

WeatherLink® for Windows®

Getting Started Guide

For Weather Monitor II, Weather Wizard III, and Perception II Weather Stations
Product #7862



DAVIS 
Davis Instruments

FCC Part 15 Class B Registration Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved in writing by Davis Instruments may void the user's authority to operate this equipment.

EC EMC Compliance

This product complies with the essential protection requirements of the EC EMC Directive 89/336/EC.

Product Number: 7862

Part Number: 7395.179

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Welcome to WeatherLink!

Welcome to Davis Instruments' WeatherLink for Windows. WeatherLink's data logger and software connects a personal computer to your Davis weather station, allowing you to store, view, plot, analyze, export, and print your weather data.

The following Davis Instruments' weather stations are supported: Weather Monitor II[®], Weather Wizard III[®], and Perception II[®].

Contents of Package

Before continuing, please make sure your WeatherLink package contains the following listed items:

- **Data Logger for Monitor, Wizard and Perception**
 - **9-pin (DB-9) PC COM Port Adapter (black)** — Use the 9-pin adapter to connect the data logger to a 9-pin serial port.
-

Note: If you need a 25-pin adapter, contact Davis Instruments Technical Support at 510-732-7814.

- **Loopback Connector** — The loopback connector is a short piece of cable with a phone plug at one end and a red plastic cap at the other.
- **WeatherLink Software CD ROM**

Optional Accessories

The following optional accessories, designed for use with WeatherLink, are available from your dealer or may be ordered directly from Davis.

- **Telephone Modem Adapter (# 7870)** — For transmission of data from the data logger using a modem.
- **Standard 4-Conductor Extension Cable (# 7876)** — For more flexibility in the placement of your console. Add one 40' (12 m) extension cable to extend the distance between your station and the computer (48' (14.4 m) maximum).
- **USB-to-Serial Cable (# 8434)** — For computers with no serial port. Allows you to convert the console's serial connection to a USB interface.

Hardware Installation

You can either install WeatherLink to create a local connection between your computer and weather station, or you can install WeatherLink to use a modem connection to a remote weather station. Requirements and installation for each type of connection differ, and are explained separately below.

Local Connection Hardware Requirements

The following additional hardware is required for a local connection:

- Computer running Windows™ 2000, XP, or Vista and requires 5 MB of free disk space.
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Note: The .NET framework is required to run WeatherLink 5.8 or later. It is installed as part of the software installation if it is not already on your computer.

The amount of disk space necessary depends on the archive interval. Database files containing data stored at a 30 minute archive interval require approximately 132K of disk space per month of data. The file size changes in a linear fashion depending on the archive interval. For example, data stored at a 1–minute interval requires approximately 3.9 MB per month while the data stored at a 2–hour interval requires approximately 33 KB per month.

- **Windows-Compatible Display** — VGA minimum. SVGA or High (16-bit) Color recommended.
- One free serial port or USB Port with USB-to-Serial cable.

Remote Modem Connection Hardware Requirements

In addition to the provided hardware and the computer equipment listed above, the following hardware is required for a remote modem connection.

- One external modem to connect to the data logger at the remote site.
 - One internal or external modem connected to your computer
 - Modems must be Hayes® Compatible and able to send data at 1200 or 2400 baud rate.
 - **Telephone Modem Adapter** — The Telephone Modem Adapter is specially wired to provide the connection between the data logger and the modem. Use a # 7870 adapter.
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Note: See the Application Note entitled “Setting up a Remote Modem Connection” located on the Weather Support section of the Davis website:
<http://www.davisnet.com/support/weather/>.

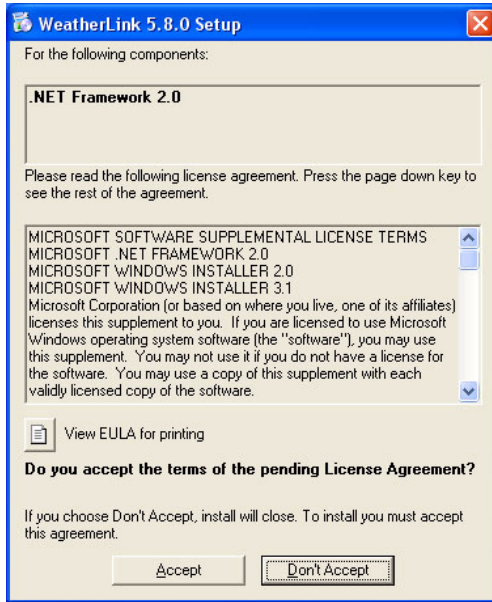
Software Installation

Follow the steps below to install the WeatherLink software.

