Kendrick Astro Instruments

Premier Power Controller

Remote Control Software
Version 2.1.3

- User Guide –

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

<ins>STEP 1</ins>

Insert the installation CD into your CD-ROM drive. Execute the following command:

*D*:\DEWCONTROL.MSI

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

<ins>STEP 2</ins>
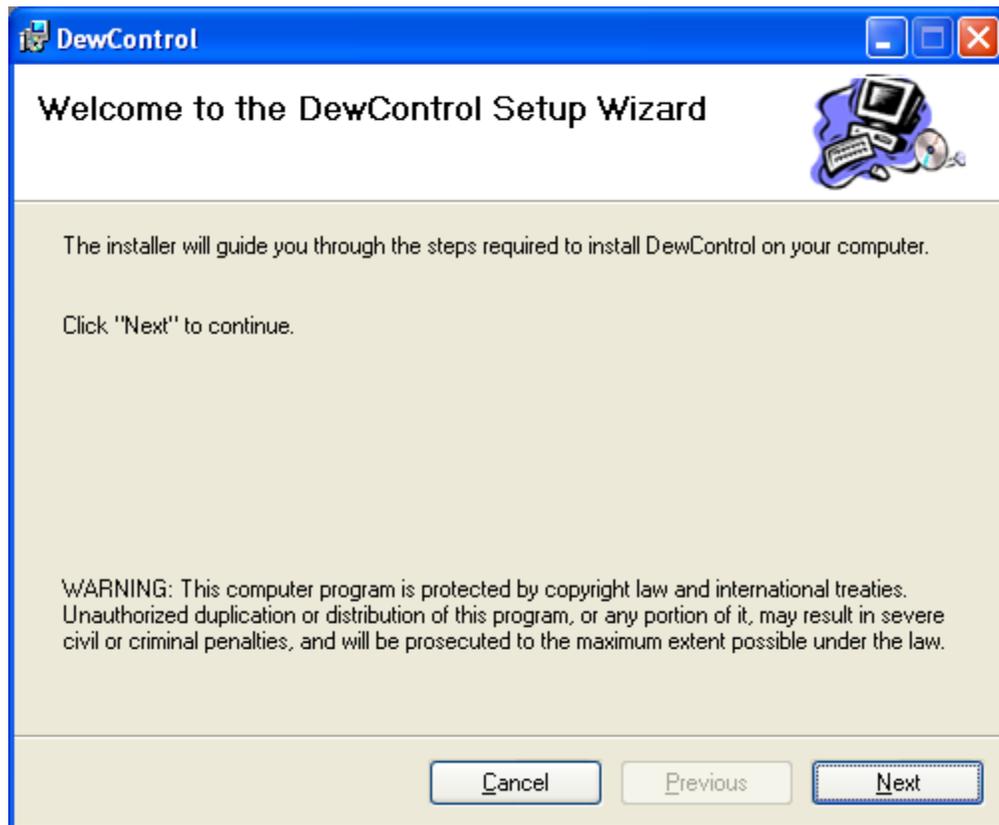
Click <NEXT> to continue.

STEP 3
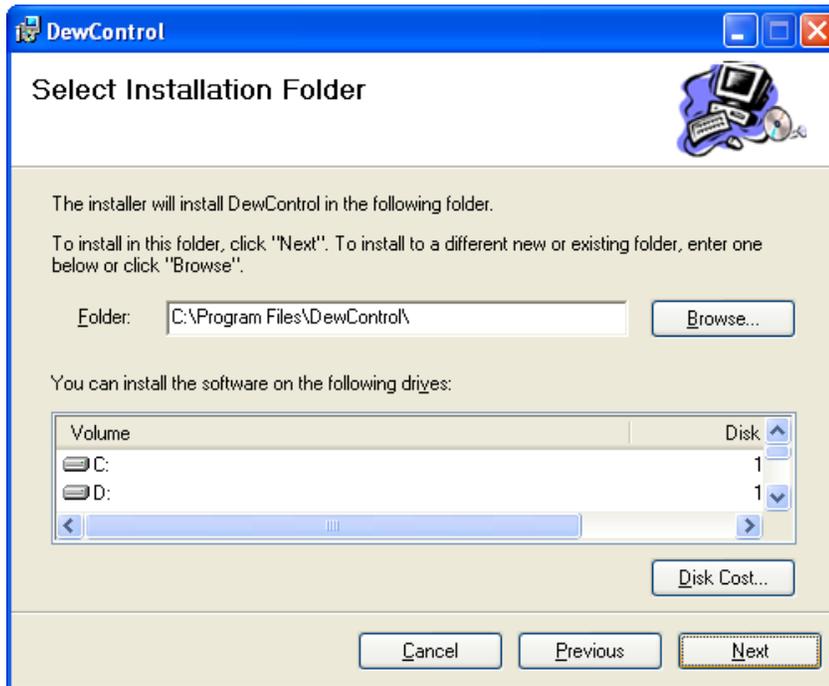
This screen allows you to change the destination installation path or to accept the default one. Hit <NEXT> to continue.

