



Instruction Manual Model 5620 Power Controller



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Contents

Precision Control Systems, Inc./Research Inc. 2

Introduction..... 5

 General Description 5

 Standard Features..... 5

Safety 7

 General..... 7

 Electrical Safety 7

Installation..... 9

 Installing the Model 5620 9

 Connecting the LOAD and Line Wires 10

 Output Conditioning Selection 11

 Installing an Optional Remote Timer-Start Switch 12

Operating Instructions..... 13

 Introduction..... 13

 How to Use the Standby-Operate Switch 13

 Operating the RUN/IDLE/TIMER Features..... 14

Introduction

General Description

The Model 5620 Power Controller is an economical power controller for manually setting the voltage into resistive load (Fig. 1-1). It has provision for different idle and run power settings, and a timer to time the application of run power setting. This makes it ideal for laboratory or production applications requiring these capabilities. The 5620 Power Controller is available with current ratings of 20, 35 and 55 amperes for use on 120, 208, 240, 277, 380 and 480 volt power sources.

The phase-angle method of power control is used to provide a smooth application of power to the load from 10 to 100 percent of the line voltage. This makes the Model 5620 Power Controller ideal for tungsten filament lamps and other resistive loads. An output conditioning circuit provides a “slow start” for tungsten filament loads to prevent excessive in-rush current on start-up due to the low resistance of the tungsten when at room temperature.

Standard Features

Line Voltages:	120, 208, 240, 277, 380, 480
Current:	20, 35, and 55 amperes
Line Frequency:	47 to 63 Hertz
Line Regulation:	± 3% RMS load voltage with + 10% to -15% RMS line variations
Internal Feedback:	Average voltage
Idle Adjustment Range:	0% to 30%, minimum
Run Adjustment Range:	0% to 100%
Run Timer Range:	0 to 20 seconds
Output Conditioning:	Fast: 30-60 msec., Ramp: 1 sec., Lamp: 5 sec.
Weight:	5 pounds (2.3 kilograms)

Figure 1-1

Safety

General

The Model 5620 Power Controller is designed for safe operation. Nevertheless, installation, maintenance and operation of the Model 5620 can be dangerous for a careless operator or maintenance person. For your safety and the safety of others, please read the instructions in this INSTRUCTION MANUAL, heed all CAUTION! and WARNING! Labels and follow these safety practices which help prevent accident or injury.

Electrical Safety

There is a danger of electrical shock when servicing this control unit or its connected load. Please read the CAUTION WARNING label located on the 5620. Please adhere to these warnings.

WARNING!

Always disconnect the external power lines whenever servicing the controller, or the load.

WARNING!

Never operate the controller with the cover of the control box removed. This cover is designed to protect the operator from high voltages.

Installation

Installing the Model 5620

Installing the Model 5620 Power Controller is a quick and simple process. It requires:

- Connecting the LOAD wires
 - Selecting the proper output conditioning
 - Connecting an external timer-start switch (optional)
 - Connecting the LINE wires (main power)
1. Using a Phillips screwdriver, remove the four Phillips screws on the front of the 5620 and lift the top cover off.
 2. With a straight edge screwdriver, loosen the screws on the two lower strain relief clamps, located on the upper end of the 5620, enough to allow passage of the required wiring. If using an external timer-start switch, loosen the screws on the upper strain relief clamp as well.

