The control system limits the engine speed to 5000 Hz (3000 RPM) when running with a droop setting below 5%.

A speed sensor signal of 3 volts RMS or greater at governed speed is necessary. A strong magnetic speed sensor signal will eliminate the possibility of missed or erratic speed control.

DROOP is typically used for the paralleling of engine driven generators. When paralleling, droop will decrease as engine load increases. The percentage of droop is based on the engine speed change from no engine load to full load.

NOTE

The Overspeed setting may need to be reset. Check the engine speed setting.

NOTE

If instability persists, adjust the next parameter.

Finally, move the adjustment one division further counter-clockwise to insure stable performance (270° potentiometer).

To maintain engine stability at the maximum speed setting, the speed control unit must be set with a droop setting of at least 10%.

NOTE

When the engine is running at the desired speed, push and hold the TEST button.

When the engine is at idle speed, the speed control unit applies droop to the actuator.

NOTE

Normal adjustments made at no load achieve satisfactory performance. If changes are needed, refer to Section 10 (SYSTEM TROUBLESHOOTING).

The +10 volt regulated supply, Terminal P, can be utilized to provide power to GAC governor system accessories. Up to 20 mA of current can be drawn from this supply. Ground reference is Terminal G.

The following procedure will set the overspeed function to approximately 10% above the requested speed.

1. When the engine is running at the desired speed, push and hold the TEST button.

2. While holding the TEST button, rotate the OVERSPEED adjustment clockwise until the LED lights and the relay energizes to the maximum fuel position until the engine starts. The governor system should now be set with the +10 volt regulated supply, Terminal P, as the overspeed function is complete.

3. Release the TEST button.

4. After engine stops, press the RESET button or remove the battery power.

5. Restart the engine. It will return to the original speed setting.

NOTE

Always use the relay contacts provided to shut down the system by a means other than the governor or actuator. It is recommended that the overspeed protection system be tested and verified during scheduled service of equipment.

NOTE

Gain must be adjusted/or and/or shunted for their entire length.

Gap between speed sensor and gear teeth should not be smaller than 0.020 in. (0.51 mm)

Speed sensor voltage should be at least 1V AC RMS during idle.

A 15 amp fuse must be installed in the positive battery lead to protect against reverse voltage.

Battery positive (+) input is Terminal F

Gap between speed sensor and gear teeth should not be smaller than 0.020 in. (0.51 mm)

NOTE

Normal adjustments made at no load achieve satisfactory performance. If changes are needed, refer to Section 10 (SYSTEM TROUBLESHOOTING).

The +10 volt regulated supply, Terminal P, can be utilized to provide power to GAC governor system accessories. Up to 20 mA of current can be drawn from this supply. Ground reference is Terminal G.

The following procedure will set the overspeed function to approximately 10% above the requested speed.

1. When the engine is running at the desired speed, push and hold the TEST button.

2. While holding the TEST button, rotate the OVERSPEED adjustment clockwise until the LED lights and the relay energizes to the maximum fuel position until the engine starts. The governor system should now be set with the +10 volt regulated supply, Terminal P, as the overspeed function is complete.

3. Release the TEST button.

4. After engine stops, press the RESET button or remove the battery power.

5. Restart the engine. It will return to the original speed setting.

NOTE

Always use the relay contacts provided to shut down the system by a means other than the governor or actuator. It is recommended that the overspeed protection system be tested and verified during scheduled service of equipment.

NOTE

Normal adjustments made at no load achieve satisfactory performance. If changes are needed, refer to Section 10 (SYSTEM TROUBLESHOOTING).

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The following procedure will set the overspeed function to approximately 10% above the requested speed.

1. When the engine is running at the desired speed, push and hold the TEST button.

2. While holding the TEST button, rotate the OVERSPEED adjustment clockwise until the LED lights and the relay energizes to the maximum fuel position until the engine starts. The governor system should now be set with the +10 volt regulated supply, Terminal P, as the overspeed function is complete.

3. Release the TEST button.

4. After engine stops, press the RESET button or remove the battery power.

5. Restart the engine. It will return to the original speed setting.

NOTE

Always use the relay contacts provided to shut down the system by a means other than the governor or actuator. It is recommended that the overspeed protection system be tested and verified during scheduled service of equipment.

NOTE

Normal adjustments made at no load achieve satisfactory performance. If changes are needed, refer to Section 10 (SYSTEM TROUBLESHOOTING).

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The following procedure will set the overspeed function to approximately 10% above the requested speed.

1. When the engine is running at the desired speed, push and hold the TEST button.

2. While holding the TEST button, rotate the OVERSPEED adjustment clockwise until the LED lights and the relay energizes to the maximum fuel position until the engine starts. The governor system should now be set with the +10 volt regulated supply, Terminal P, as the overspeed function is complete.

3. Release the TEST button.

4. After engine stops, press the RESET button or remove the battery power.

5. Restart the engine. It will return to the original speed setting.

NOTE

Always use the relay contacts provided to shut down the system by a means other than the governor or actuator. It is recommended that the overspeed protection system be tested and verified during scheduled service of equipment.

