



Kestrel® Interface Serial Cable

Communication Software Version 1.16

Thank you for purchasing the Kestrel Interface and Communication software. This system will upload the stored data from your Kestrel 4000 Pocket Weather Tracker or Kestrel 4100/4200 Pocket Air Flow Tracker to your PC. This permits long-term storage, in-depth analysis or detailed charting.

1) What's in the Box

- **Interface Cradle:** Kestrel snaps into the cradle and communicates optically.
- **Serial Cable:** Plugs into the interface and an available serial port in your PC.
- **Tripod Standoff:** Screws into the bottom of the interface to attach to a tripod. The nut is loose for adjustability.
- **CD-ROM:** Installs upload program that pulls the data from the Kestrel to a comma-delimited text file. The software's primary function is to upload stored data from a Kestrel Meter. The software is also able to perform some configuration functions.

2) What You'll Need

- PC with an available serial port, or PC with an available USB port AND an installed USB-Serial adapter.
- Windows 3.1 or higher.
- Kestrel 4000 or 4000NV Pocket Weather Tracker; Kestrel 4100 or 4200 Pocket Air Flow Meter

3) Using a Serial to USB Adapter

- ☞ If you are using a serial to USB adapter, **INSTALL THE ADAPTER SOFTWARE** first before plugging the adapter cable into your computer and before installing the Kestrel Communication Software. Using the Windows Device Manager (found under Control Panel / System / Hardware), check the settings for the COM Port being used by the serial port adapter and ensure that it is set to COM 1, 2, 3 or 4. Make a note of the COM Port number for use in Step 6. If your adapter cannot create a COM Port number between 1 and 4, it will not work with the Kestrel upload software.

4) Set up the Interface

Connect the Interface:

- Plug the end of the serial cable with the pins into the connector on the interface.
- Plug the end of the serial cable with the sockets into the serial port on the PC.

NOTE: USB-Serial adapter take a variety of forms. Some (such as Keyspan), are a large plug with a serial connector on one end, and a USB connector on the other end. You will use the supplied serial cable with such adapters. Some are CABLES with an integrated adapter. When using this type, you will substitute the adapter cable for the supplied Serial cable.

Load the Kestrel 4000:

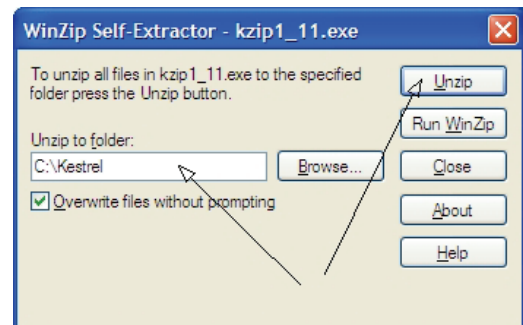
- Place the Kestrel 4000 into the cavity of the interface with the battery door end of the Kestrel closest to the cable plug. The Kestrel should be facing up, so the display is visible. The lanyard will fit in a slot in the interface, and does not need to be removed for uploading.

Using the Optional Tripod Mount:

- Screw the bolt end of the black standoff attachment into the nut on the interface. Screw the bolt on the tripod into the base of the standoff.
- When using the interface on a tripod, pull the elastic strap over the Kestrel to secure it.

5) Install the Kestrel Communication Software

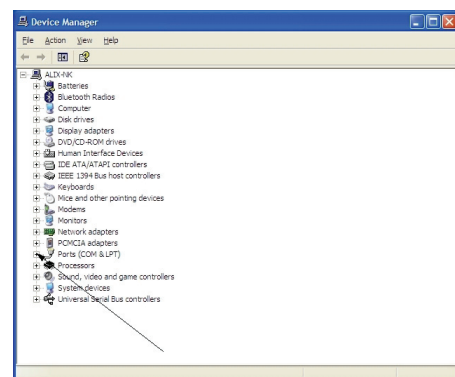
- Load the CD marked "Kestrel Upload Software" into your computer's drive. Browse to the CD-ROM in My Computer and double-click "Kzip1_16.exe". This is a self-extracting zip file, which will extract the required files to your hard drive. Specify your desired installation location in the "Unzip to folder:" dialog box on the left of the unzip window before clicking "Unzip". **The recommended location is C:\Kestrel.**



- The Unzip will place these seven files in the specified directory. All seven of these files must be present in this directory for the software to run. Do not delete or rename any of these files.
 - Comdef.ini [defines the COM Port used]
 - Kstr1_16.exe [the Kestrel Communication Software]
 - TB510.DLL
 - XNMBA420.DLL
 - XNMTE420.DLL
 - XNMBA458.DLL
 - XNMTE458.DLL
- The installation will also place a .pdf version of these instructions, interface_116.pdf, in the installation directory for future reference.

6) Set the Communication Port:

- Each 9-pin serial connector on your computer is identified by a COM port number assigned by your computer. If you are using a Serial to USB adapter, you should have assigned and noted a COM port number in step 3.
- In Windows, you can identify which com port is in use by accessing the Device Manager. (Found under Control Panel / System / Hardware. Enter "Device Manger" under "Help" if you are unsure how to locate the Device Manager in your version of Windows.) Expand the [+] symbol by "Ports" to see the COM Port number for your interface connection (or Serial to USB adapter). This must be a number between 1 and 4 to work with the Kestrel Communication Software.



- The Kestrel Communication Software is set to communicate with COM-1 by default. If you are using a different COM port, you will need to change this setting. This setting is stored in a very small text file called "comdef.ini" found in the Kestrel directory created above. Using Windows Notepad or other text editor of your choice, open "comdef.ini". The single digit in this file is the number of the Com Port the software will use to communicate. Change this to the number of the COM Port your interface

cable is actually plugged into OR, if you are using a Serial to USB adapter, the COM Port number created by the adapter software. Save and close the file.