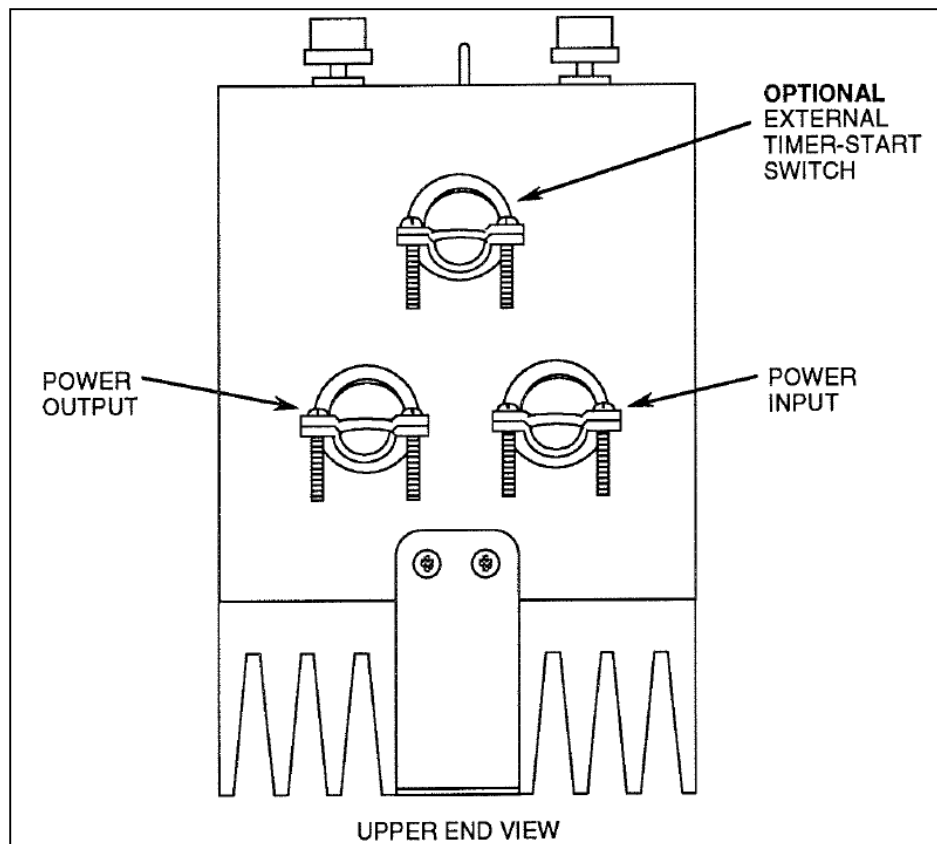


Figure 3-1 Location of strain relief clamps and wiring access.

Connecting the LOAD and Line Wires

1. Pass the power source wire through the right lower strain relief clamp, and connect the wires to terminals labeled: LINE 1, LINE 2 and GROUND.
2. Tighten the screws on the strain relief clamps to secure the wires.