NOTE

Normal adjustments made at no load achieve satisfactory performance. If changes are needed, refer to Section 10 (SYSTEM TROUBLESHOOTING).

The +10 volt regulated supply, Terminal P, can be utilized to provide power to GAC governor system accessories. Up to 20 mA of current can be drawn from this supply. Ground reference is Terminal G.

The following procedure will set the overspeed function to approximately 10% above the requested speed.

1. When the engine is running at the desired speed, push and hold the TEST button.

2. While holding the TEST button, rotate the OVERSPEED adjustment clockwise until the LED lights and the relay energizes to the maximum fuel position until the engine starts. The governor system should now be set with the +10 volt regulated supply, Terminal P, as the overspeed function is complete.

3. Release the TEST button.

4. After engine stops, press the RESET button or remove the battery power.

5. Restart the engine. It will return to the original speed setting.

NOTE

Always use the relay contacts provided to shut down the system by a means other than the governor or actuator. It is recommended that the overspeed protection system be tested and verified during scheduled service of equipment.
<table>
<thead>
<tr>
<th>Instability</th>
<th>Symptom</th>
<th>Probable Cause of Abnormal Reading</th>
<th>Normal Reading</th>
<th>Probable Cause of Abnormal Reading</th>
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<tr>
<td>Fast Periodic</td>
<td>The engine seems to start with a delay or fails to maintain its desired speed.</td>
<td>Readjust the GAIN and STABILITY for optimum control.</td>
<td>Turn off all electrical equipment that may be causing interference.</td>
<td></td>
</tr>
<tr>
<td>Slow Periodic</td>
<td>An irregularity in speed below 3 Hz. (Sometimes severe)</td>
<td>Readjust the GAIN and STABILITY. Set DIP switches 1 and 2 to “ON” in the following order: First SW1, Second SW2, and Third SW1 &amp; SW2.</td>
<td>Check fuel system linkage during engine operation for: a. binding b. high friction c. poor linkage</td>
<td></td>
</tr>
<tr>
<td>Non-Periodic</td>
<td>Energetic Engine Behavior</td>
<td>Increasing the GAIN should reduce the instability but not totally correct it. If this is the case, there is most likely a problem with the engine itself. Check for: a. oil in fuel b. an erratic fuel system c. load changes on the generator set voltage regulator.</td>
<td>1. If throttle is slightly erratic, but performance is OK, move switch SW1 to the “OFF” position.</td>
<td></td>
</tr>
</tbody>
</table>

If unsuccessful in solving instability, contact OAC for assistance. info@governors-america.com or call 413-786-5600

### Unatisfactory Performance

**SYMPTOM** | **NORMAL READING** | **PROBABLE CAUSE OF ABNORMAL READING**
---|---|---
Engine Overspeed | 1. Do Not Crank. Apply DC power to the governor system. | 1. After the actuator goes to full fuel, disconnect the speed sensor or terminal C & D and the speed control unit is defective. |
| | 2. Manually hold the engine at the desired running speed. Measure the DC voltage across Terminals A & F at the speed control unit. | 2. If the reading is 1.0 to 2.0 VDC; a. SPEED adjustment is set above desired speed b. Defective speed sensor unit |
| Overspeed Shut Down Engine After Running Speed is Reached | | 2. If the reading is above 2.0 VDC; then check for: a. actuator binding b. linkage binding c. poor linkage |
| Overspeed Shut Down Engine Before Speed is Reached | | 3. If the voltage reading is below 1.0 VDC; a. Defective speed control unit |

### Specifications

#### Performance
- Isochronous Operation: ± 0.25% or better
- Speed Range / Governor: 1 - 7.5 KHz Continuous
- Speed Drift with Temperature: ±1% Maximum
- Idle Adjust CW: Min. 1200 Hz below set speed
- Idle Adjust CCW: Min. 4100 Hz below set speed
- Drop Range: 1 - 8% regulation
- Drop Adj. Max. (K-L jumpered): 875 Hz, ±75 Hz per 1.0 A change
- Drop Adj. Min. (K-L jumpered): 15 Hz, ±10 Hz per 1.0 A change
- Speed Trim Range: 1 - 200 Hz
- Remote Variable Speed Range: 500 - 7.5 KHz

#### Input / Output
- DC Supply: 10 - 24 VDC Battery Systems
- Transient and Reverse Voltage Protected
- Polarity: Negative Ground (Case Isolated)
- Power Consumption: 50 mA continuous plus actuator current
- Actuator Current Range: Max. 10 A @ 77°F (25°C)
- Speed Sensor Signal: 0 - 1200 VAC
- Speed Switch Relay Contacts: 10 Amperes (N.O. and N.C.)

#### Reliability
- Vibration: 50 @ 20 - 500 Hz
- Testing: 100% Functional Testing

#### Environmental
- Ambient Temperature: -40° to 85°C (-40 to 180°F)
- Relative Humidity: up to 95%
- All Surface Finishes: Fungus Proof and Corrosion Resistant

#### Compliance / Standards
- Agency: CE and RoHS Requirements
- Dimension: See Wiring and Outline Diagram
- Weight: 1.8 lbs. (0.82 kg)
- Mounting: Any position, Vertical Preferred

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