- Close and restart the Kestrel Communication Software to ensure that it reads comdef.ini and uses the correct COM Port.

6) Upload Data

Double-Check Communication Setup:

Before attempting to upload, double-check the following:

- The USB adapter cable is securely connected to the computer and interface;
- The adapter cable is set to use a COM Port between 1 & 4, and this COM Port setting is specified in comdef.ini;
- The Kestrel is properly mounted on the interface;
- The Kestrel is turned on.

Launch the Kestrel Communication Software:

- Browse to the "Kestrel" directory created when you installed the software. Double click "Kstrl1_16.exe" to start the software. (If you wish, you may use the steps appropriate for your version of Windows to create a shortcut from this .exe file on your desktop for faster access to the program.) A splash screen will appear, with instructions to press any key to continue.

Upload Data from the Kestrel:

- Select Upload Data Log from the Communicate menu.
- The software will attempt to communicate with the Kestrel. It may take approximately 4 seconds to establish a connection. ** If the connection was not successful, re-read the above instructions under "double-check communication setup". **
- Select a file name and location. The file will be saved in a comma separated values format (csv). The default name is formatted for the current date (yyyymmdd.csv). The default directory is called "data" and is automatically created under the "Kestrel" software directory.
- The data will be displayed on the screen as it is uploaded. The upload may take up to 2 minutes, depending on the amount of data.
- After upload is complete, a text file is automatically created in order to store notes pertaining to the uploaded data. Select a file name and location. The file will be saved in a text format (rem). The default name is the same as the data file. The default directory is "data".
- Write up to 99 lines of notes in the remarks file. Complete your remarks with a carriage return on a blank line to indicate the remarks are complete.
- The data will remain available on the screen for review. See Fig. A for a data screen example and explanation of the data column abbreviations.

8) Perform Other Program Functions

Options on the "Communicate" Menu:

- **Clear Data Log:** Select "Clear Data Log" from the "Communicate" menu to clear all of the data **on the Kestrel**. You will not be able to restore this data once cleared!
- **Restore Units Defaults:** Select "Restore Units Defaults" to reset the units of measure on the Kestrel to the default metric or imperial factory settings.
- **Restore Pressure Cal:** Select "Restore Pressure Cal" from the "Communicate" menu to reset the pressure sensor calibration to the factory setting.
 - ☞ Use this option **ONLY** if the pressure calibration setting on the Kestrel was incorrectly set through an inadvertent or incorrect calibration procedure.
- **Properties/Identification:** Select "Properties/Identifica-

tion" from the "Communicate" menu to display detailed properties of the Kestrel for diagnostic purposes. This option is generally only used by the factory or under instruction from Kestrel technical support.

Options on the "File" Menu:

- **Open:** Select "Open" from the "File" menu to open and view previously saved files. Browse the computer for the desired file and double-click to open. The data will be read in from the file and displayed on the screen.
- **View:** Select View" from the "File" menu to display the data from the current file or upload if cleared by another program operation (such as printing or resetting).
- **Printer Setup:** Select "Printer Setup" from the "File" menu to configure the printer and associated options. **Be sure to set the Paper Orientation to Landscape for proper printing of the data table.**
- **Print:** Select "Print" from the "File" menu to print a report containing all the data points as displayed on the screen.
- **Exit:** Select "Exit" from the "File" menu to exit the program.

9) Chart, Graph or Analyze

To perform more in-depth data analysis and manipulation, or prepare charts or graphs, you may open the .csv files created by the Kestrel Communication Software in Microsoft Excel, Lotus 123, or other spreadsheet program.

Fig. A) Sample Screen Shot of Data Upload - Column Heading Abbreviations

FORMATTED DATE-TIME	DT	WS	TP	WC	RH	HI	DP	WB	BP	AL	DA
YYYY-MM-DD HH:MM:SS	s	mph	°F	°F	%	°F	°F	inHg	inHg	ft	ft
2002-04-26-09:43:40	73129420	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-260	678
2002-04-26-09:43:45	73129425	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:43:50	73129430	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:43:55	73129435	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:00	73129440	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:05	73129445	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:10	73129450	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:15	73129455	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:20	73129460	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-260	678
2002-04-26-09:44:25	73129465	0.0	71.9	71.9	32.6	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:30	73129470	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-260	678
2002-04-26-09:44:35	73129475	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:44:40	73129480	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-260	678
2002-04-26-09:44:45	73129485	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-261	678
2002-04-26-09:44:50	73129490	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-260	678
2002-04-26-09:44:55	73129495	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-261	678
2002-04-26-09:45:00	73129500	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-261	678
2002-04-26-09:45:05	73129505	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-260	678
2002-04-26-09:45:10	73129510	0.0	71.9	71.9	32.4	68.9	40.2	57.0	30.15	-260	678
2002-04-26-09:45:15	73129515	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-260	678
2002-04-26-09:45:20	73129520	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-260	678
2002-04-26-09:45:25	73129525	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-261	678
2002-04-26-09:45:30	73129530	0.0	71.9	71.9	32.3	68.9	41.0	57.0	30.15	-260	678
2002-04-26-09:45:35	73129535	0.0	71.9	71.9	32.5	68.9	41.0	57.0	30.15	-261	678

Heading	Description
FORMATTED DATE-TIME	Formatted Date-Time (YYY-MM-DD HH:MM:SS)
DT	Unformatted Date-Time (seconds since 01/01/2000 as 00:00:00)
WS	Wind Speed
TP	Temperature
WC	Wind Chill
RH	Relative Humidity
HI	Heat Index
DP	Dewpoint
WB	Wet Bulb Temperature
BP	Barometric Pressure
AL	Altitude
DA	Density Altitude

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