



Installation and Troubleshooting Manual



EPG Electrically Powered Governor

**Models 1712/1724 and 512/524
without Position Feedback**

Manual 82329 (Revision J)

WARNING—DANGER OF DEATH OR PERSONAL INJURY



WARNING—FOLLOW INSTRUCTIONS

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment. Practice all plant and safety instructions and precautions. Failure to follow instructions can cause personal injury and/or property damage.



WARNING—OUT-OF-DATE PUBLICATION

This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, be sure to check the Woodward website:

www.woodward.com/pubs/current.pdf

The revision level is shown at the bottom of the front cover after the publication number. The latest version of most publications is available at:

www.woodward.com/publications

If your publication is not there, please contact your customer service representative to get the latest copy.



WARNING—OVERSPEED PROTECTION

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.



WARNING—PROPER USE

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

CAUTION—POSSIBLE DAMAGE TO EQUIPMENT OR PROPERTY



CAUTION—BATTERY CHARGING

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.



CAUTION—ELECTROSTATIC DISCHARGE

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts.

- Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).
- Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.
- Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.

IMPORTANT DEFINITIONS

- A **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- A **CAUTION** indicates a potentially hazardous situation which, if not avoided, could result in damage to equipment or property.
- A **NOTE** provides other helpful information that does not fall under the warning or caution categories.

Revisions—Text changes are indicated by a black line alongside the text.

Woodward Governor Company reserves the right to update any portion of this publication at any time. Information provided by Woodward Governor Company is believed to be correct and reliable. However, no responsibility is assumed by Woodward Governor Company unless otherwise expressly undertaken.

© Woodward 1984
All Rights Reserved

Contents

ELECTROSTATIC DISCHARGE AWARENESS	ii
CHAPTER 1. GENERAL INFORMATION.....	1
Introduction.....	1
Associated Publications	1
EPG Models	1
CHAPTER 2. INSTALLATION AND TROUBLESHOOTING	6
Installation	6
Installation Check and Troubleshooting.....	8
CHAPTER 3. SERVICE OPTIONS	12
Product Service Options.....	12
Returning Equipment for Repair.....	13
Replacement Parts	14
How to Contact Woodward.....	14
Engineering Services	15
Technical Assistance.....	16
DECLARATIONS.....	17

Illustrations and Tables

Figure 1-1a. EPG Control and Actuators	2
Figure 1-1b. EPG Control Faceplate	3
Figure 1-2. Wiring Diagram (Isochronous EPG)	4
Figure 1-3. Wiring Diagram (EPG with Droop).....	4
Figure 1-4. Wiring Diagram (EPG Models 8290-191, -192).....	4
Figure 2-1. Actuator Linkages	7

Electrostatic Discharge Awareness

All electronic equipment is static-sensitive, some components more than others. To protect these components from static damage, you must take special precautions to minimize or eliminate electrostatic discharges.

Follow these precautions when working with or near the control.

1. Before doing maintenance on the electronic control, discharge the static electricity on your body to ground by touching and holding a grounded metal object (pipes, cabinets, equipment, etc.).
2. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
3. Keep plastic, vinyl, and Styrofoam materials (such as plastic or Styrofoam cups, cup holders, cigarette packages, cellophane wrappers, vinyl books or folders, plastic bottles, and plastic ash trays) away from the control, the modules, and the work area as much as possible.
4. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
 - Do not touch any part of the PCB except the edges.
 - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
 - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.



CAUTION—ELECTROSTATIC DISCHARGE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Chapter 1.

General Information

Introduction

Each Woodward Electrically Powered Governor (EPG) system includes three basic parts:

- A magnetic pickup (MPU) which senses engine speed from an engine-driven gear.
- A speed control which receives the speed signal from the MPU, compares it to a reference signal, and generates a control signal which the control sends to the actuator.
- An actuator which receives the signal from the control and positions its output shaft according to this signal. The output shaft is linked to the fuel control.

There are two EPG models:

- The isochronous speed control, which is available with start-fuel limit or dual dynamics;
- The droop speed control, which includes a load sensor and provides droop control for generator sets.

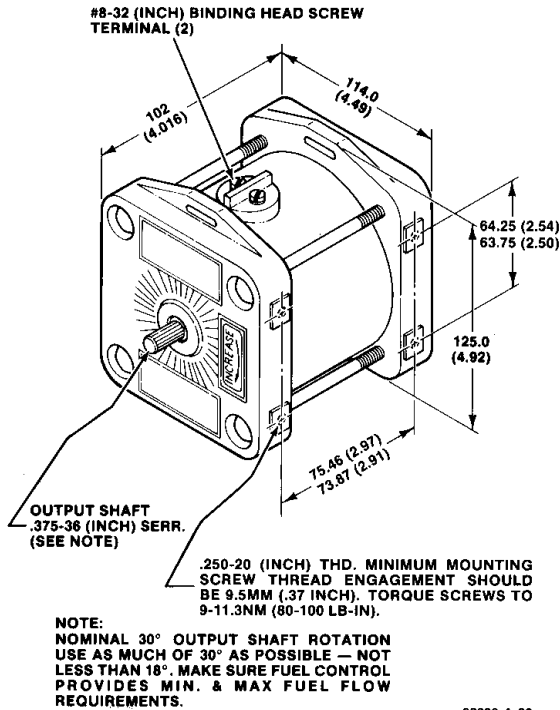
Different actuator sizes are available for different work output requirements. Models are available for either 12 or 24 volt systems.