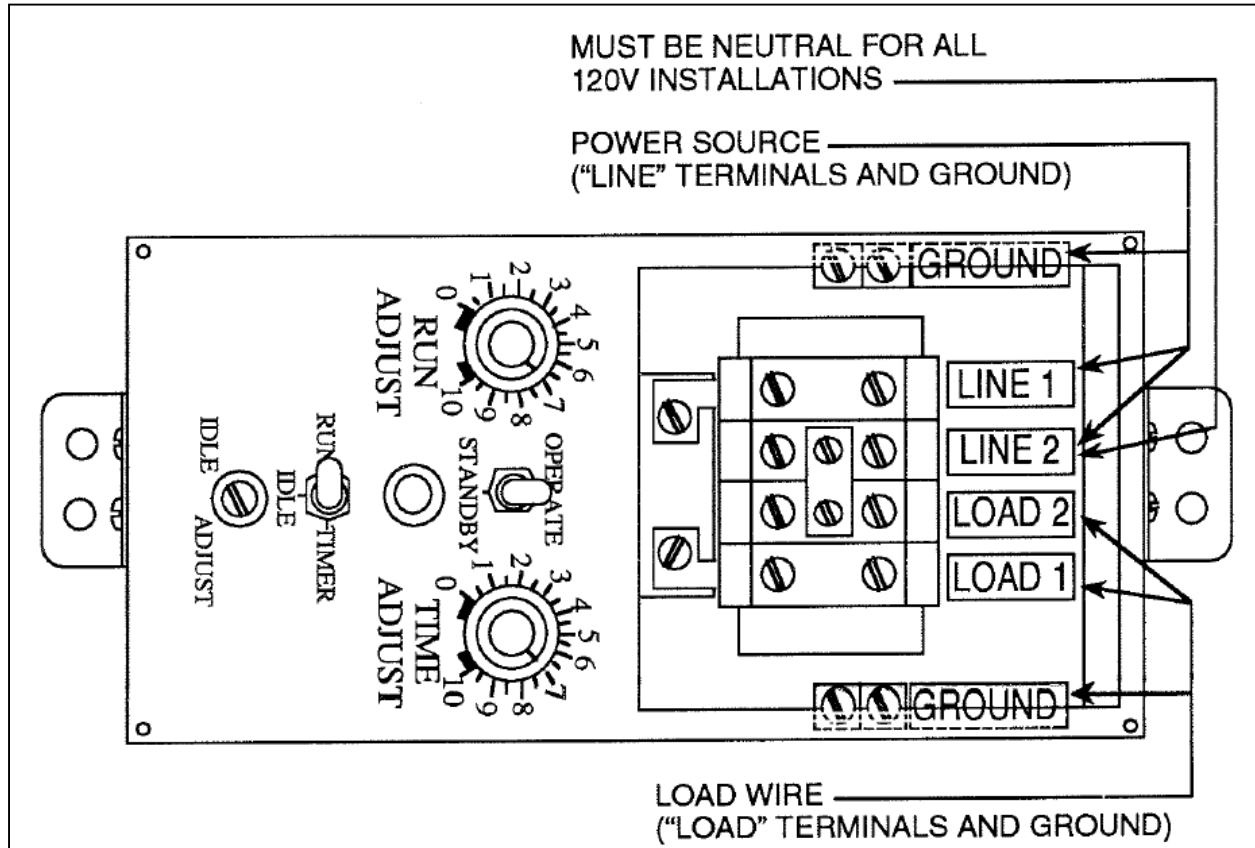


Figure 3-2 Location of LINE, LOAD and GROUND terminals

CAUTION!

Line 2 must be neutral for all 120V installations.

WARNING!

Never operate the controller without proper GROUND wiring.

Output Conditioning Selection

The 5620 Power has a jumper-selectable output conditioning feature, located on the lower circuit board, that changes the output voltage response time (Fig. 3-3).

This feature protects the controller from excessive in-rush current when connected to resistive loads that have low resistance when cold. The three different response time settings are:

Fast: For resistive loads where the cold-to-hot resistance is nearly constant. (.045 sec response time)

Ramp: For rapidly responding resistive loads where the load resistance increases less than twice from cold to hot. (1 second response time).

Lamp: For rapidly responding resistive loads, such as tungsten filament lamps, where the hot resistance is more than twice the cold resistance. (5 second response time).

