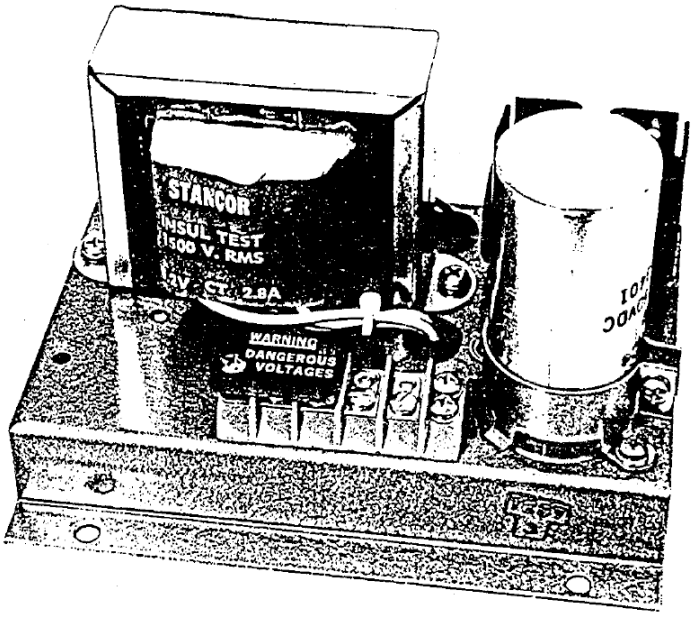
WOODWARD

Product Manual 82452
(Revision NEW)
Original Instructions



24 Vdc Power Supply

8271-320, 8271-589, 8271-867

Installation and Operation Manual

General Precautions

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.

Revisions

This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, check manual *26311* , *Revision Status & Distribution Restrictions of Woodward Technical Publications*, on the *publications page* of the Woodward website:

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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.

Translated Publications

If the cover of this publication states "Translation of the Original Instructions" please note:

The original source of this publication may have been updated since this translation was made. Be sure to check manual *26311* , *Revision Status & Distribution Restrictions of Woodward Technical Publications*, to verify whether this translation is up to date. Out-of-date translations are marked with ⚠. Always compare with the original for technical specifications and for proper and safe installation and operation procedures.

Revisions—Changes in this publication since the last revision are indicated by a black line alongside the text.

Warnings and Notices

Important Definitions

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

⚠WARNING

Overspeed / Overtemperature / Overpressure

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

Personal Protective Equipment

The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to:

- **Eye Protection**
- **Hearing Protection**
- **Hard Hat**
- **Gloves**
- **Safety Boots**
- **Respirator**

Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.

⚠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.

⚠WARNING

Automotive Applications

On- and off-highway Mobile Applications: Unless Woodward's control functions as the supervisory control, customer should install a system totally independent of the prime mover control system that monitors for supervisory control of engine (and takes appropriate action if supervisory control is lost) to protect against loss of engine control with possible personal injury, loss of life, or property damage.

NOTICE

Battery Charging Device

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.

Electrostatic Discharge Awareness

NOTICE

Electrostatic Precautions

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.**

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*.

Follow these precautions when working with or near the control.

1. 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.
2. 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.

24 Vdc Power Supply
8271-320, 8271-589, 8271-867

Introduction

This manual describes the 8271-320, 8271-589, and 8271-867 24 Vdc power supplies, including installation, maintenance, troubleshooting, and replacement. These power supplies are used with Woodward electronic controls when battery sources are not available.

Description

The power supplies are compact modules. They are capable of providing 24 volts of direct current (Vdc) and up to 0.8 amps with a ripple of approximately 1% at full load. They are protected from transient voltage spikes.

The power input for models 8271-320 and 8271-867 is 85 to 130 volts alternating current (Vac). The power input for model 8271-589 is 200 to 240 Vac. The input load is a maximum of 0.4 amps for all models.

The chassis for models 8271-320 and 8271-589 are painted gray. The chassis for the model 8271-867 is painted beige.

Installation

All models may be mounted in any position. Operation is not dependent on the orientation of the unit. Four retaining screws secure the power supply to the host unit.

The units must be wired as shown in Figure 1.

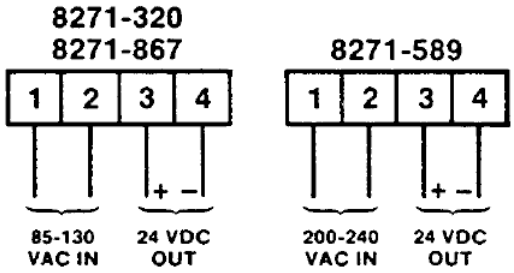

Figure 1. Power Supply Wiring

NOTICE

Ensure that input voltages are compatible with the design of the unit. Failure to do so could result in damage to the unit and will void the warranty.

