

Kendrick Astro Instruments

Premier Power Controller



Remote Control Software
Version 2.0
- User Guide -

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What's new in version 2.0?

This version includes substantial improvements over previous versions:

1. Redesigned user interface.
2. Full support for laptop computers running Windows 98.
3. Improved error handling.
4. Better use of the computer screen space by splitting the configuration and monitoring functions into two windows.
5. The ability to minimize the application.
6. The ability to select either Celcius or Fahrenheit as the choice for display temperature values.

INTRODUCTION

Kendrick Premier Power Controller

We are pleased to announce the introduction of our new digital PREMIER POWER CONTROLLER. It is the most advanced controller of its type available, with many new features not seen before.

Since the introduction of the Kendrick Dew Remover System in 1994, we have had many requests for a more advanced controller. These customers have wanted more control over the heaters on their telescopes. We have taken it one step further and have provided a platform that will offer centralized power management of telescope accessories and dew prevention heaters.

Various devices, accessories and heaters can be powered and controlled from one central device. Now, not only heaters, but accessories such as Dobsonian cooling fans, digital setting circles, illuminated eyepieces, telescope motor drives, Astro Systems Dewguard secondary mirror heaters, motorized focusers, and many more can be powered from the controller.

The controller's many new features are:

1. Built in low voltage cut-off (Outputs 1 through 5 only).
2. LED display.
3. LED brightness control.
4. Temperature/Humidity sensing and control on two outputs.
5. Your choice of Fahrenheit or Celsius operation.
6. 6 outputs (2 of which are constantly on).
7. LED power-on indicators for outputs 1 through 5.
8. Outputs 1 through 4 are individually programmable.
9. Numerical keypad entry of operating parameters for utmost control of your settings.
10. Remote control, programming and monitoring capability (optional software purchase required).
11. Sensor readouts to show ambient air temperature, optic temperature, dew point temperature, and humidity in %, battery voltage.
12. The ability to enable or disable outputs (output #6 cannot be disabled).
13. The ability to save up to 4 different configurations.
14. A beautiful brushed stainless steel case.
15. An optional brushed stainless steel cradle that connects to your tripod or Dobsonian telescope.

PROGRAMMABLE FUNCTIONS

Depending on the package purchased, the Premier Controller is programmable in the following parameters:

1. Duty Cycle. Outputs 1 through 4 can be individually programmed to operate anywhere from 10% to 100%.
2. Temperature variance. Outputs 1 and 2 can be individually programmed to operate within a user-specified temperature variance (i.e.: 5 degrees above air temperature).
3. Dew point variance. Outputs 1 and 2 can be individually programmed to operate within a user-specified temperature variance (i.e.: 5 degrees above dew point).

4. Set temperature. Outputs 1 and 2 can be individually programmed to operate at a user-specified set temperature. This function is useful if you have a device that needs to be kept at a specific temperature for optimal performance.
5. Outputs 1 and 2 can be programmed to mirror one another. For example, if output #1 has been programmed to operate at 7 degrees above dew point, then output #2 would come on and turn off at the same time as #1.
6. Enable/Disable. Outputs 1 through 5 can be set to on or off at any time. This is useful if, for example, you are running fans to aid in cooling your optics and you want them shut off.
7. LED brightness. The LED Display can be set anywhere from a low setting for nighttime use to bright for daytime use.

Remote Control Software

The rest of this document describes the Remote Control Software, its installation, configuration, and operations.

SYSTEM REQUIREMENTS

- PC with a Pentium-class processor with available COM port. Pentium 90 or higher processor recommended.
- Microsoft Windows 98 SE or later operating system. Microsoft Windows NT 4.0 requires SP3 or later.
- 24 MB of RAM (32 MB recommended).
- 10 MB Hard-disk space required.
- CD-ROM drive.
- VGA or higher-resolution monitor; Super VGA recommended.
- VB6 SP5 runtime environment (included).
- Crossover RS232 cable (included).
- Kendrick PREMIER POWER CONTROLLER

PACKAGE CONTENTS

Please ensure that the following items are included with this package before you attempt to start the installation process.

