



3/13/2016

Model 200

HIGH TEMPERATURE AIR FLOW MONITOR OPERATING MANUAL



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1 Introduction

The Wind-Probe Model 200 High Temperature Air Flow Monitor system is a single probe instrument for measuring air flow from 0 to 500 ft/min. The system contains the following components:

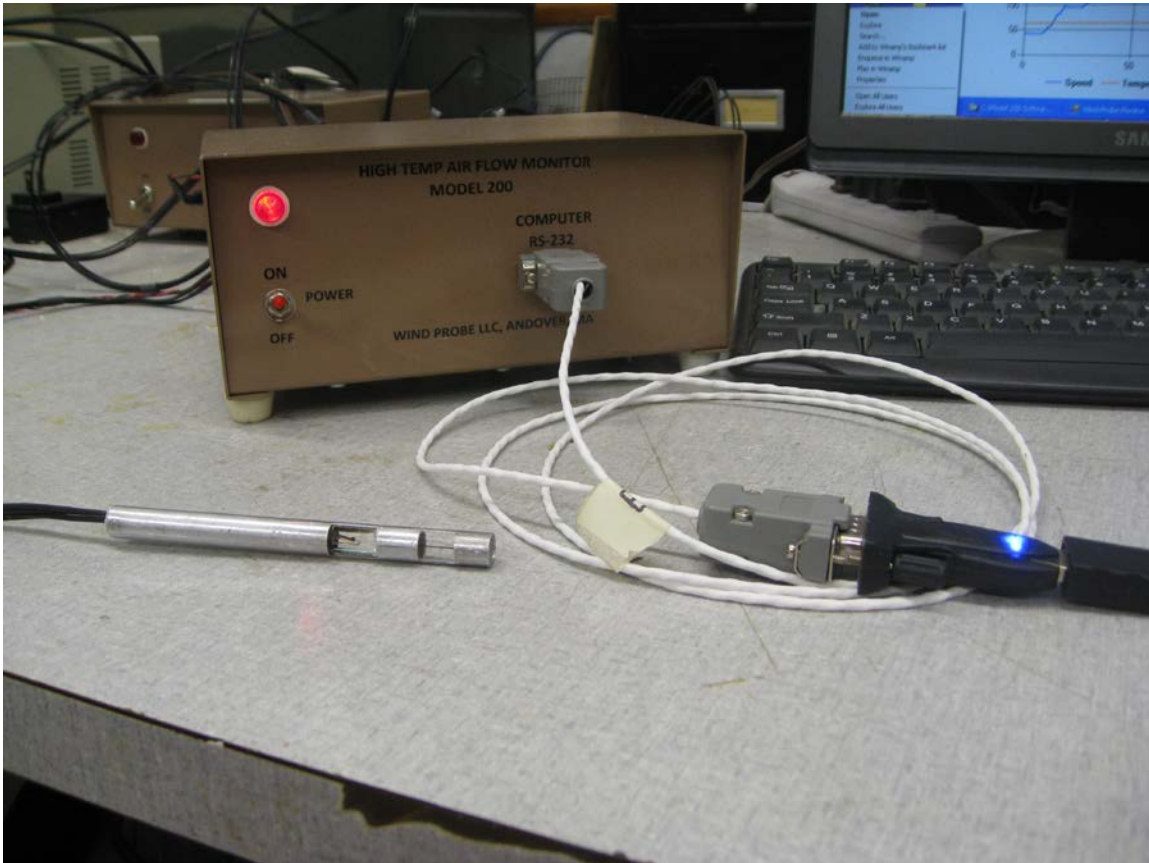


Figure 1 System components



Figure 2 Back of Control box

1.1 Control box

The control box contains the control electronics and has two connectors, one for the probe interface and one for an RS232 interface.

1.2 Probe

The probe contains the wind sensor and temperature sensor and comes with a 16 foot cable that connects to the control box.

1.3 USB to Serial Converter

A USB to serial converter is provided for convenience

1.4 Software Disk

The software disk contains the Wind-Probe application software for interacting with the probe and recording data.

2 Model 200 Quick Start Guide

This section provides the quick start guide for setting up your probe and capturing data.

2.1 Connect the hardware

- Connect the DB9 connector on the end of the probe cable to the control box connector labeled probe.
- Connect the DP9 connector on the end of the USB to serial cable to the control box connector labeled RS232 and connect the USB end of the converter cable to a PC.
- Plug the power cord into a 120VAC wall outlet.
- Position the probe in a location where you want to measure airflow.

2.2 Software installation

To install the software, insert the CD into the computer and wait for the auto-start. If auto-start is not enabled, simply browse the CD and double click the setup.exe application. When the installation starts, the following message may appear. If so, click Install.