Associated Publications

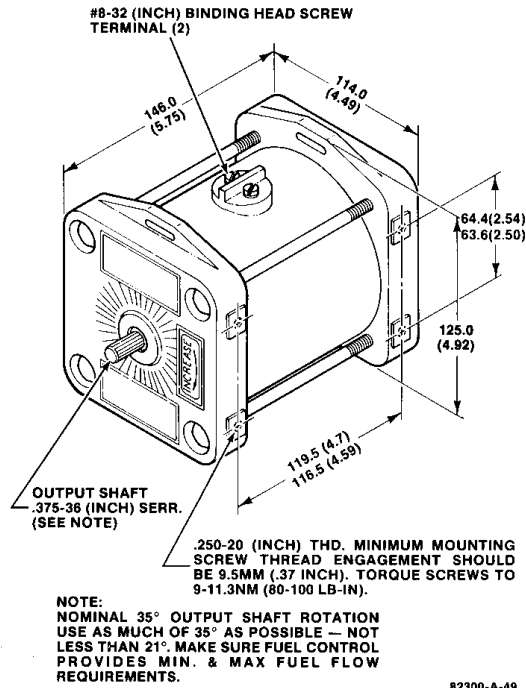
Manual	Title
82313	<i>Generator Load Sensor</i>
25070	<i>Electronic Control Installation Guide</i>
82510	<i>Magnetic Pickups & Proximity Switches for Electronic Controls</i>
82493	<i>Isochronous EPG</i>
82327	<i>EPG with Droop</i>
82476	<i>Ramp Generator</i>
Product Spec.	Title
04106	<i>EPG Electrically Powered Governors</i>
82314	<i>Generator Load Sensor</i>

EPG Models

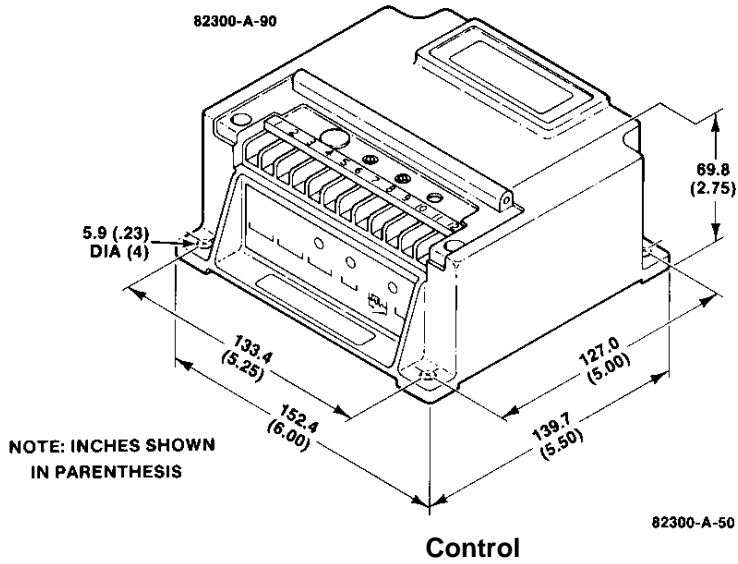
Model	Battery Voltage	Work Output
512	10–16 V	0.7 J (0.5 ft-lb)
524	20–32 V	1.0 J (0.75 ft-lb)
1712	10–16 V	1.6 J (1.2 ft-lb)
1724	20–32 V	2.3 J (1.7 ft-lb)



512/524 Actuator

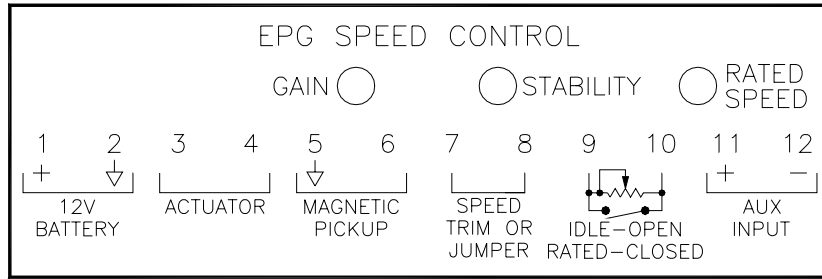


1712/1724 Actuator

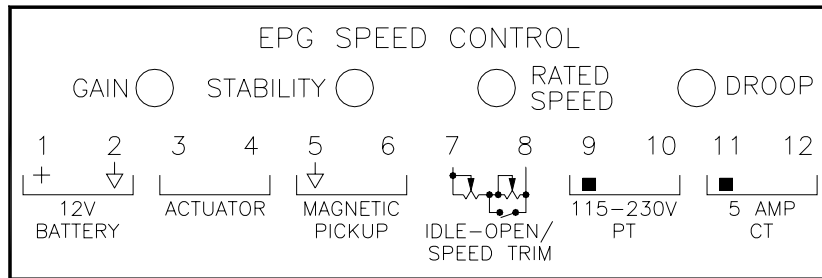


MOUNTING SCREWS
0.250-20 (inch) thread. Minimum mounting screw engagement should be 9.5 mm (0.375 inch). Torque screws to 9–11 N·m (80–100 lb-in).