- Remote Control software CD.
- This User Guide.
- RS232 adapter with RJ11 adapter.
- RJ11 crossover cable.

INSTALLATION

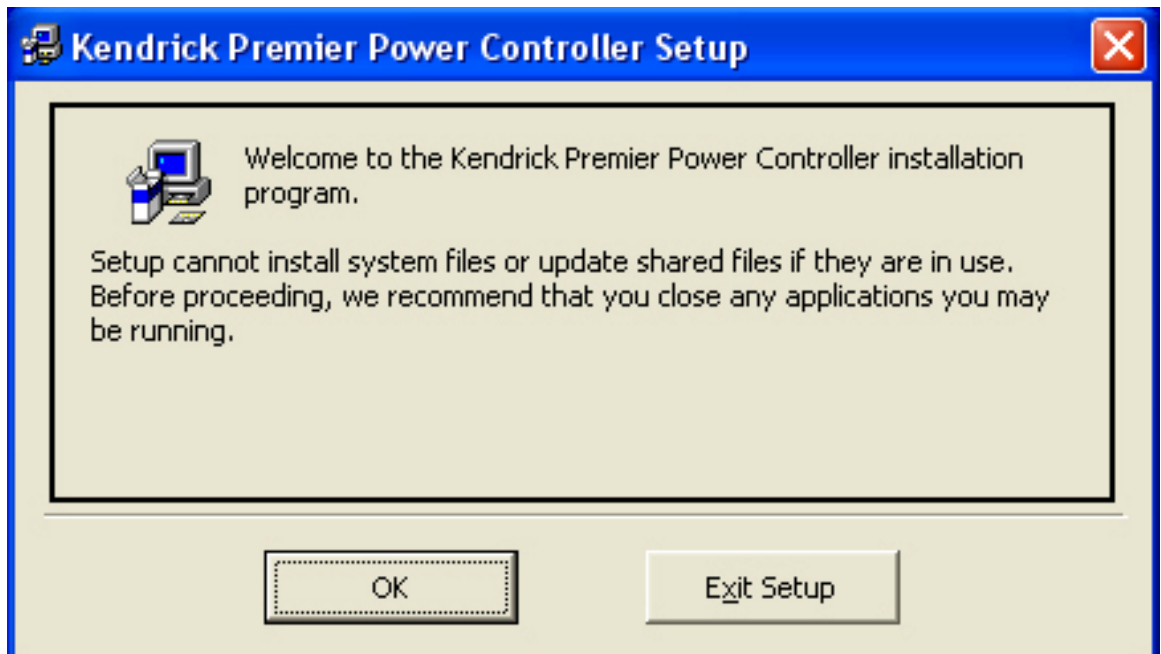
STEP 1

Insert the installation CD into your CD-ROM drive. The installation process should start automatically. If it does not, then execute the following command:

D:\SETUP.EXE

Where "D:" is the CD-ROM drive on your computer.