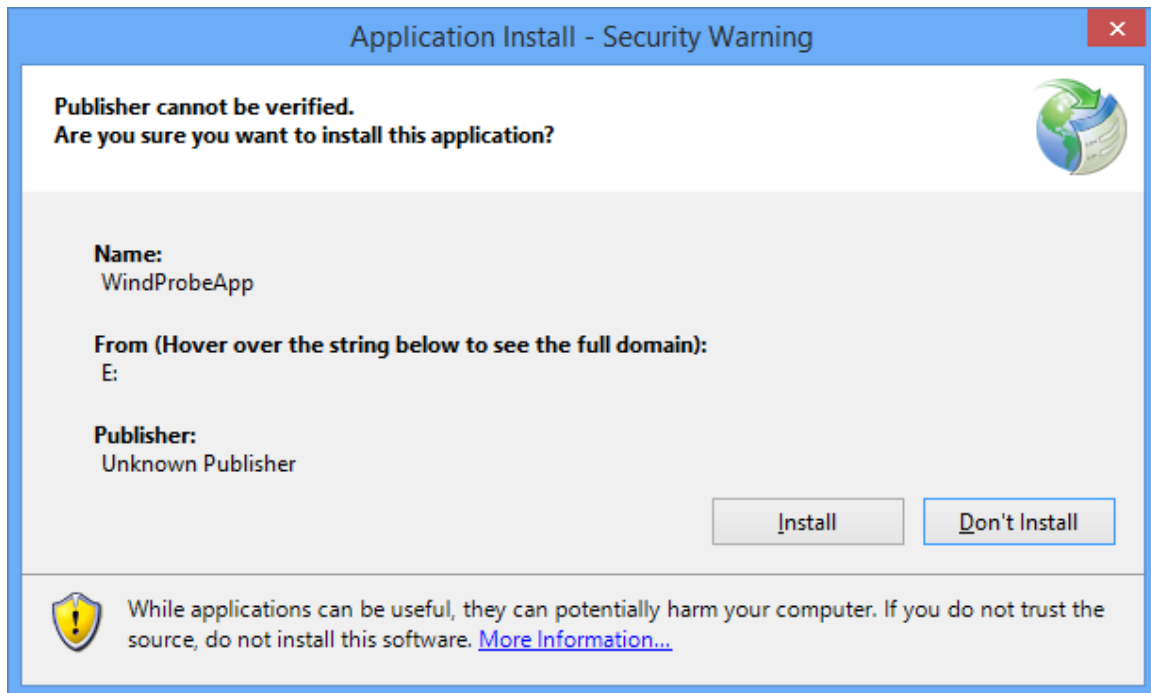


Figure 3 Installation Screen

A desktop icon will be added, the installation will complete and the program will start as shown below.

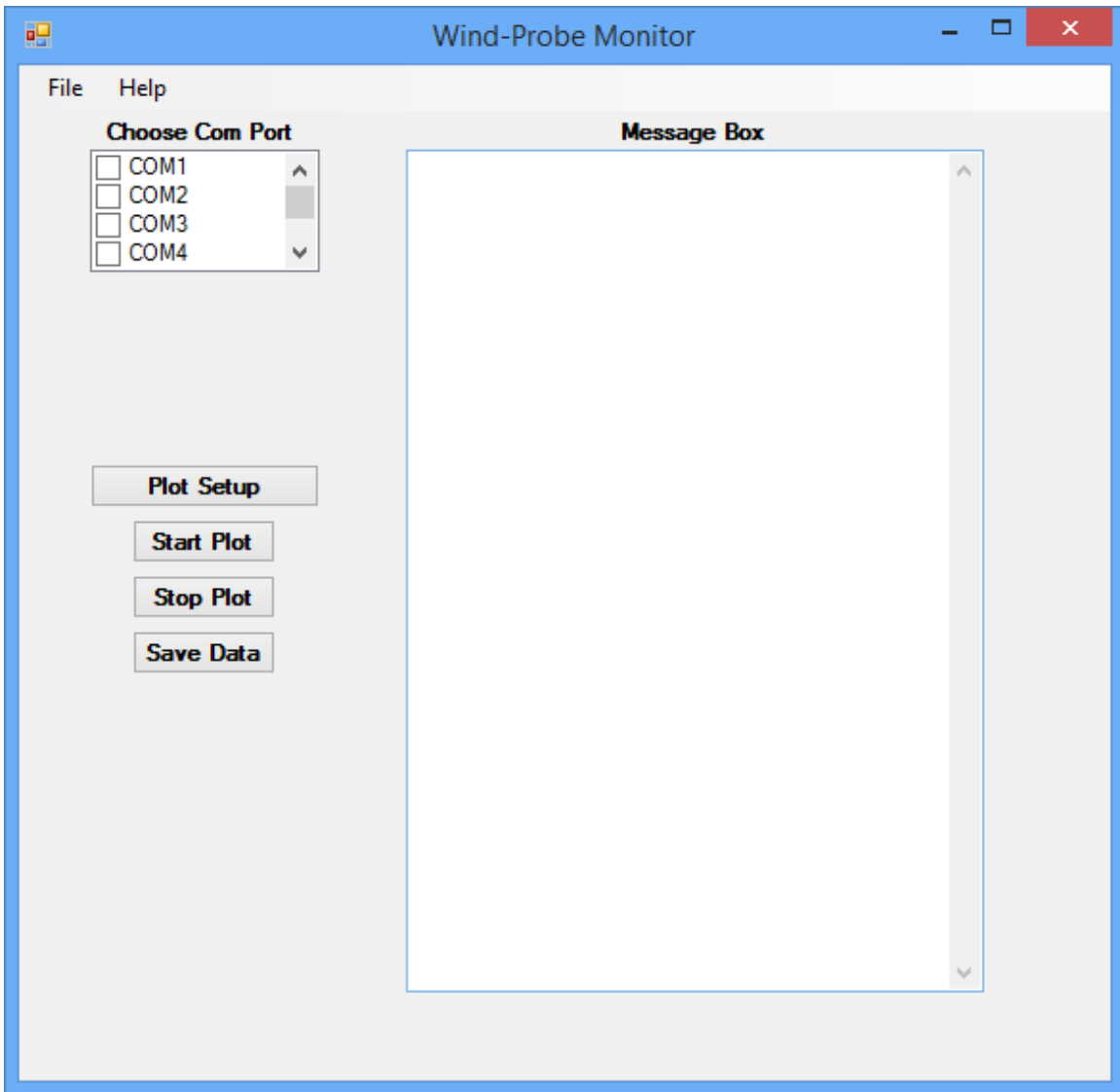


Figure 4 Wind Probe Monitor Main Screen

2.3 Run the software

Click the checkbox for the Com Port that the USB to Serial converter is using. If the software detects the port it will display a message saying Comx is available in the Message box as shown below. If the Com port is not detected a message saying Comx is not Available. If this is the case recheck your PC settings to determine the correct Com port used by the USB to Serial converter.