1. Place the WeatherLink software CD in your CD ROM drive.

The install program should start automatically. If the install program does not start, select **Run** from the **Start** menu, type D:\SETUP (or the correct letter for your CD ROM drive), and click **OK** to begin the installation.

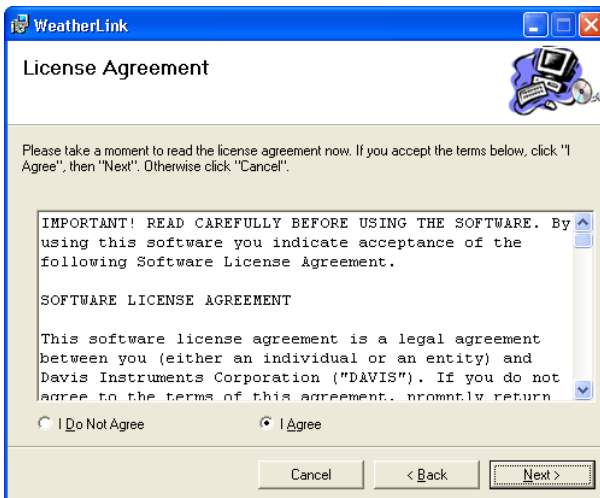
A series of dialog boxes display, prompting you to complete the WeatherLink installation. The **WeatherLink Setup for .NET Framework** dialog box may display.



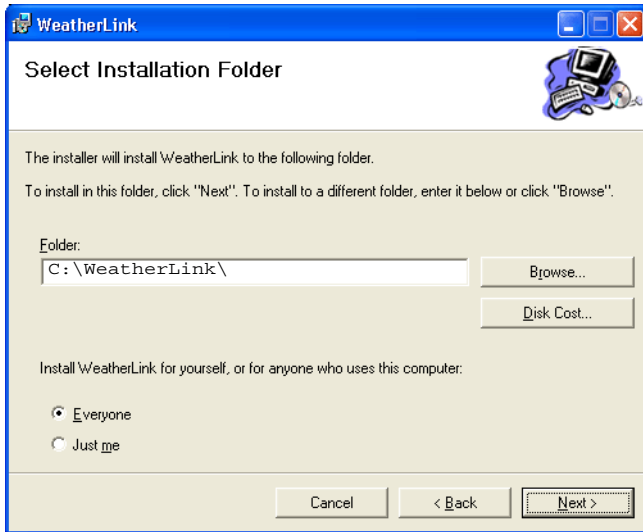
WeatherLink 5.8 requires the Microsoft .NET Framework 2.0 to operate. If your computer does not have it installed, the above dialog box displays.

2. Click **Accept** to install the necessary components.

The **License Agreement** dialog box displays.



3. Review the license agreement, click **I agree** and click **Next**. The **Choose Destination Location** dialog box displays.



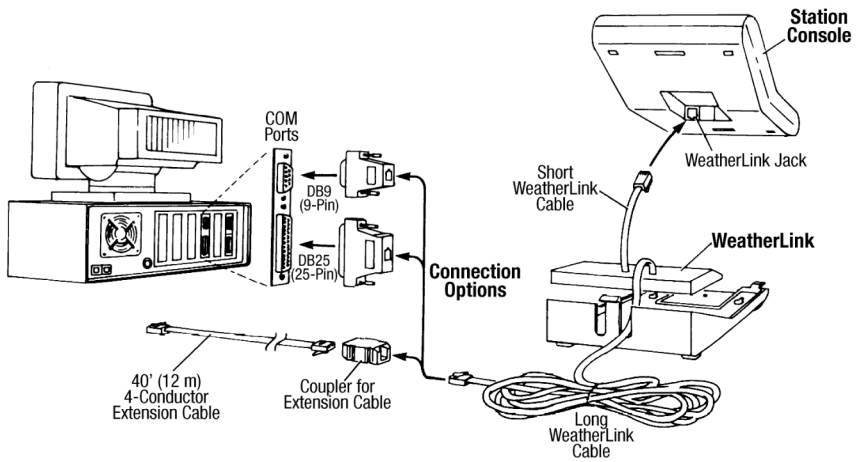
4. Select the default location to install WeatherLink or find another location by clicking **Browse**.