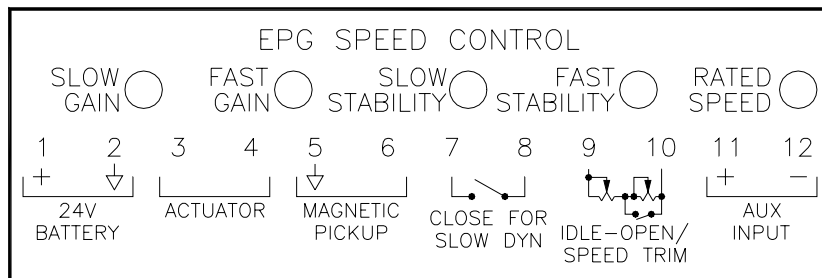
Figure 1-1a. EPG Control and Actuators



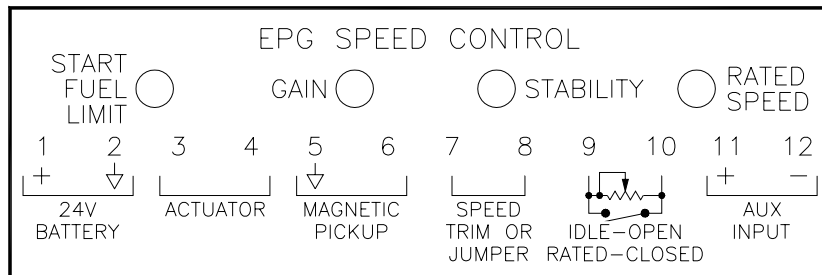
STANDARD EPG (WITHOUT DROOP)



STANDARD EPG (WITH DROOP)



DUAL DYNAMICS CONTROL



START FUEL LIMIT CONTROL

823-656
06-3-17

Figure 1-1b. EPG Control Faceplate

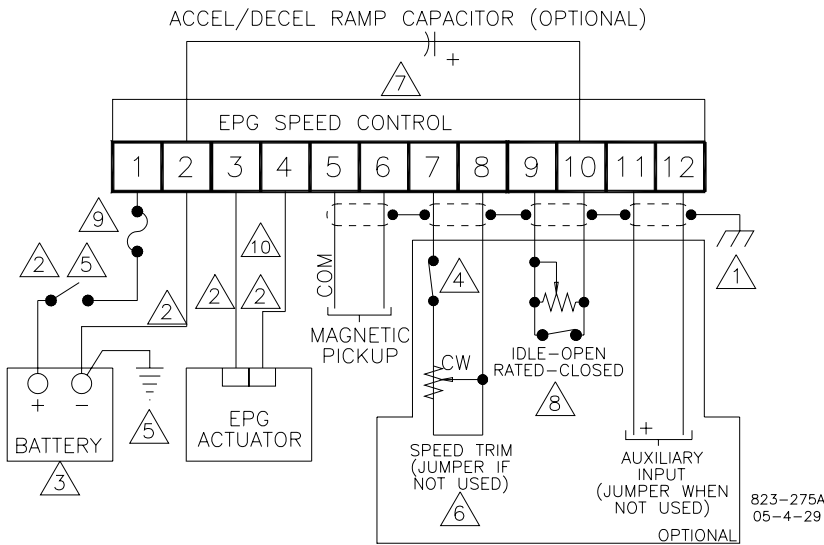


Figure 1-2. Wiring Diagram (Isochronous EPG)

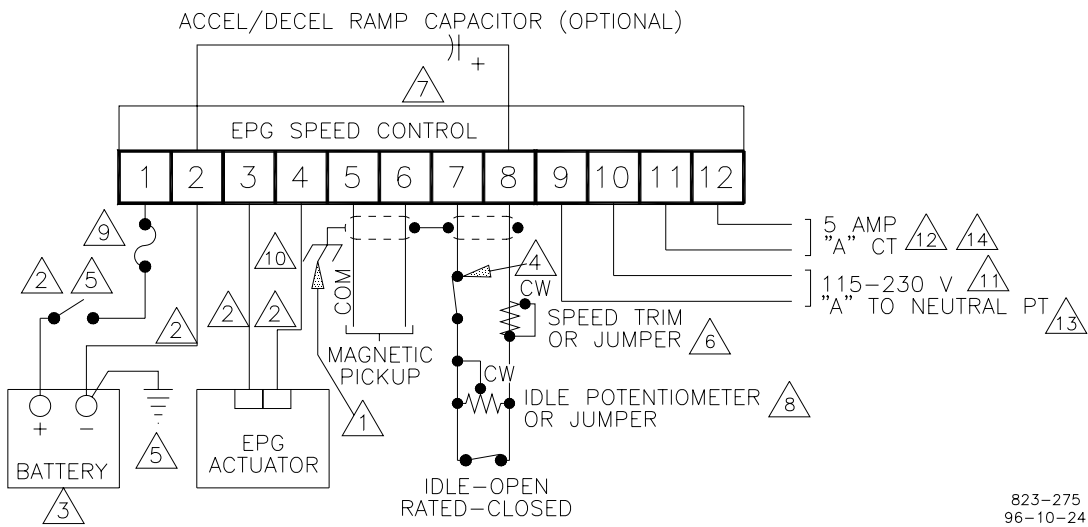


Figure 1-3. Wiring Diagram (EPG with Droop)