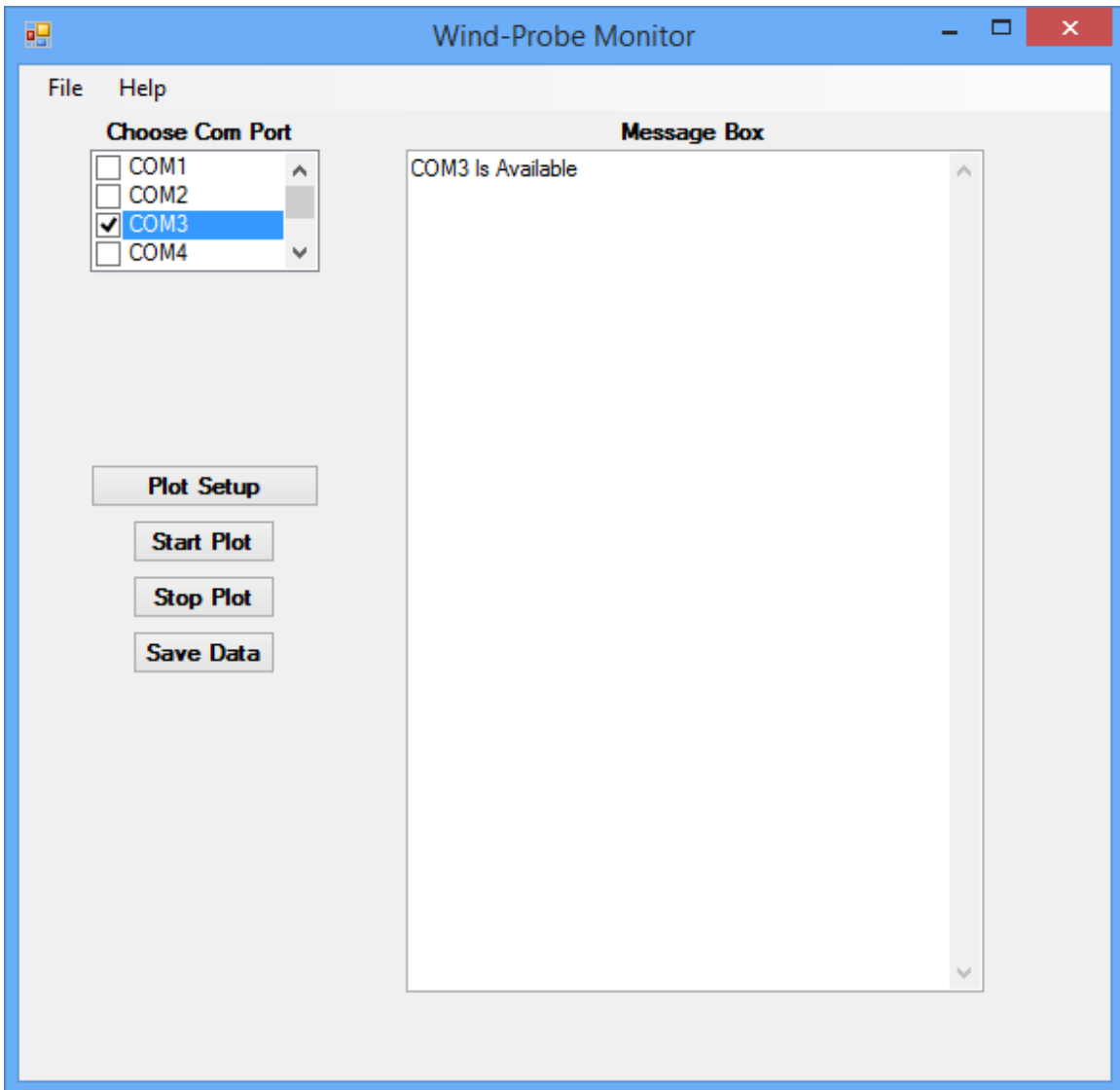


Figure 5 Communications Port Selection

To start collecting data from the probe click the Start Plot button and the default plot screen will appear as shown below and the data will start being taken once per second. The sampled data will be displayed in the Message Box and plot. The default plot shows the air speed and temperature on a combined plot with automatic scaling.