STEP 4
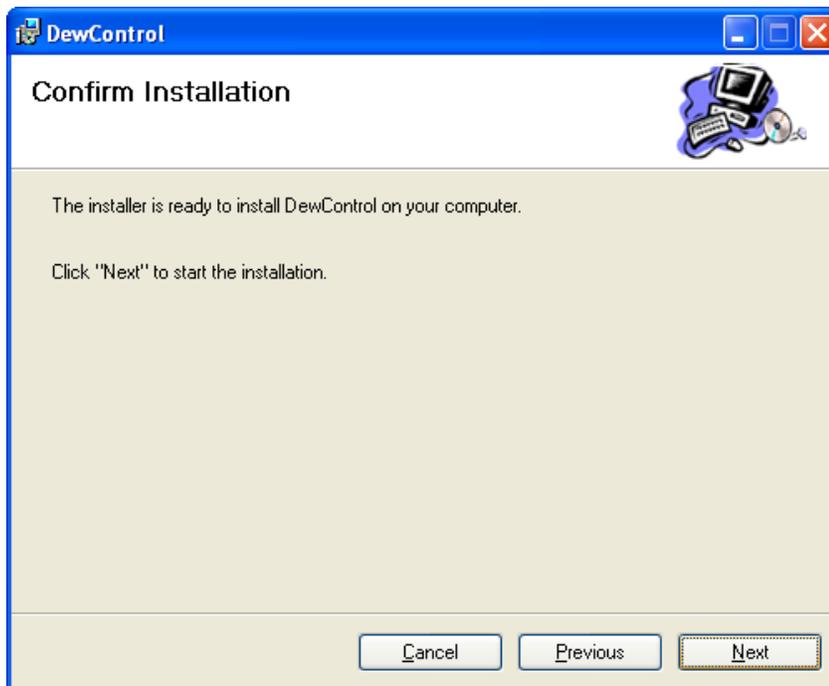
This is your last chance to back out of the installation! Hit <NEXT> to continue.

STEP 5
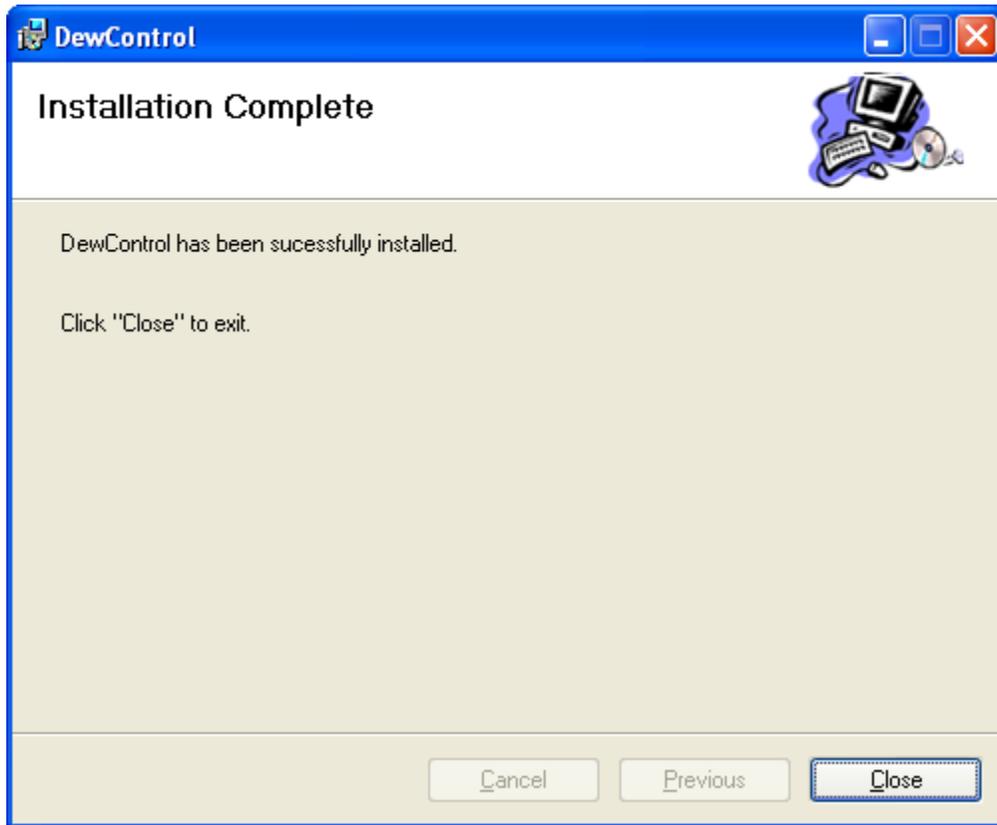
This screen tells you that the installation is complete.