Note: If you are upgrading your software from a previous version, click **Browse** to search for the directory or folder of the previous version of WeatherLink. This verifies that you have a previous version of WeatherLink installed and allows you to use those available database files.

5. Click **Next** once you have selected a location. The **Confirm Installation** dialog box displays.
6. Click **Next** to start the installation. The **Installing WeatherLink** dialog box displays the installation progress. The **Installation Successful** dialog box displays once the software installation has been completed.
7. Click **OK**. WeatherLink has been installed successfully.

Local Connection Installation

The instructions below explain how to connect your Weather Monitor II, Weather Wizard III, or Perception II weather station directly to your computer.



Typical Local Connection for Original Weather Stations

1. Make a note of the barometric pressure, total rainfall, and (if applicable) calibration numbers.

You must remove power from the weather station console to install the data logger. Removing power will cause these stored weather values to be erased. Use WeatherLink to reenter these values after restoring power to the console.

2. Remove the mounting base from the console.
3. Remove all power from the console by removing the power adapter and battery backup.

Failure to remove power before installing the data logger may cause damage to the data logger and/or console.

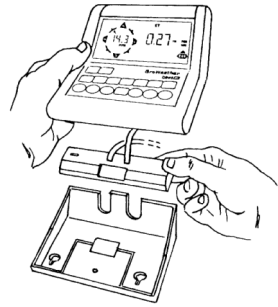
4. A small switch near the data logger cables controls the baud rate. The default setting is 2400 baud. If you need to run at 1200 baud, change the setting before connecting the data logger to the console.
5. Connect the short data logger cable to the cable jack marked "WeatherLink" on the bottom of your weather station console.
6. Restore power to the console by reattaching the power adapter and listen for the console to emit beeps.

The console should beep three times. The third beep, which should occur within 30 seconds, indicates that the data logger is operating correctly. After hearing the three beeps, re-install the battery backup.

7. Place the data logger inside the mounting base.
8. Reattach the mounting base to the weather station.

As you do so, guide all the cables through the slots on the mounting base.

9. Locate a free serial port on the back of your computer and connect the black DB9 adapter to the port or use the USB-to-Serial cable to connect to a free USB Port.



Placing Data Logger Inside Base

10. Connect the long data logger cable to the DB9 adapter connector.

The cable connecting the data logger to the computer is 8' (2.4 m) long. If you need to place the station console more than 8' from the computer, use the 40' (12 m) 4-conductor extension cable (# 7876-040).

Note: Do not attempt to use more than 40' of extension cable, or the data logger may have difficulty communicating with the computer. Do not attempt to use 4-conductor telephone cable because telephone cable will not work with the connection.

Remote Connection Installation

You can connect your computer to a remote weather station using a modem. This involves using the data logger to connect the weather station console to a modem at the remote site. Your computer can then use a modem to communicate to the remote weather station via a phone line.

At Your Computer:

1. If you don't have a modem, install and set up an internal or external modem according to the instructions supplied by the manufacturer.
2. Connect the modem to the phone line.

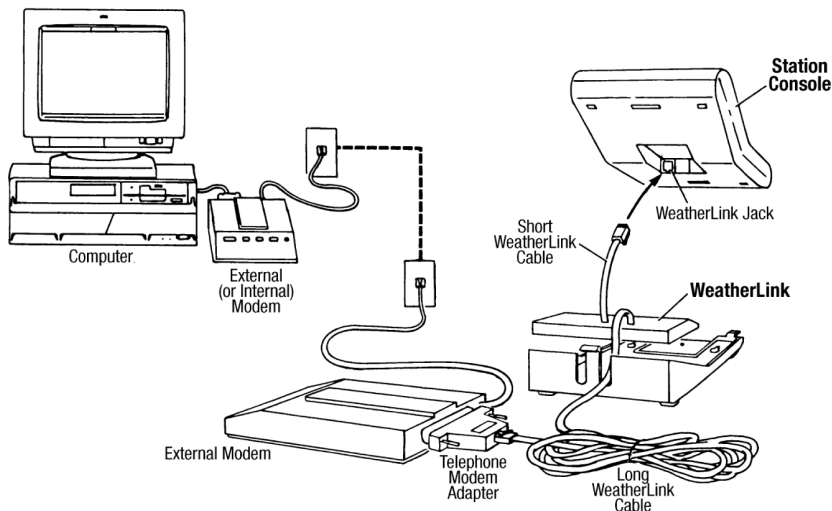
At Your Weather Station Console:

1. Make a note of the barometric pressure, total rainfall, and (if applicable) calibration numbers.

You must remove power from the weather station to install the WeatherLink data logger, which will cause these values to be erased. Use WeatherLink to reenter these values after restoring power to the station.