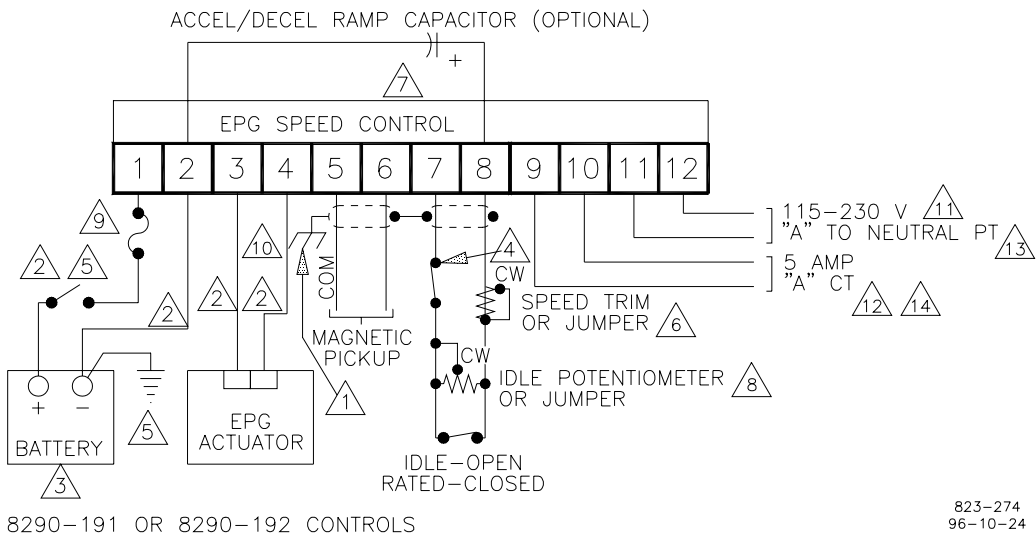


Figure 1-4. Wiring Diagram (EPG Models 8290-191, -192)

Wiring Diagram Notes

1. Shielded wires to be twisted pairs or twisted 3-conductor, grounded at one end only.
2. 4 or 2 mm² (12 or 14 AWG) stranded wire, must be as short as possible. Total of distance from battery to control, and from control to actuator, to be as short as possible (see maximum length in chart).
3. See EPG Models above for source voltages.
4. Open for minimum fuel. Do not use either the minimum fuel option, or disconnect the actuator leads, or disconnect the power to the control as part of any emergency stop sequence.
5. For positive ground systems, switch and fuse to be located in series with battery (-) and terminal 2. Positive (+) terminal becomes chassis ground. Leads from battery to terminals 1 and 2 must be direct and not pass through distribution points.
6. Approximate speed change with trim potentiometer:
 ±2.5% using a 1 kΩ potentiometer
 ±5% using a 2 kΩ potentiometer
7. About one second ramp time per 50 μF. Capacitor specification: 200 μF maximum, 15 W minimum, less than 30 μAdc leakage current over temperature range.
8. Idle range about 25% to 200% of rated, using 50 k potentiometer. For fixed idle, calculate the value of the resistor:

$$R = 17 \text{ k}\Omega \left(\frac{\text{Rated Speed}}{\text{Idle Speed}} - 1 \right)$$

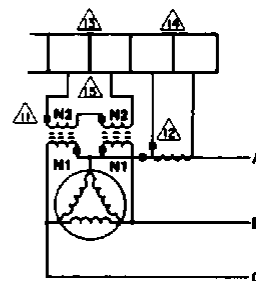
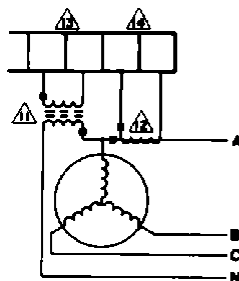
9. 512/24 and 1712/24 use a 10 A fuse.
10. Polarity not important.
11. With a balanced load and unity power factor (PF=1), the current transformer should be wired in the correct potential leg, and must be be phased at the control so the potential at terminal 9 to 10 is in phase with the CT from terminal 11 to 12.
12. Power source current transformers should be sized to produce a 5 A secondary current, with maximum generator current. CT burden is essentially 0 VA.
13. Absolute minimum signal must be 95 Vrms. Absolute maximum signal must be 260 Vrms. Potential transformer burden is 20 VA.
14. This control contains an internal current transformer. This transformer must be connected across the power source transformer whenever the unit is running to prevent lethal high voltage from developing on leads to these terminals.
15. On systems without a neutral, the voltage at terminal 9 to 10 is 1.73 times N2/N1 times the line-to-line voltage.