⚠WARNING

HIGH VOLTAGE—Prior to the installation or removal of a power supply, ensure that the input power has been shut off at its source. Failure to do so could result in serious injury.

Always place the insulated protective cover over the ac input terminals.

Verify that the positive dc output wire is positioned on terminal 3.

Maintenance

These units are not field serviceable. In the event of a field failure, the unit should be returned to Woodward or your authorized dealer or distributor for repair or replacement.

Troubleshooting

⚠WARNING **HIGH VOLTAGE—When performing the following tests, hold all probes by their insulated barrels. Do not touch exposed metal parts.**

In order to verify that the power supply is operating normally:

1. Remove insulated protective cover positioned over ac input terminals.
2. Place the probes of an ac voltmeter on terminals 1 and 2. Input voltage for models 8271-320 and 8271-867 must be between 85 and 130 Vac. Input voltage for model 8271-589 must be between 200 and 240 Vac. If input voltages do not fall within these parameters, the power supplies will not perform as designed.
3. Place the positive probe of a dc voltmeter on terminal 3 and the negative probe on terminal 4. The output voltage must be between +21.6 and +26.4 Vdc. If output voltages do not fall within these parameters, the power supply should be replaced.

Replacement

To replace all models of the power supply:

1. Disconnect unit from ac power source and remove insulated protective cover positioned over the ac input terminals.
2. Remove all wires. Keep ac input wires separate from dc output wires.
3. Remove the four retaining screws from the chassis.
4. Remove the power supply from the host unit.
5. Replace the power supply. Replace and tighten the four retaining screws.
6. Reattach the ac input wires. Ensure that the insulated protective cover is positioned over the ac input terminals.
7. Reattach the dc output wires. Ensure that the positive wire is attached to terminal 3.
8. Reconnect the input power source.
9. Test as described in the Troubleshooting section of this manual.

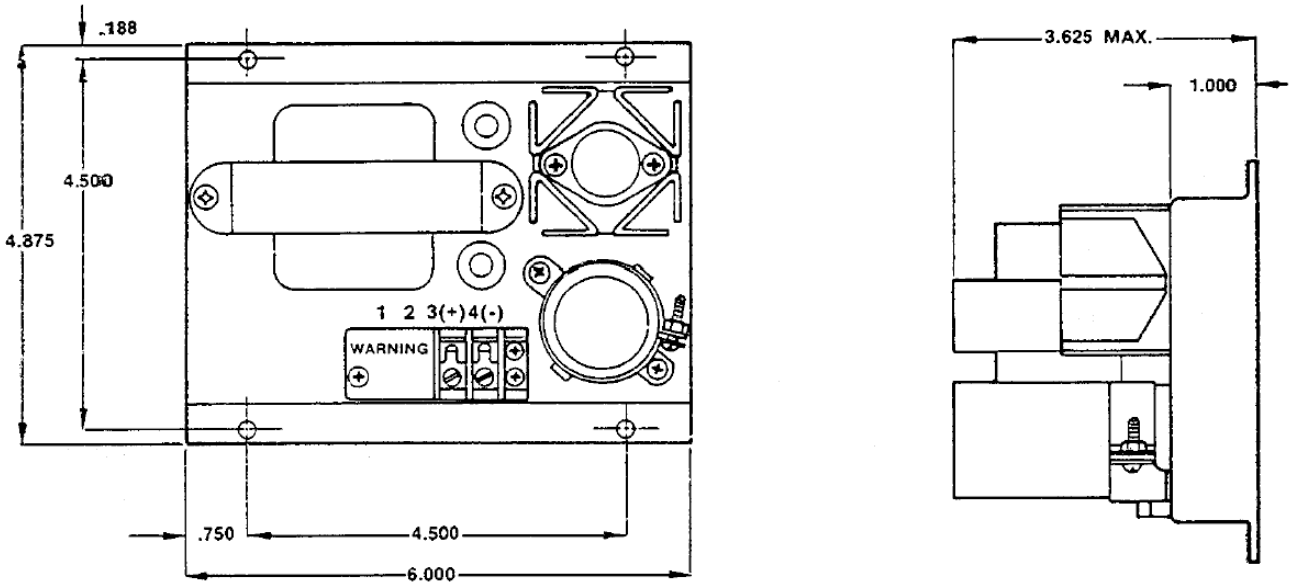

Figure 2. Power Supply Outline Drawing

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Send comments to: icinfo@woodward.com

Please reference publication 82452.

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