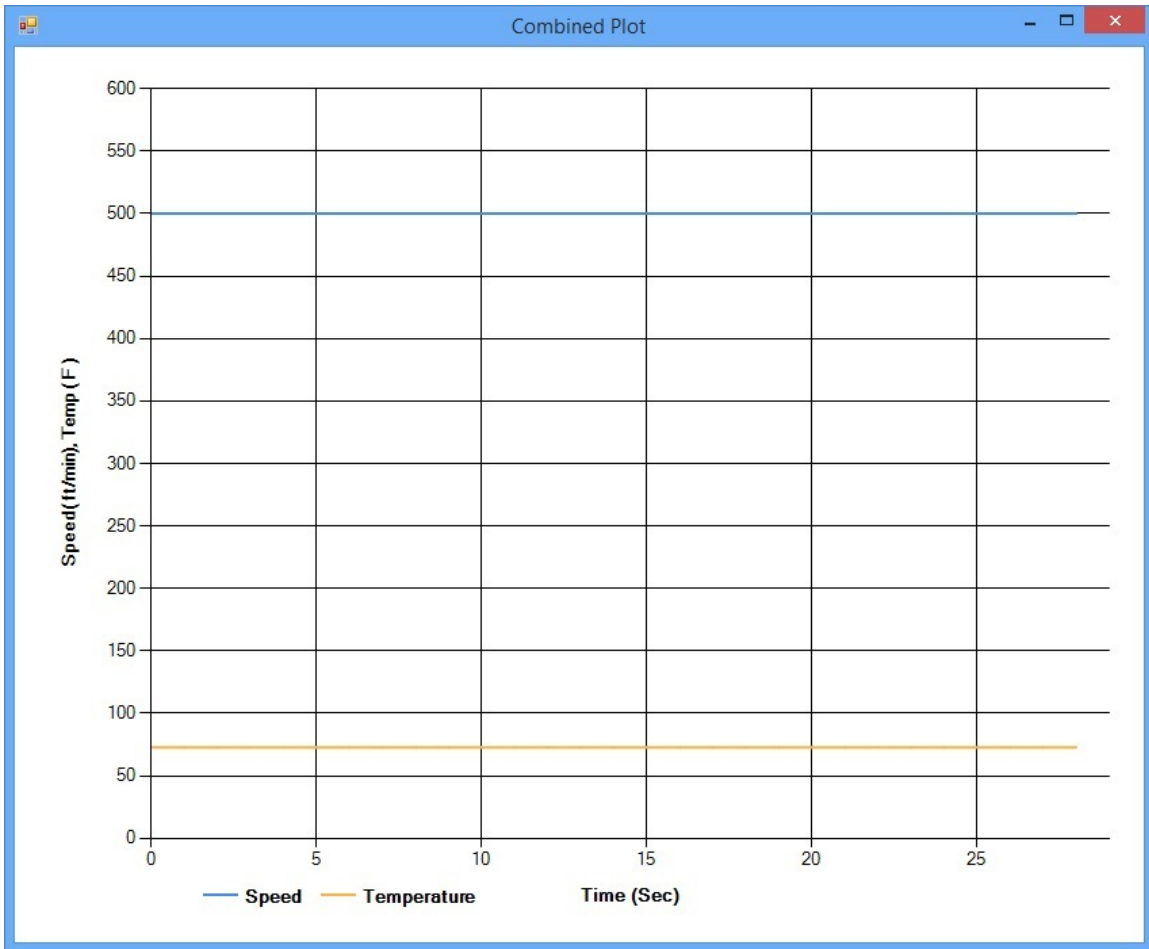


Figure 6 Combined Plot of Speed and Temperature

To stop taking data click the Stop Plot button and data acquisition will be halted.

To save the data to a file click the Save Data button and the dialog box shown below appears. Browse to the folder where you want to save the data and enter a filename and click Save. The CSV extension will be automatically added to the save filename. The format of the data file is Comma Separated Values (CSV) with three values per line consisting of the sample time in seconds, the speed in feet per minute and the temperature in degrees Fahrenheit. The CSV format allows for easy import into Excel if so desired to further process the data.

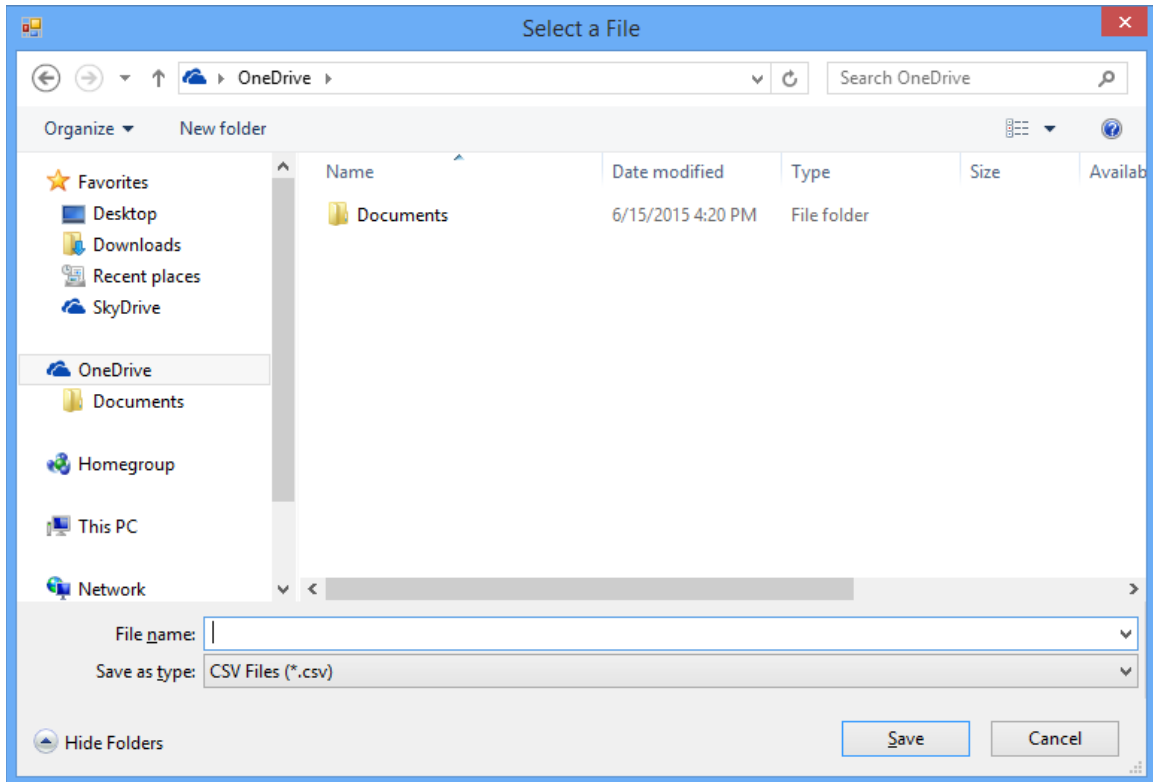


Figure 7 Save Data Dialog Box

3 Normal Operating Procedure

3.1 Start the software

Double click the WindProbeApp icon on the desktop or navigate to it from the Windows Start button. The main application window will open as shown below.

