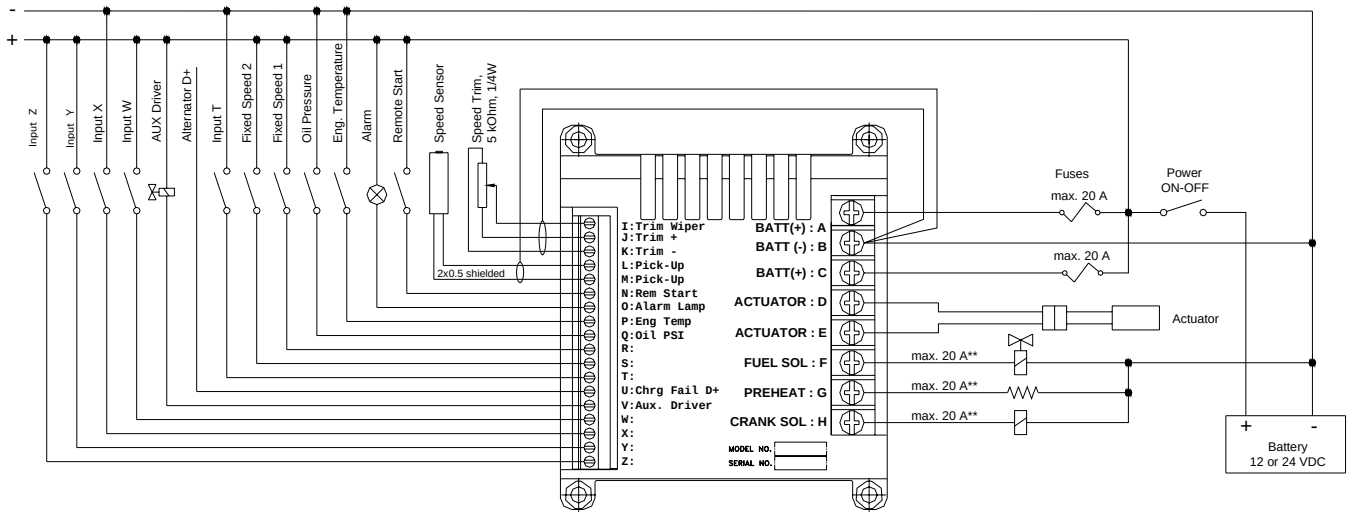
Physical

Dimensions ..... 9.6cm x 9.6cm x 3.7cm (3.765 x 5.55 x 1.44 inches)
Weight 0.64kg (1.41lbs)
Mounting ..... Panel Mounted, vertical preferred
Sealing ..... IP 54, using optional gasket

*Note: Max RPM is based on the Flywheel Teeth.

- RPM = Frequency * 60/FlywheelTeeth.
- Maximum frequency is 10,000 Hz.

Wiring Diagram



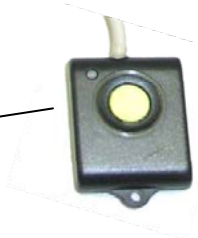
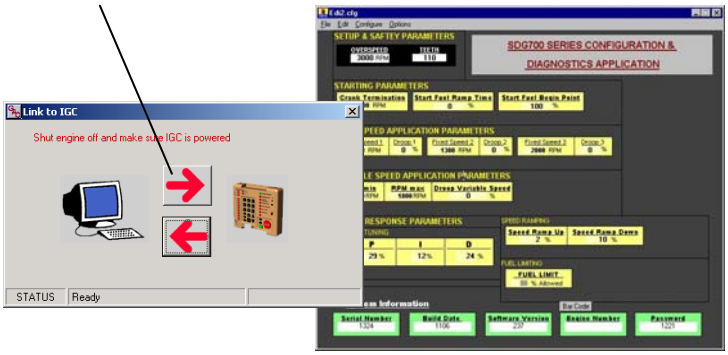
Configurable Inputs

Input	dedicated to	Fix Configured as:	Free Configurable as:	
N	Remote Start	Switch	-	-
P	Engine Temperature		Switch	0-10 VDC
Q	Oil Pressure		Switch	0-10 VDC
R	Fixed Speed 1		Switch	0-10 VDC
S	Fixed Speed 2		Switch	0-10 VDC
T	-		Switch	0-10 VDC
U	Charging Failure	0-24 VDC	-	-
W	-		Switch	0-10 VDC
X	-		Switch	NTC Sensor
Y	-		Switch	0-10 VDC
Z	-		Switch	0-10 VDC

Configuration Possibilities (access code protected)

Via Key Pad or Via Diagnostic Port with:

- TSE-205 Programmer
  for download of configuration only



- TSE-208 SmartView Kit (Dongle and PC software)
  for upload and download of configuration