Maximum Wiring Length Chart

System Voltage	Maximum Wire Length	
	2 mm ² (14 AWG)	4 mm ² (12 AWG)
12 V (512/1712)	3 m (10 ft)	6 m (20 ft)
24 V (524/1724)	11 m (35 ft)	23 m (75 ft)

Wire Harness Part Numbers

Harness Part Number	Harness Lengths		
	MPU	Actuator	Battery
8924-621	10 ft (3 m)	15 ft (4.6 m)	15 ft (4.6 m)
8924-620	10 ft (3 m)	25 ft (7.6 m)	25 ft (7.6 m)



Chapter 2.

Installation and Troubleshooting

Installation

Speed Control

The speed control box should be mounted on the control panel, often on the same skid as the engine. It is not designed for installation on the engine. Provide space for adjustment, wiring access, and ventilation. Choose a location that protects the control from being bumped and that the wiring harness will reach. The installation should allow for adequate air circulation to the control box and have an ambient temperature of -40 to $+75$ °C (-40 to $+167$ °F).

Actuator

Install the actuator solidly, and install a linkage with the correct configuration to provide an almost linear relationship between change of actuator position and change in engine power output. In most cases use about 2/3 of the actuator rotation between minimum and maximum fuel. The engine fuel control usually provides the minimum and maximum stops. The minimum and maximum stops on the actuator may be used, if necessary (see Figure 2-1). If the actuator is controlling the speed-setting shaft of a mechanical governor, use the actuator stops to limit the travel of the linkage. Set the minimum stop for 5% below rated speed at no load, and set the maximum stop for rated speed plus 3% more than the droop of the governor. The actuator is designed to operate in ambient temperatures of -40 to $+82$ °C (-40 to $+180$ °F). Installation should avoid sources of excessive heat.



CAUTION—BEARING PROTECTION

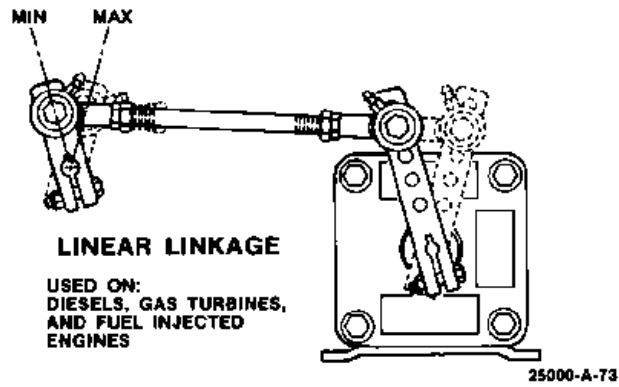
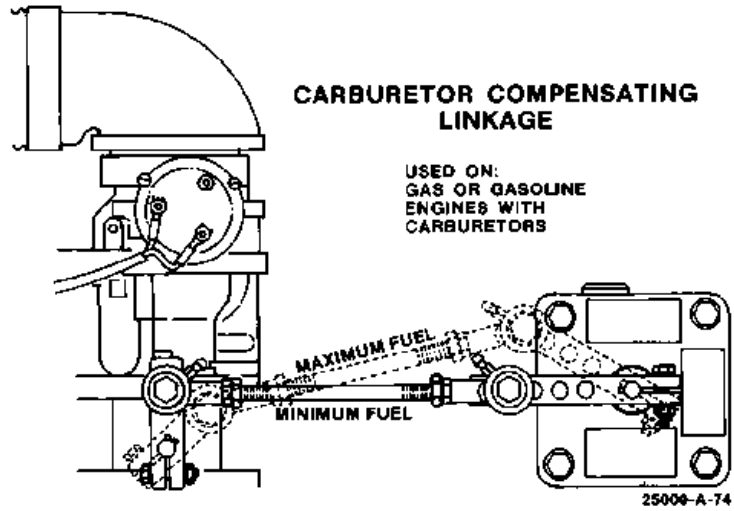
Do not pressure wash sealed bearings—you may force dirt inside them, shortening their life. If the actuator is exposed to weather, mount it with the clockwise end higher, if possible.

Magnetic Pickup (MPU)

Install the magnetic pickup on a rigid bracket or housing so its tip is near an engine-driven gear. This gear must be made of a ferrous material that reacts to a magnetic field. Adjust the MPU for 0.25 to 1.0 mm (0.010 to 0.040 inch) between the gear and the MPU at the closest point.

Electrical Connections

Connect the system as shown in the appropriate wiring diagram (Figures 1-2, 1-3, 1-4). See the appropriate manual for wiring of accessories. Connect the speed control to system ground.



CONTROLLING A MECHANICAL GOVERNOR

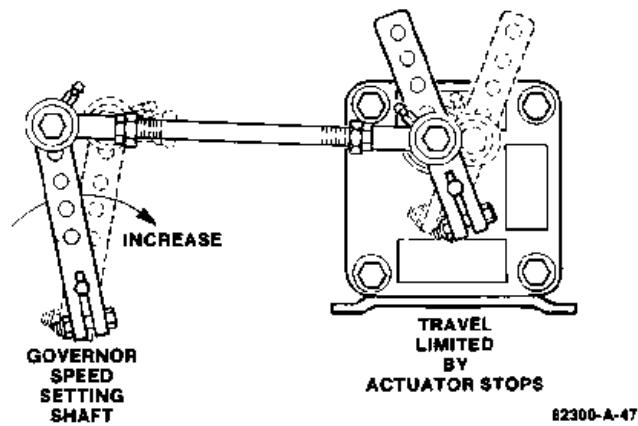


Figure 2-1. Actuator Linkages

Shields

Use twisted-pair, shielded wire where the wiring diagram shows. Each shield must be grounded only at the end nearest the control. Do not ground both ends of a shield. Tie all shields to the same ground point. When passing a shield through a terminal block, connect the shield to its own terminal. Do not ground the shield at the terminal block. Do not solder to braided shields.