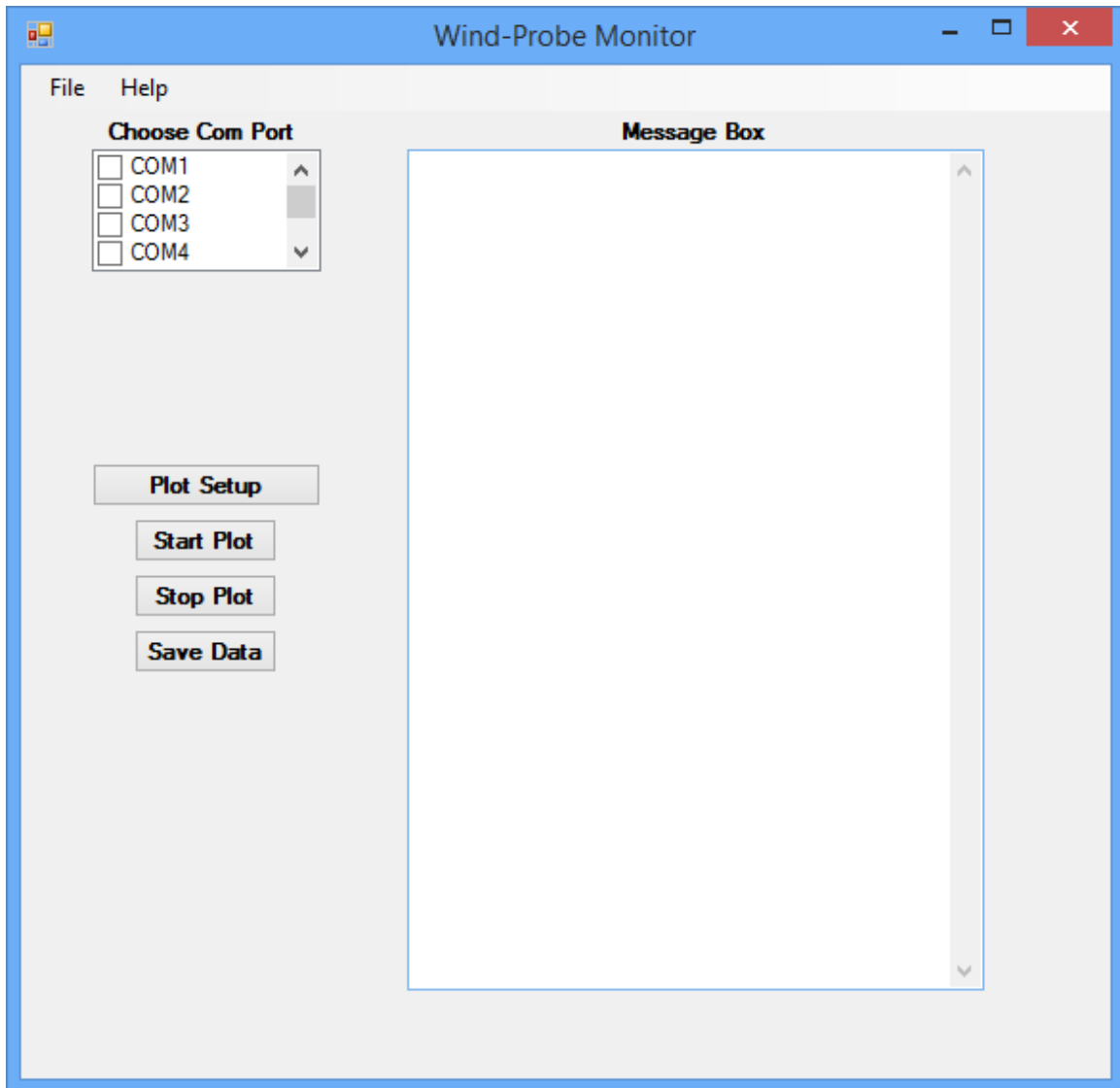


Figure 8 Main Application Window

3.2 Select Com port

Click the checkbox for the Com Port that the USB to Serial converter is using. If the software detects the port it will display a message saying Comx is available in the Message box as shown below. If the Com port is not detected a message saying Comx is not Available. If this is the case recheck your PC settings to determine the correct Com port used by the USB to Serial converter.

3.3 Select plot options

Click the Plot Setup button to display the Plot Setup dialog box. The plot options include a combined plot displaying both speed and temperature, and individual plots for speed and temperature. The combined plot settings allow you to enable the speed and/or temperature data for the plot. Check the Enable checkbox for the signals desired. The Y-axis scale can be set to Auto with the Auto Scale checkbox or set manually using the Manual Y Scale Max drop down box and selecting a setting.

Below the combined plot settings are settings for individual plots for speed and temperature. To enable the individual plots check the Enable checkbox for the speed and/or temperature plot and set the scale options desired. Both, the combined plot and the individual plots can be enabled if desired. If they are all enabled three plots will appear when the Start Plot button is pressed on the main window.

The default settings are as shown in the figure below so if you know you want the combined plot with auto scale then there is no need to use the Plot Setup button.

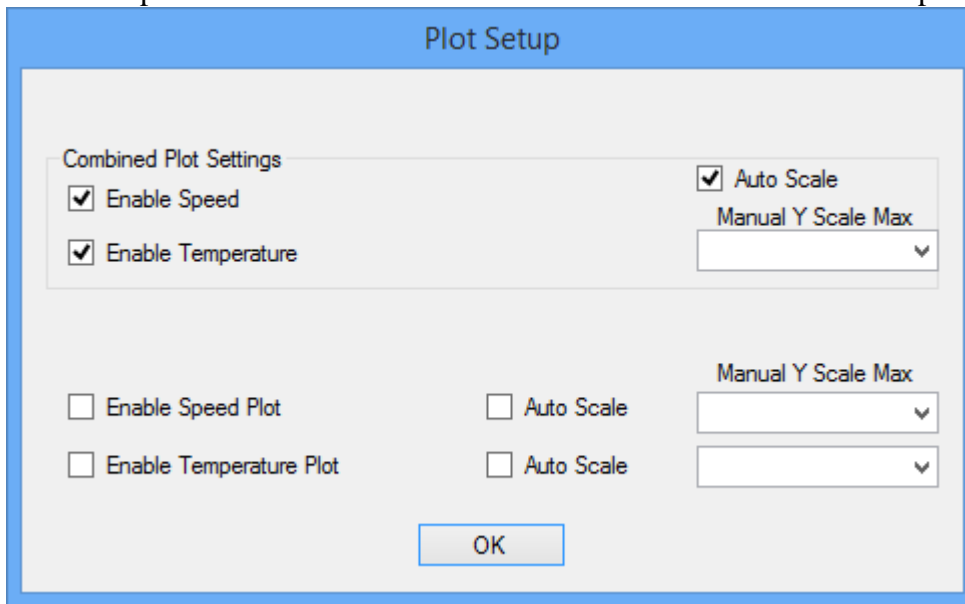


Figure 9 Plot Setup Window

3.4 Start capturing data

After selecting your plot options, start collecting data by pressing the Start Plot button on the main window. Clicking the Start Plot button will open the selected plots and start displaying the data. The plot windows and main window can be resized and positioned on the screen as is convenient for you.