STEP 2



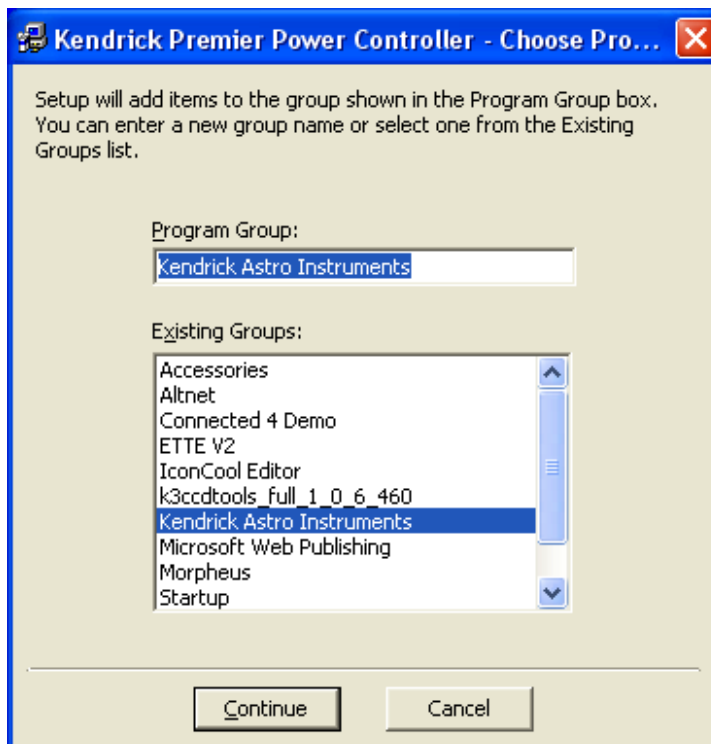
This is just a warning message to indicate that you should close running programs before installing the program. Press <OK> to continue.

STEP 3



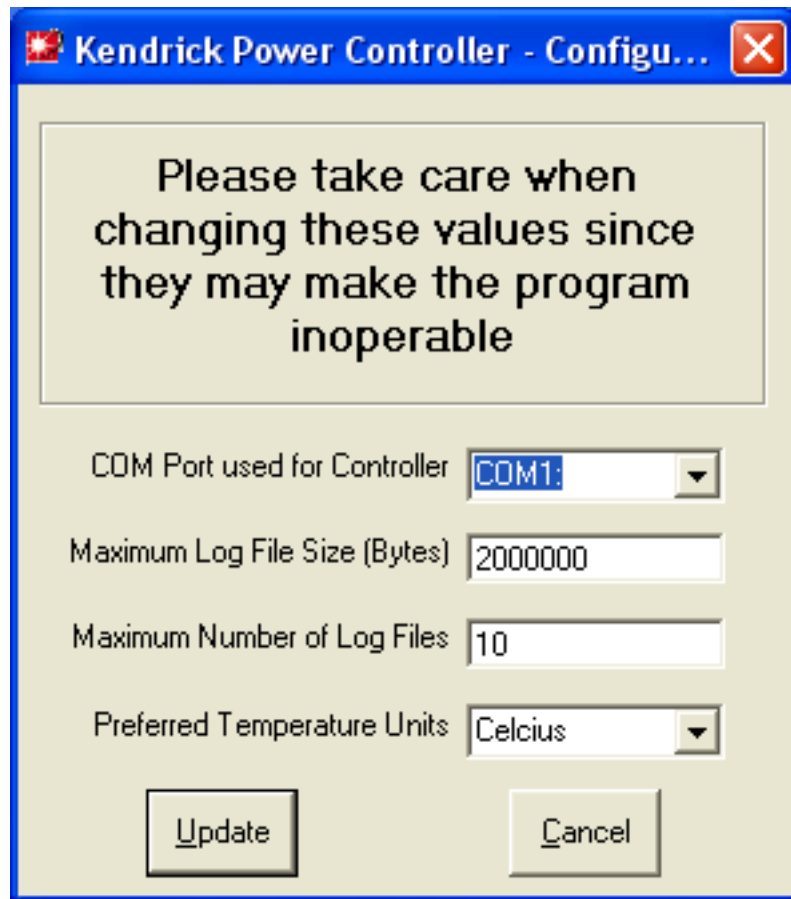
This screen allows you to change the destination installation path or to accept the default one. Select the large button on the upper left to continue with the installation.

STEP 4



On this window, you can change the group name for the software. It is recommended that this not be changed.

STEP 5



At the completion of the installation you will be given the opportunity to change the default system configuration. Please refer to the SYSTEM CONFIGURATION section for more detail on this function.

Note that you now have the ability on this screen to set your preferred temperature units to either Celcius or Fahrenheit.

SYSTEM CONFIGURATION

The System Configuration utility allows you to change some behaviors of the software. This same window is also displayed at the end of the installation where you can change the defaults.