Note that if you run the install utility for a second time you will get the option of uninstalling the application.

SYSTEM CONFIGURATION

The System Configuration utility allows you to change some behaviors of the software. This window will be displayed the first time the application is executed and then again afterwards if you select the <CHANGE SYSTEM CONFIGURATION> option from the main window (see section on REMOTE CONTROL).

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
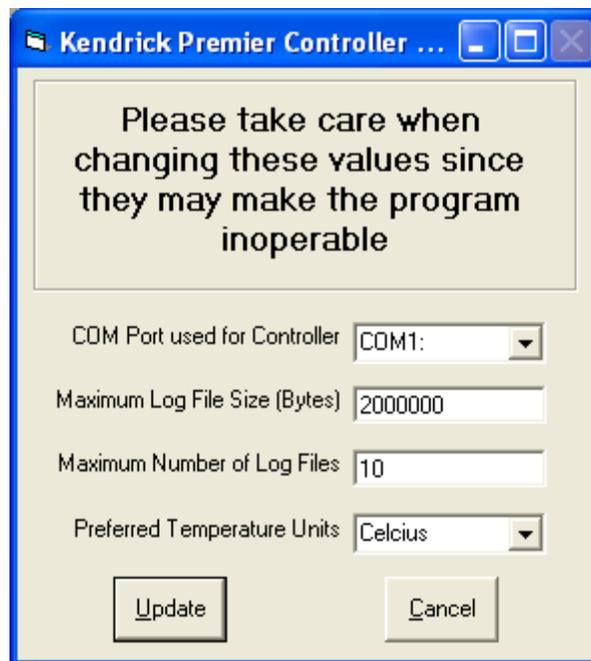
COM Port

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.

Preferred Temperature Units

Specify the units in which you would like to see the temperature readings. Default value is "Celsius".

Use the <UPDATE> button to save any changes. This will also close the application since you will have to restart the program to use the new configuration. Pressing the <CANCEL> button instead will terminate the configuration utility without saving any changes.

REMOTE CONTROL

The remote control software uses a number of screens for its functionality:

Main Application Window

To execute the remote control application, select <PREMIER CONTROLLER> from the START menu under Windows
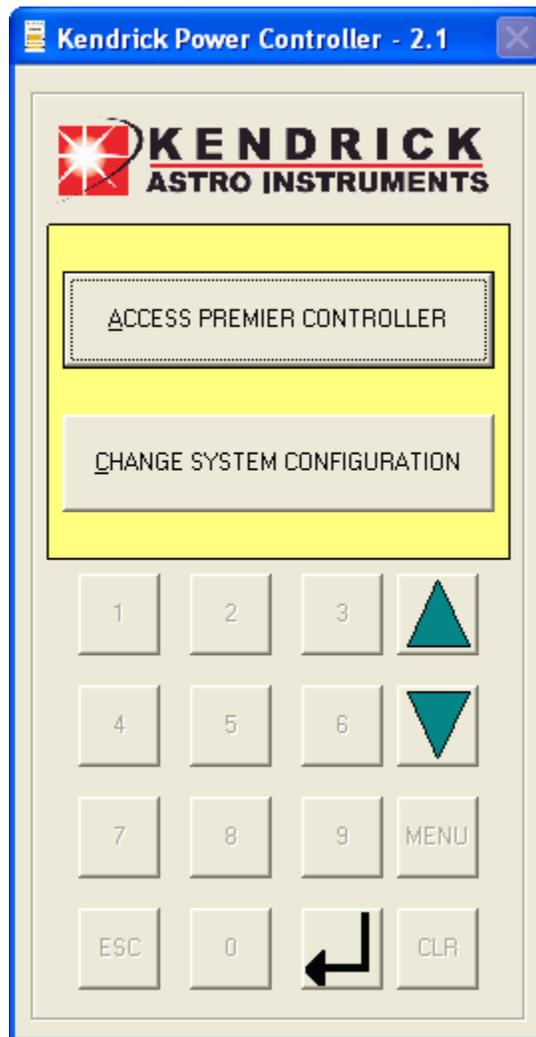
On this screen you can either access the premier controller (choose ACCESS PREMIER CONTROLLER option) or change the system configuration (select CHANGE SYSTEM CONFIGURATION option). As was mentioned earlier, the System Configuration window will be displayed the first time this application is executed. Choosing the CHANGE SYSTEM CONFIGURATION option has the same effect and allows you to change the configuration afterwards. See section on System Configuration for more detail.