3.5 Stop capturing data

To stop plotting the data, click the Stop Plot button on the main screen. The plot updates will stop.

3.6 Save Data

The captured data can be saved to a Comma Separated Value (CSV) file. The CSV file is a text file with data values separated by commas. Each line in the file consists of:

Sample time, speed in ft/min, temperature in Fahrenheit.

A nice feature of the CSV file is that it can be imported into Excel directly with the three items per line imported into separate Excel columns. Simply opening the file in Excel should automatically import the data correctly.

To save the data, either choose Save Data from the file menu or click the Save Data button on the main window. Doing so will open the dialog box.

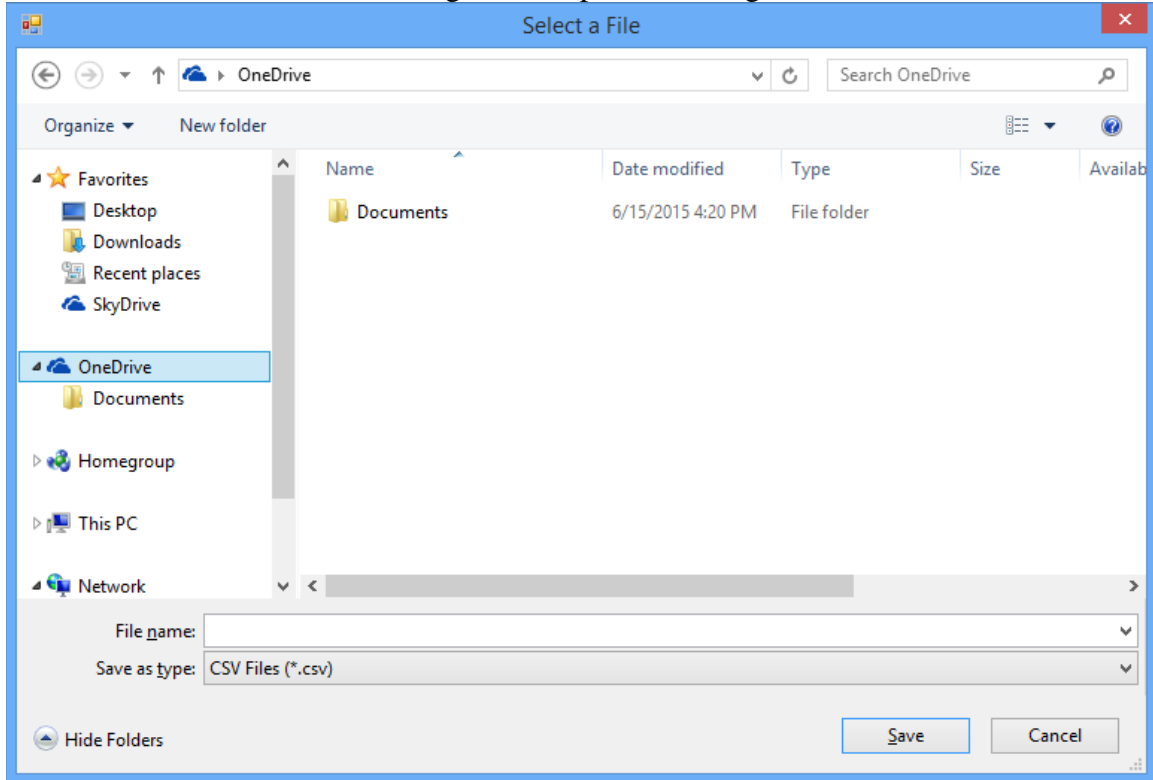


Figure 10 Save Data Dialog Box

Enter a filename and click Save to save the file.

3.7 Print plots

The plots can be printed if desired. To print a plot choose Page Setup from the File menu and select the plot you want to setup. The Page Setup dialog window opens where the paper size and orientation can be set.

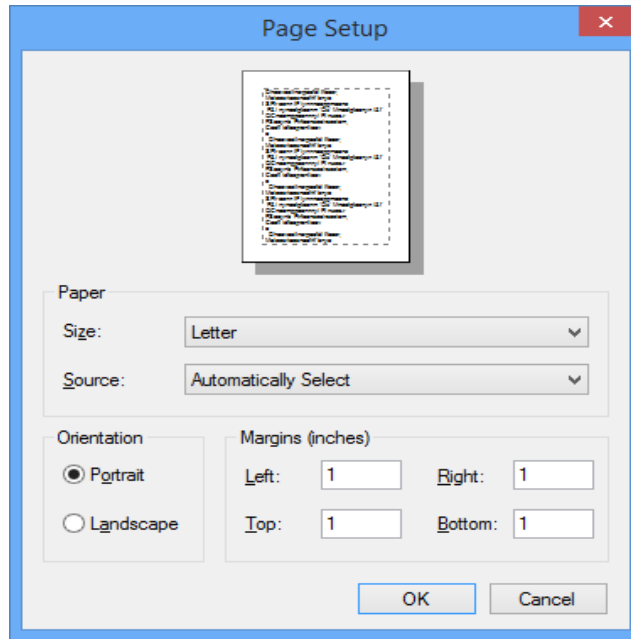


Figure 11 Page Setup Dialog Box

Then choose Print Plot from the File menu and click on the plot to print. The print preview screen will appear.