CAUTION—BATTERY

Damage to the speed control will occur if the battery is disconnected while the alternator or battery charging device is energized and connected to the control.

Installation Check and Troubleshooting

All Units

To verify correct system operation after installation and any time trouble occurs, do the following checks in the order given. Disconnect all accessories. Leave the IDLE/RATED switch or jumper connected. On isochronous EPGs, jumper terminal 7 to terminal 8, and terminal 11 to terminal 12. On EPGs with droop, leave terminals 9, 10, 11, and 12 disconnected with CT and PT wires properly secured for safety. On EPGs with dual dynamics, leave terminals 7 and 8 open to select primary (fast) dynamics.

If the system does not respond as indicated, find the fault and correct it.

1. Check electrical connections:
Correct?
Tight?
2. Magnetic Pickup:
Correctly adjusted?
Tight?
Resistance of 50–350 Ω ?
3. Close the IDLE/RATED switch (or install a jumper).
4. Turn the governor power on: (Do not start the engine or turbine.)
Fuse OK?
Actuator shaft settles in minimum fuel position?
5. Battery Voltage:
10 to 16 Vdc for model 512, 1712?
20 to 32 Vdc for model 524, 1724?

Gain and Stability

6. Set the IDLE potentiometer (pot) (if used) to mid-position.
7. Set the RATED speed pot fully counterclockwise (to minimum speed setting).
8. Set the GAIN and STABILITY pots to mid-position.
9. Set START FUEL LIMIT clockwise (if applicable).
10. Start the engine or turbine, following manufacturer's instructions.



WARNING—START-UP

Be prepared to make an emergency shutdown when starting the engine, turbine, or other type of prime mover, to protect against runaway or overspeed with possible personal injury, loss of life, or property damage.

Verify:

- MPU voltage between terminals 5 and 6 at least 1.5 Vrms while cranking? (For small gears, it may be necessary to decrease the MPU clearance). Do not decrease below 0.25 mm (.010 inches).
- Actuator should go to maximum fuel position when the starter turns engine or turbine. (If applicable, Start Fuel Limit must be fully clockwise.)
- When the engine or turbine starts and comes to speed, the actuator arm should move toward minimum-fuel position.

11. Adjust the GAIN pot to the stable region between low-frequency and high-frequency oscillation.
12. If there is a low-frequency oscillation which does not stop when the GAIN pot is adjusted, turn the STABILITY pot slightly clockwise and try the GAIN pot adjustment again. Continue adjusting the STABILITY pot slightly clockwise, then readjusting the GAIN pot, until the engine runs at a steady speed.

If there is a high-frequency oscillation which will not stop, even when the GAIN pot is fully counterclockwise, adjust the STABILITY pot slightly counterclockwise until the high-frequency oscillation stops.

Speed Settings

13. Adjust the RATED SPEED pot for the desired rated speed.
14. Set the IDLE SPEED pot for the desired idle speed.
15. Close the IDLE/RATED switch.
16. Adjust transient response. Simulate a transient by manually bumping the linkage.

To decrease settling time (may increase ringing) after a transient, turn the GAIN pot clockwise slightly, then turn the STABILITY pot as required to eliminate oscillation and to obtain desired response. Repeat if necessary.

To decrease ringing (will increase settling time) after a transient, turn the GAIN pot counterclockwise slightly, then turn the STABILITY pot as required to eliminate oscillation and obtain desired response. Repeat if necessary.

17. Select alternate dynamics and alternate fuel, if applicable. Repeat this step as necessary.

This completes the check of units without droop. For units with droop, do the following additional steps.

Droop Adjustment (only for units with droop)



NOTE

The EPG Load Sensor Module cannot be used with the EPG model that has internal droop.

For Isolated Load:

1. Connect the PT wires to terminals 9 and 10 and the CT wires to terminals 11 and 12. Verify correct polarity (see the wiring diagram).
2. Adjust the RATED SPEED pot for rated speed with no load.
3. Apply 100% rated load or available load.



WARNING—OVERSPEED

If engine speed increases when load is applied, there is danger of death, personal injury, or damage to equipment. Be prepared to control the engine or turbine manually by forcing the actuator arm toward the minimum-fuel position. If engine speed does increase with load, reverse either the PT or CT input wires.

4. Adjust the DROOP pot to give a speed of:

$$\text{Rated Speed} - \frac{\% \text{Droop} \times \text{Rated Speed}}{100\%} \times \frac{\% \text{Load}}{100\%}$$

Example 1:

The generator set is a 60 Hz unit with an isolated load. If the desired droop is 5% and the generator set can be run at 100% load, then the speed at full load would be 57 Hz.