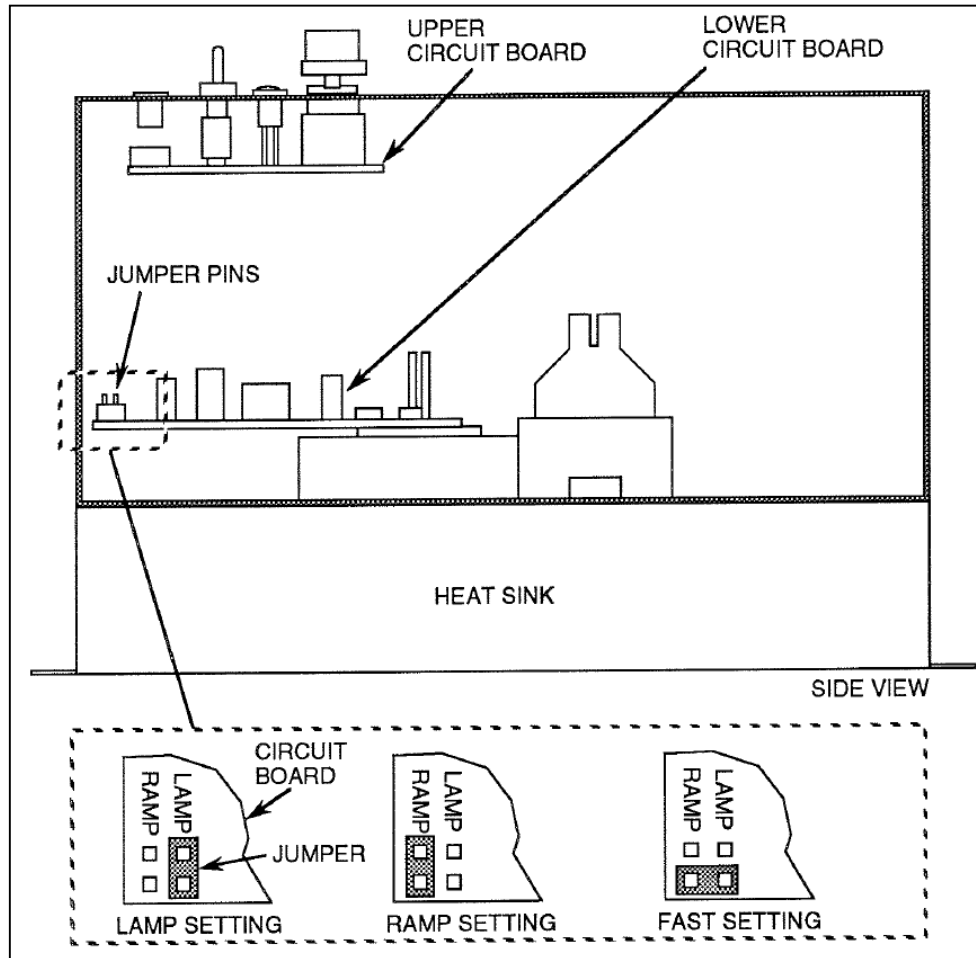


Figure 3-3 Jumper positions for Fast, Ramp, or Lamp response time settings.

Installing an Optional Remote Timer-Start Switch

1. Remove the plug from the upper circuit board (Fig. 3-4).
2. Pass the Remote Timer-Start switch wire through the top strain relief clamp.
3. Fasten the two wires from a normally-open switch into the small compression lugs on the plug and tighten the screws.
4. Re-insert the plug onto the board.
5. Tighten the screws on the strain relief clamp to secure the wire.
6. Replace the top cover and the four Phillips screws.