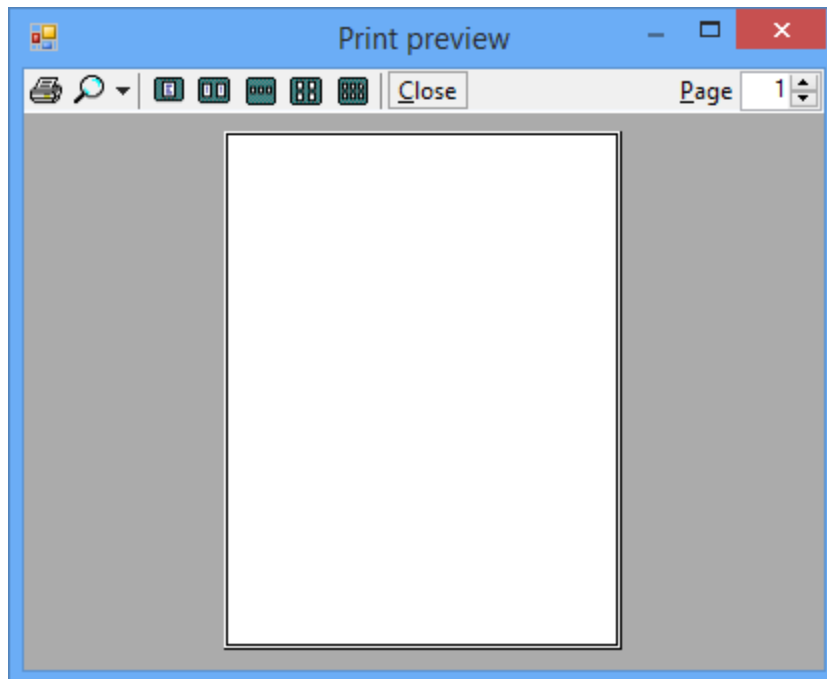


Figure 12 Print Preview Dialog Box

Click the printer icon to print the plot to the default printer.

3.8 Save configuration

The configuration of the software including the plot settings, window sizes and positions can be saved to allow it to be restored quickly on a future run. To save the configuration choose the Save Config option from the File menu. The Select a File dialog box appears. Choose a file name and click Save. The configuration data is now saved.

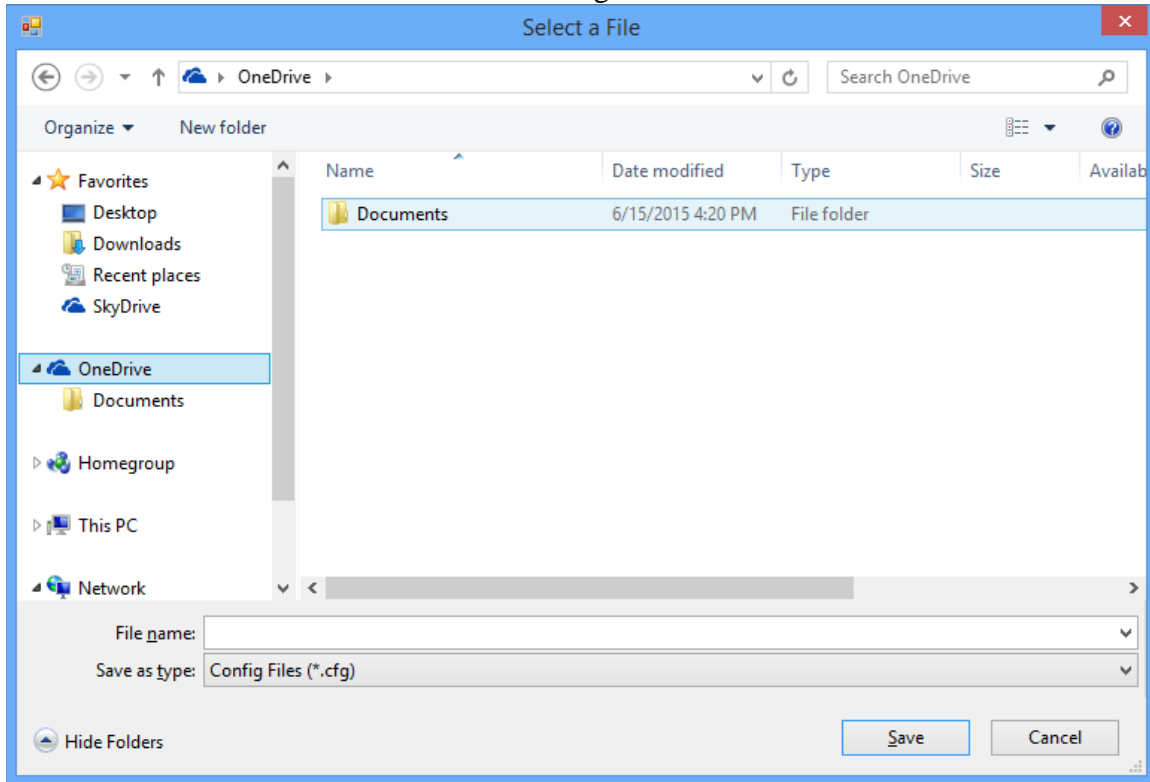


Figure 13 Save Configuration Dialog Box

For example, a configuration as is shown below showing the main window along with Speed and Temperature plots could be saved.