Configuring the Controller

If you select to access the premier controller then the Controller Configuration screen will be displayed:
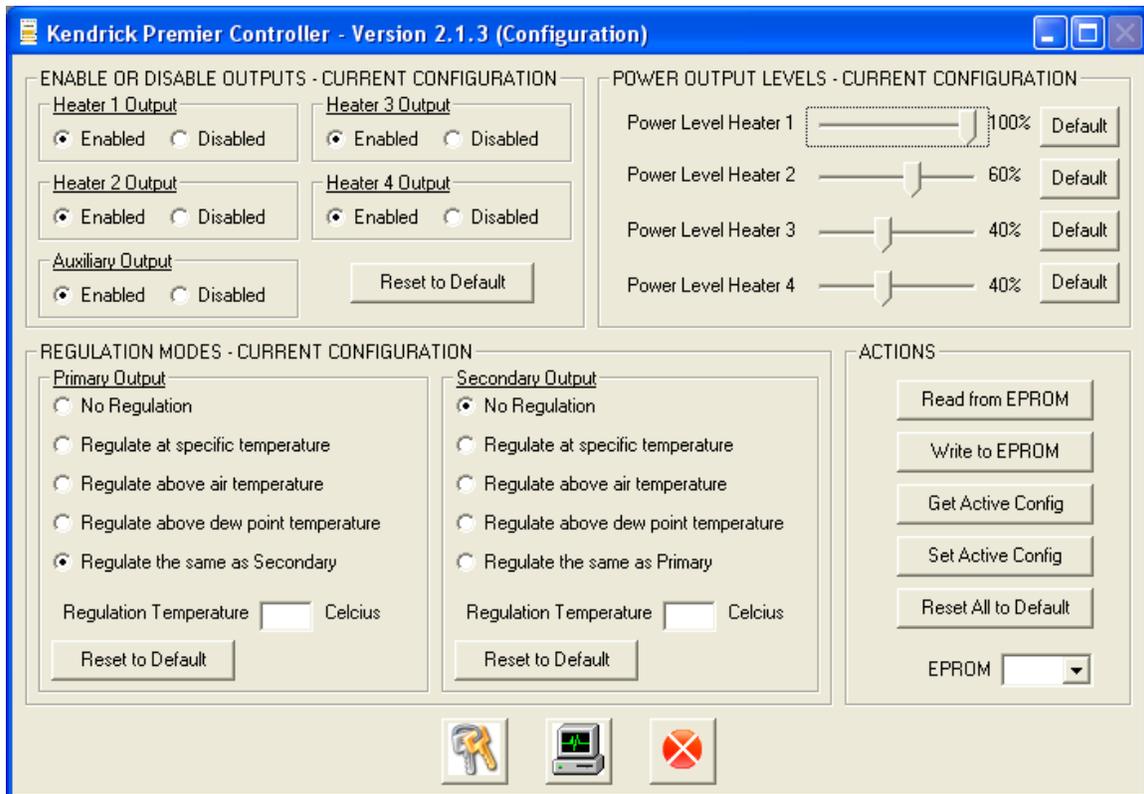
Configuration Sets

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 window allows the user to manage the different configurations through the ACTIONS group of buttons:

Read from EPROM	Read the configuration from the specified EPROM location, display it on the window and also make that the active configuration on the controller.
Write to EPROM	Store the configuration that is currently displayed in the specified EPROM location.
Get Active Config	Get the active configuration from the controller is display it on the window.
Set Active Config	Save the configuration from the window to the controller as the active configuration. Note that these settings will be lost when the controller is switched off.

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.

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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.

Command Buttons

The following buttons are used on this page

This function will display the serial number of the controller. This may be needed when you contact Kendrick Astro Instruments with questions regarding your controller.

This button will close the application. Note that if you press this button on the Controller Configuration screen that you will return to this screen next time you access the controller.
This button will swap from the Controller Configuration screen to the System Status one.

Displaying the System Status

Selecting the System Status button on the configuration screen brings up the following window where the status is displayed. Note the temperature units depend on the value set in the System Configuration:
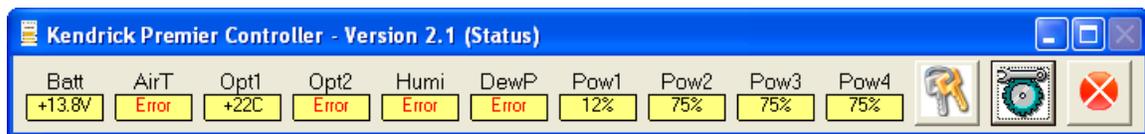
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