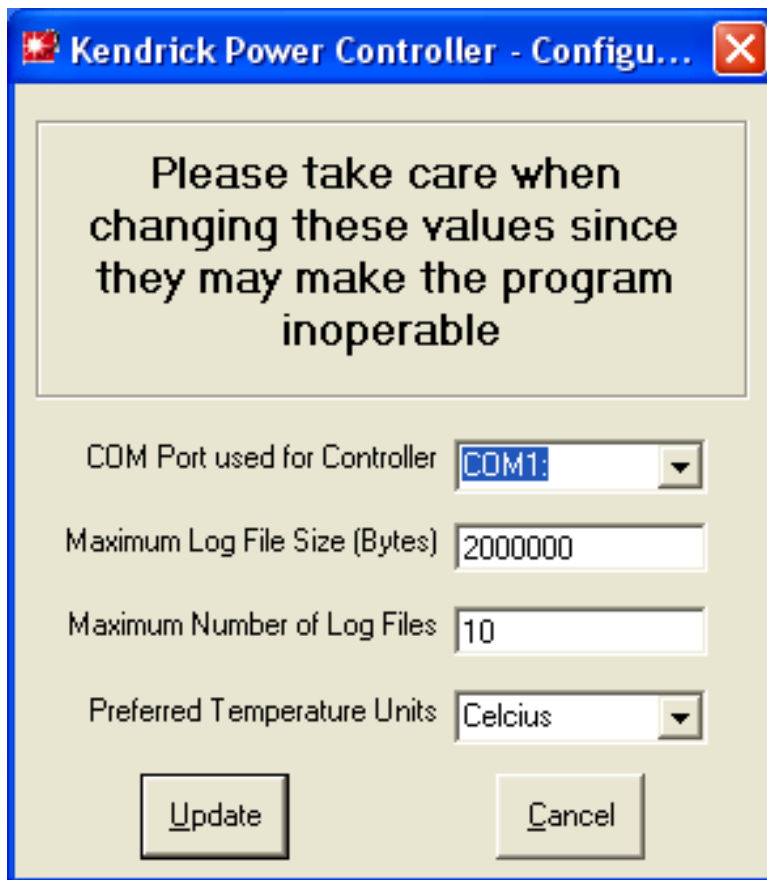
LOGGING FACILITY

All the interactions between the program and the controller are recorded in a log file (CtrlLog.txt) that is stored in the same directory as that in which the applications have been installed. The file is formatted as an ASCII tab delimited text file that can be imported into most Windows applications, like Microsoft Word or Microsoft Excel.

When the size of the log file exceeds the pre-configured value, the system will create a backup of the log file and reset the log file. The backup files are called CtrlLog.001, CtrlLog.002, etc. and they are stored in the same directory. The total number of backups to keep is also configurable.

SETTING THE CONFIGURATION

To execute the configuration utility after installation, select <START>, <PROGRAMS>, <KENDRICK ASTRO INSTRUMENTS> and then execute the System Configuration application.



COM Port

This drop-down list-box allows you to select the port on the computer to which your controller has been connected. Selecting an incorrect value will cause the application to stop operating. The default value is COM1.

Maximum Log File Size

Specify the maximum size of the log file in BYTES. The default value is 2,000,000 (2MB). Leave the commas out when entering the new value.

Maximum Number of Log Files

Specify the maximum number of backup log files to keep. Default is 10.

Temperature Unit

This drop-down list-box allows you to select the units in which temperatures will be displayed, either Celcius or Fahrenheit. The default value is Celcius.