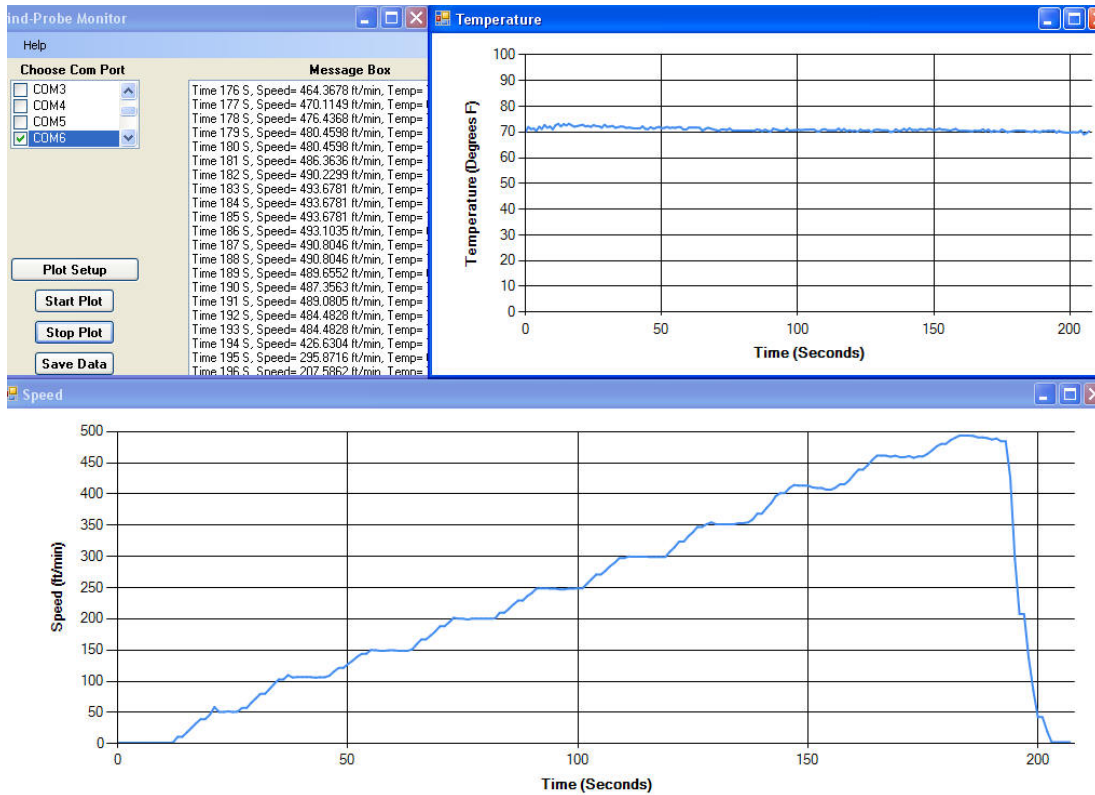


Figure 14 Example Window Configuration

3.9 Load configuration

A previously saved configuration file can be loaded by selecting Load Config from the File menu. The Select a File dialog appears.

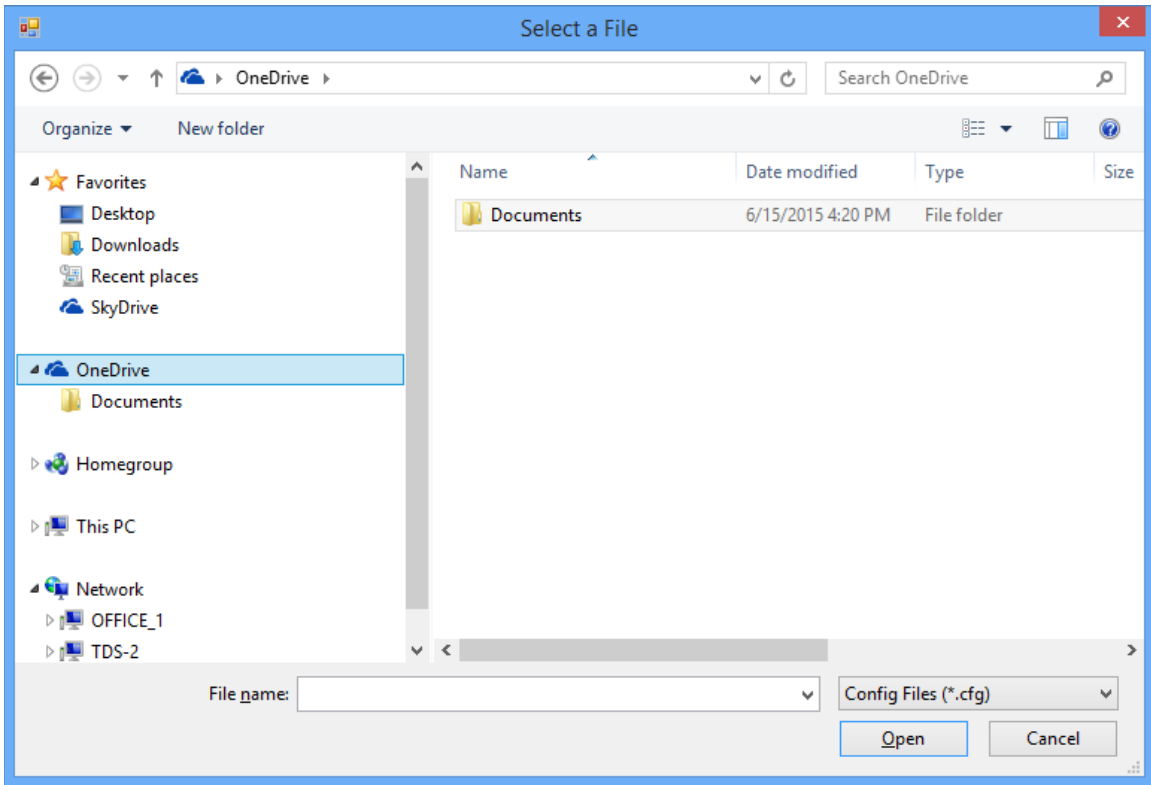


Figure 15 Load Configuration Dialog Box

Browse to the saved configuration file and click Open. The previously saved configuration is loaded with the plot settings and window size and position settings. The plots windows may not be apparent until the plots are started with the Start Plot button.