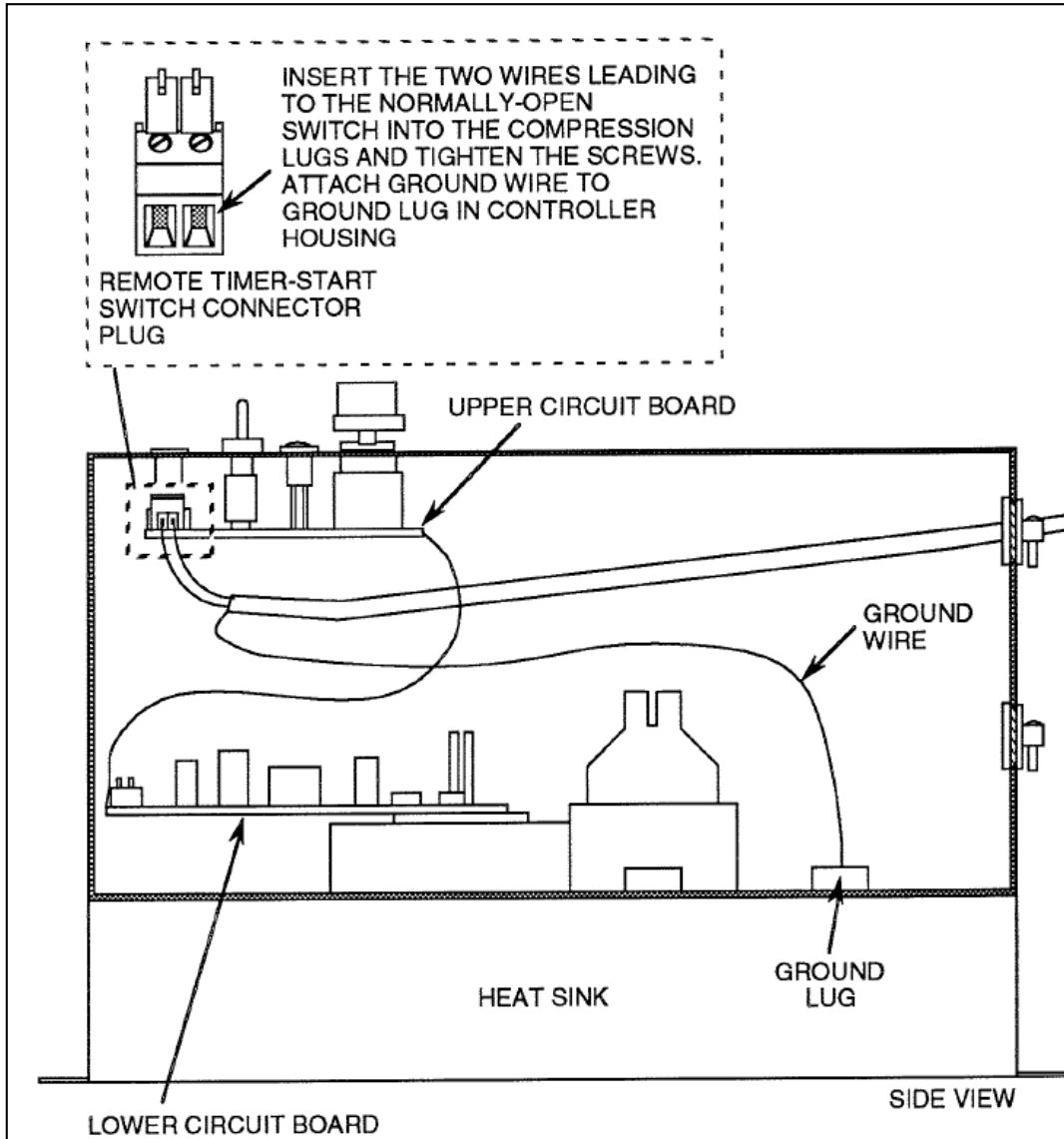


Figure 3-4 Installing the Remote Timer-Start switch to the upper circuit board.

Operating Instructions

Introduction

Figure 4-1 displays the control panel for the 5620, and the following subsections describe how to use each feature.

For safe and efficient operation of the Model 5620 Power Controller, heed all safety precautions discussed in Section 2.

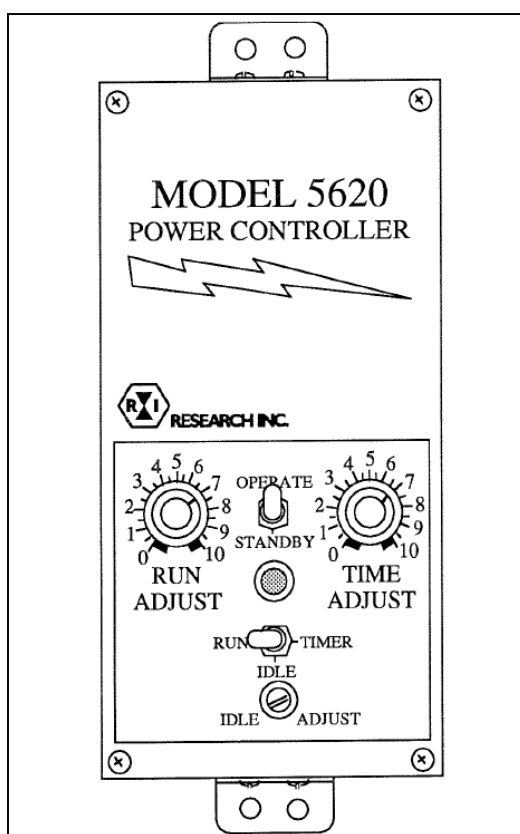


Figure 4-1 Model 5620 Control Panel

How to Use the Standby-Operate Switch

The standby-operate switch disables the voltage output when in the standby position and enables the output when in the operate position.

	WARNING!
	This switch does NOT disconnect the load from the power line.

Operating the RUN/IDLE/TIMER Features

The RUN/TIME ADJUST potentiometers provide a variety of operating modes. Using the RUN mode, the user can adjust the output from 0 to 100 percent of the input voltage. The TIME mode allows the user to preset a time of operation from 0 to 20 seconds.

IDLE Adjustment

1. Place the STANDBY-OPERATE switch in the OPERATE position.
2. Place the RUN/IDLE/TIMER switch in the IDLE position.
3. Using a 1/8 inch or less straight edge screwdriver, set the IDLE ADJUST to the desired idle output, from 0 to 15 percent. Lamps should be barely glowing.

RUN Adjustment

1. Place the RUN/IDLE/TIMER switch to the RUN position.
2. Set the run output by turning the RUN ADJUST potentiometer knob until the desired output voltage is reached.

TIME Adjustment

1. Go to the Idle Setting
2. Set the amount of time for operation by turning the TIME ADJUST potentiometer knob. (0 to 10 on the dial corresponds to 0 to 20 seconds).
3. Set the Run Adjust pot to the desired output when in the RUN mode
4. To activate the time cycle, toggle the RUN/IDLE/TIMER switch to the TIMER position and release. The switch will return to the IDLE position.

When the timer is activated, the controller switches from IDLE mode to the RUN mode, and returns to idle after the time cycle is complete.