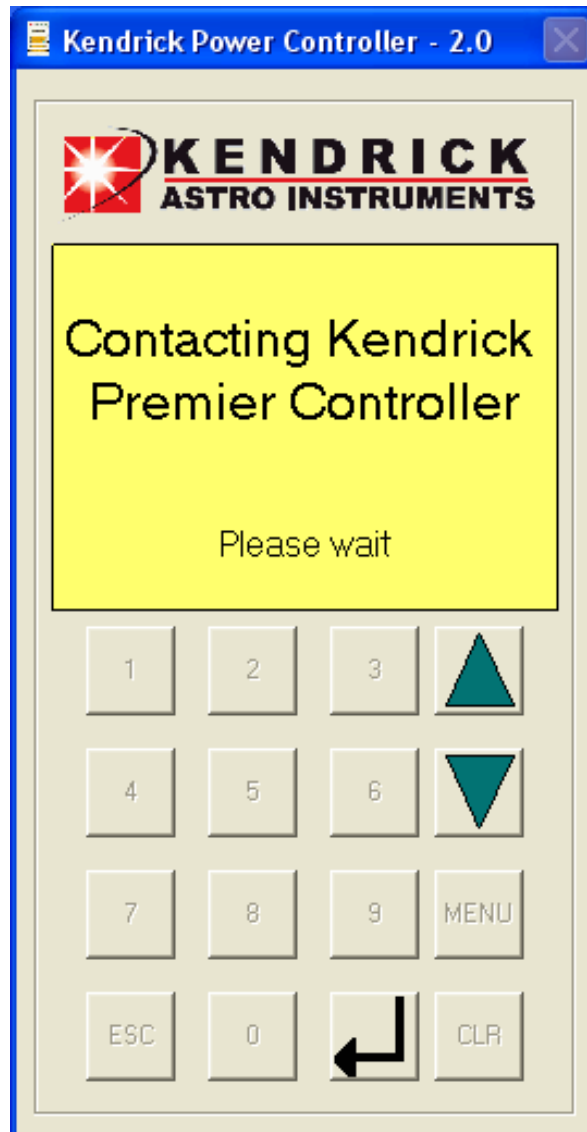
Use the <UPDATE> button to save any changes. This will also close the configuration application. Pressing the <CANCEL> button instead will terminate the application without saving any changes. The remote control application will have to be restarted to use the modified settings.

REMOTE CONTROL

This version of the software now includes two separate windows, one for Remote Configuration and the second for Remote Monitoring. The program will remember the last window that was open at the time the program is terminated and it will then display the same window in subsequent executions.

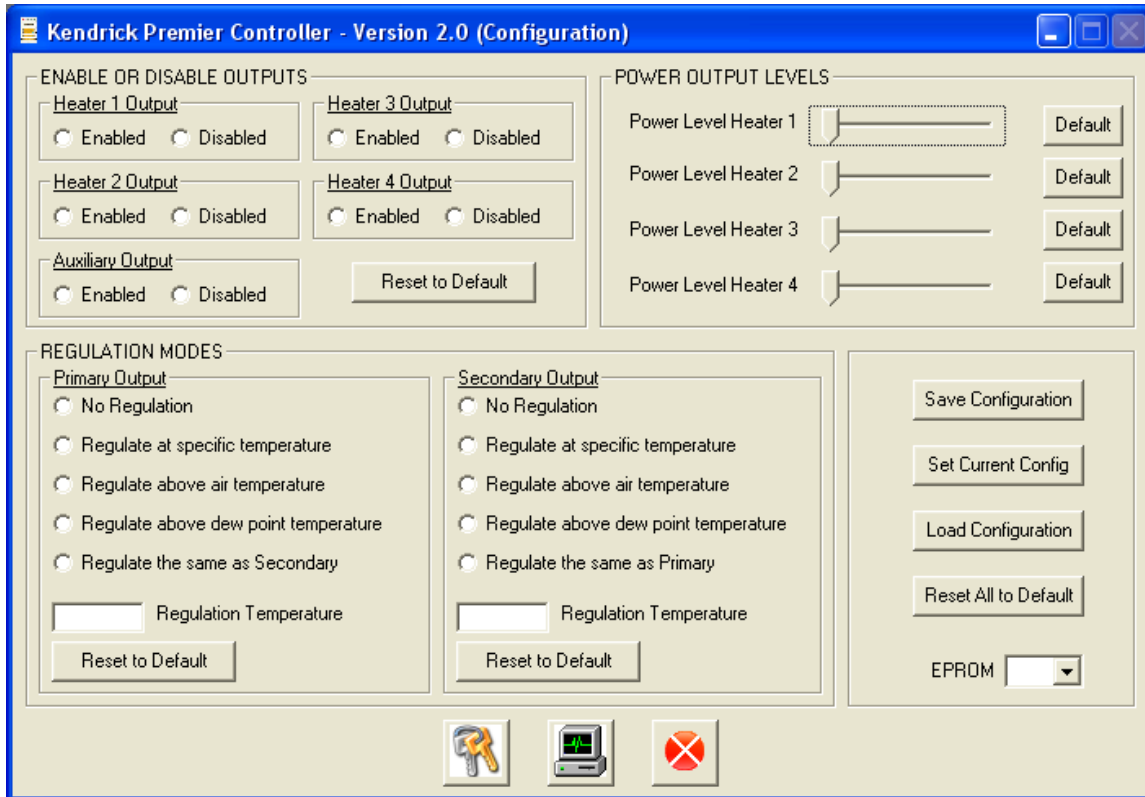
To execute the remote control application, select <START>, <PROGRAMS>, <KENDRICK ASTRO INSTRUMENTS> and then execute the Premier Power Controller application.