Example 2:

It is again desired to set the droop of the same generator set to 5%, but this time the generator set cannot be run at 100% load. The generator set is therefore run at 50% load and the speed (in step 3) would be 58.5 Hz.

Example 3:

The generator set is a 60 Hz unit that will be paralleled with an infinite bus. If the desired droop is 5% and the generator set can be run at 100% load, the speed at which the generator is run (in step 2) would be 63 Hz.

Example 4:

It is again desired to set the droop of the same generator set to 5%, but this time the generator set cannot be run at 100% load. It has been decided to run the generator set at 50% load, so the speed (in step 2) at which the generator set is run would be 61.5 Hz. In step 7, the DROOP pot is then turned counterclockwise only until the load is 50%.

Paralleled with Infinite Bus:

1. Run the generator set unloaded at rated speed.
2. Adjust the RATED SPEED pot to give a speed of:

$$\text{Rated Speed} - \frac{\% \text{Droop} \times \text{Rated Speed}}{100\%} \times \frac{\% \text{Load}}{100\%}$$

3. Mark the position of the pot and return to rated speed.
4. Turn the DROOP pot fully clockwise (for maximum droop).
5. Synchronize the generator to, and parallel it with, the bus.
6. Return the RATED SPEED pot to the mark made in step 3.
7. Turn the DROOP pot counterclockwise (decreasing droop) until load is 100% (or the desired % of load).

Chapter 3. Service Options

Product Service Options

The following factory options are available for servicing Woodward equipment, based on the standard Woodward Product and Service Warranty (5-01-1205) that is in effect at the time the product is purchased from Woodward or the service is performed:

- Replacement/Exchange (24-hour service)
- Flat Rate Repair
- Flat Rate Remanufacture

If you are experiencing problems with installation or unsatisfactory performance of an installed system, the following options are available:

- Consult the troubleshooting guide in the manual.
- Contact Woodward technical assistance (see “How to Contact Woodward” later in this chapter) and discuss your problem. In most cases, your problem can be resolved over the phone. If not, you can select which course of action you wish to pursue based on the available services listed in this section.

Replacement/Exchange

Replacement/Exchange is a premium program designed for the user who is in need of immediate service. It allows you to request and receive a like-new replacement unit in minimum time (usually within 24 hours of the request), providing a suitable unit is available at the time of the request, thereby minimizing costly downtime. This is also a flat rate structured program and includes the full standard Woodward product warranty (Woodward Product and Service Warranty 5-01-1205).

This option allows you to call in the event of an unexpected outage, or in advance of a scheduled outage, to request a replacement control unit. If the unit is available at the time of the call, it can usually be shipped out within 24 hours. You replace your field control unit with the like-new replacement and return the field unit to the Woodward facility as explained below (see “Returning Equipment for Repair” later in this chapter).

Charges for the Replacement/Exchange service are based on a flat rate plus shipping expenses. You are invoiced the flat rate replacement/exchange charge plus a core charge at the time the replacement unit is shipped. If the core (field unit) is returned to Woodward within 60 days, Woodward will issue a credit for the core charge. [The core charge is the average difference between the flat rate replacement/exchange charge and the current list price of a new unit.]

Return Shipment Authorization Label. To ensure prompt receipt of the core, and avoid additional charges, the package must be properly marked. A return authorization label is included with every Replacement/Exchange unit that leaves Woodward. The core should be repackaged and the return authorization label affixed to the outside of the package. Without the authorization label, receipt of the returned core could be delayed and cause additional charges to be applied.

Flat Rate Repair

Flat Rate Repair is available for the majority of standard products in the field. This program offers you repair service for your products with the advantage of knowing in advance what the cost will be. All repair work carries the standard Woodward service warranty (Woodward Product and Service Warranty 5-01-1205) on replaced parts and labor.

Flat Rate Remanufacture

Flat Rate Remanufacture is very similar to the Flat Rate Repair option with the exception that the unit will be returned to you in “like-new” condition and carry with it the full standard Woodward product warranty (Woodward Product and Service Warranty 5-01-1205). This option is applicable to mechanical products only.

Returning Equipment for Repair

If a control (or any part of an electronic control) is to be returned to Woodward for repair, please contact Woodward in advance to obtain a Return Authorization Number. When shipping the item(s), attach a tag with the following information:

- name and location where the control is installed;
- name and phone number of contact person;
- complete Woodward part number(s) and serial number(s);
- description of the problem;
- instructions describing the desired type of repair.



CAUTION—ELECTROSTATIC DISCHARGE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Packing a Control

Use the following materials when returning a complete control:

- protective caps on any connectors;
- antistatic protective bags on all electronic modules;
- packing materials that will not damage the surface of the unit;
- at least 100 mm (4 inches) of tightly packed, industry-approved packing material;
- a packing carton with double walls;
- a strong tape around the outside of the carton for increased strength.

Return Authorization Number

When returning equipment to Woodward, please telephone and ask for the Customer Service Department [1 (800) 523-2831 in North America or +1 (970) 482-5811]. They will help expedite the processing of your order through our distributors or local service facility. To expedite the repair process, contact Woodward in advance to obtain a Return Authorization Number, and arrange for issue of a purchase order for the item(s) to be repaired. No work can be started until a purchase order is received.