IMPORTANT: The controller must be connected to the correctly configured port before the application is executed, otherwise an appropriate error message will be displayed. While the program is starting up and trying to establish communication with the controller the following window will be displayed for a short time. Should there be an error with the communication then an error message will be display on this window.



Remote Configuration

This window is used to configure the premier controller.



Configuration Sets

The Premier Controller supports up to four sets of configurations. These sets are stored in non-volatile memory locations (EPROM 1 – 4) on the controller. The configuration pane allows the user to load a configuration from an EPROM position, save it to a position, and to set the current active configuration to the one that is displayed in the pane. This allows the user to create and manage multiple configurations at the same time without affecting the operational configuration being used to drive the controller.

Power Level Settings

Outputs 1 to 4 can be individually programmed for power level output varying from 10% to 100%. These values can be set using the sliding scales.

Enabled/Disabled Settings

Outputs 1 to 5 can be individually turned on (enabled) or off (disabled). If output 5 (Auxiliary Output) is enabled it will be constantly running at a 100% power level. Output 6 cannot be regulated and is always running at 100% power level, assuming the port is actually used.

Regulation Modes

The regulation modes for outputs 1 and 2 allow them to become enabled (running at their configured duty cycle) or disabled based on a number of criteria: Specific Temperature Regulation, Air Temperature Regulation, and Dew Point Regulation. The two probes can also be set to mimic each other's regulation.

Special Command Buttons



SERIAL NUMBER. This displays the unique serial number associated with the Premier Controller.



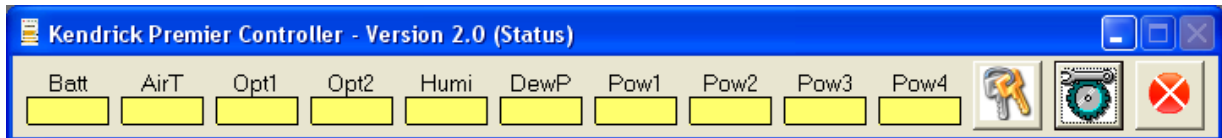
STATUS MONITOR. Switch to the status monitor window.



EXIT. Exit the application. Next time you start the remote control application it will return to this configuration window.

Remote Status Monitoring

This window is used to monitor the duty cycle settings and the sensor values for the attached Premier Controller. Note that the values displayed in the temperature boxes will be in the units specified during the system configuration.



Special Command Buttons



SERIAL NUMBER. This displays the unique serial number associated with the Premier Controller.



CONFIGURATION. Switch to the Remote Configuration window.



EXIT. Exit the application. Next time you start the remote control application it will return to this status-monitoring window.