NOTE

We highly recommend that you make arrangement in advance for return shipments. Contact a Woodward customer service representative at 1 (800) 523-2831 in North America or +1 (970) 482-5811 for instructions and for a Return Authorization Number.

Replacement Parts

When ordering replacement parts for controls, include the following information:

- the part number(s) (XXXX-XXXX) that is on the enclosure nameplate;
- the unit serial number, which is also on the nameplate.

How to Contact Woodward

In North America use the following address when shipping or corresponding:

Woodward Governor Company
PO Box 1519
1000 East Drake Rd
Fort Collins CO 80522-1519, USA

Telephone—+1 (970) 482-5811 (24 hours a day)
Toll-free Phone (in North America)—1 (800) 523-2831
Fax—+1 (970) 498-3058

For assistance outside North America, call one of the following international Woodward facilities to obtain the address and phone number of the facility nearest your location where you will be able to get information and service.

<u>Facility</u>	<u>Phone Number</u>
Brazil	+55 (19) 3708 4800
India	+91 (129) 230 7111
Japan	+81 (476) 93-4661
The Netherlands	+31 (23) 5661111

You can also contact the Woodward Customer Service Department or consult our worldwide directory on Woodward's website (www.woodward.com) for the name of your nearest Woodward distributor or service facility.

Engineering Services

Woodward Industrial Controls Engineering Services offers the following after-sales support for Woodward products. For these services, you can contact us by telephone, by email, or through the Woodward website.

- Technical Support
- Product Training
- Field Service

Contact information:

Telephone—+1 (970) 482-5811

Toll-free Phone (in North America)—1 (800) 523-2831

Email—icinfo@woodward.com

Website—www.woodward.com

Technical Support is available through our many worldwide locations or our authorized distributors, depending upon the product. This service can assist you with technical questions or problem solving during normal business hours. Emergency assistance is also available during non-business hours by phoning our toll-free number and stating the urgency of your problem. For technical support, please contact us via telephone, email us, or use our website and reference **Customer Services** and then **Technical Support**.

Product Training is available at many of our worldwide locations (standard classes). We also offer customized classes, which can be tailored to your needs and can be held at one of our locations or at your site. This training, conducted by experienced personnel, will assure that you will be able to maintain system reliability and availability. For information concerning training, please contact us via telephone, email us, or use our website and reference **Customer Services** and then **Product Training**.

Field Service engineering on-site support is available, depending on the product and location, from one of our many worldwide locations or from one of our authorized distributors. The field engineers are experienced both on Woodward products as well as on much of the non-Woodward equipment with which our products interface. For field service engineering assistance, please contact us via telephone, email us, or use our website and reference **Customer Services** and then **Technical Support**.

Technical Assistance

If you need to telephone for technical assistance, you will need to provide the following information. Please write it down here before phoning:

General

Your Name _____
 Site Location _____
 Phone Number _____
 Fax Number _____

Prime Mover Information

Engine/Turbine Model Number _____
 Manufacturer _____
 Number of Cylinders (if applicable) _____
 Type of Fuel (gas, gaseous, steam, etc) _____
 Rating _____
 Application _____

Control/Governor Information

Please list all Woodward governors, actuators, and electronic controls in your system:

Woodward Part Number and Revision Letter _____
 Control Description or Governor Type _____
 Serial Number _____

Woodward Part Number and Revision Letter _____
 Control Description or Governor Type _____
 Serial Number _____

Woodward Part Number and Revision Letter _____
 Control Description or Governor Type _____
 Serial Number _____

If you have an electronic or programmable control, please have the adjustment setting positions or the menu settings written down and with you at the time of the call.

DECLARATION OF CONFORMITY

According to EN 45014

Manufacturer's Name: WOODWARD GOVERNOR COMPANY (WGC)
Industrial Controls Group

Manufacturer's Address: 1000 E. Drake Rd.
Fort Collins, CO, USA, 80525

Model Name(s)/Number(s): EPG 12V 8290-187 and similiar
EPG 24V 8290-185 and similiar


Conformance to Directive(s): 89/336/EEC COUNCIL DIRECTIVE of 03 May 1989 on
the approximation of the laws of the Member States
relating to electromagnetic compatibility.

Applicable Standards: EN61000-6-2, 2001: EMC Part 6-2: Generic Standards -
Immunity for Industrial Environments
EN61000-6-4, 2001: EMC Part 6-4: Generic Standards -
Emissions for Industrial Environments

We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

MANUFACTURER

Signature



Full Name

Jennifer R. Williams

Position

Engineering Manager

Place

WIC, Fort Collins, CO, USA

Date

7-25-02.

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please include the manual number from the front cover of this publication.



PO Box 1519, Fort Collins CO 80522-1519, USA
1000 East Drake Road, Fort Collins CO 80525, USA
Phone +1 (970) 482-5811 • Fax +1 (970) 498-3058

Email and Website—www.woodward.com

Woodward has company-owned plants, subsidiaries, and branches,
as well as authorized distributors and other authorized service and sales facilities throughout the world.

Complete address / phone / fax / email information for all locations is available on our website.