2. Place the external modem in a location where it can connect to both the data logger and the phone jack. Do not turn the modem on at this time.
 3. Remove the mounting base from the weather station.
 4. Remove all power from the weather station by removing the power adapter and battery backup.
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Failure to remove power before installing the data logger may cause damage to the data logger and/or station.

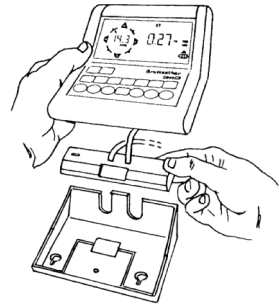


Typical Remote Installation for Original Weather Stations

5. A small switch on the data logger near the cables controls the baud rate. The default setting is 2400 baud. If you need to run at 1200 baud, change the setting before connecting the data logger to the console.
6. Connect the short data logger cable to the cable jack marked "WeatherLink" on the bottom of your weather station console.
7. Connect the blue Telephone Modem Adapter to the external modem. The Telephone Modem Adapter (#7870) is required to use the data logger with a modem. A standard DB25 connector with a gender changer will not work.
8. Connect the long data logger cable to the Telephone Modem Adapter.
9. Turn the modem on.
10. Restore power to the weather station console by reattaching the power adapter and listen for the console to emit beeps. The console should beep three times. The third beep, which should occur within 30 seconds, indicates that the data logger is operating correctly. After hearing the three beeps, re-install the battery backup.

11. Place the data logger inside the mounting base.
12. Reattach the mounting base to the weather station.

As you do so, guide all the cables through the slots on the mounting base.



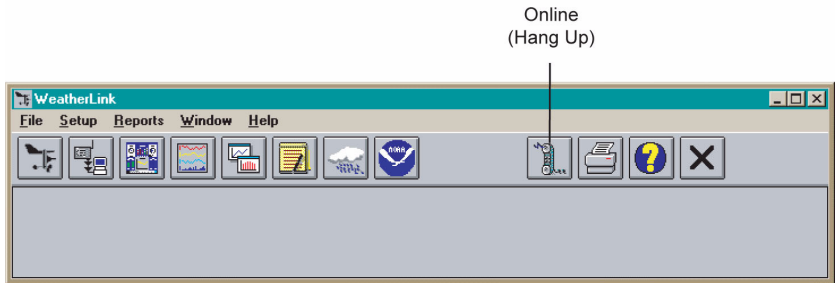
Placing Data Logger Inside Base

Remote Modem Connection Notes

When accessing a remote modem connection, WeatherLink automatically dials the station and console whenever an action has been performed in the software that requires it to talk to the station.

While connected to a remote station, an **On-Line** icon displays in the tool bar. This icon indicates that WeatherLink has established a connection with the remote console and weather station.

To disconnect the phone connection, select the **On-Line** icon from the tool bar or select **Hang Up** from the **File** menu.



Toolbar with On-Line Icon

By default, WeatherLink disconnects from the modem after one minute without any communication with the station. Use the **Communications Port** dialog box in the **Setup** menu of WeatherLink to change this default value. (See the WeatherLink Online Help for more information.)

Note: WeatherLink does not hang up the phone line if the bulletin, summary, or other windows receiving real-time data from the console are active.

Software Setup

It is easy to set up WeatherLink on your computer once the connection to your console has been configured. Walk through the following procedures to setup and configure your WeatherLink software and the connection to your console.

Running the Software

To run the software, double-click the **WeatherLink** icon. If no stations have been assigned in the program directory, the software prompts you to add a station (see below for details).

If this is a software upgrade and if there is more than one station in the program directory when the application opens, the last station that was displayed is automatically opened.

Station Setup

Each station connected to the computer must have its own station within the software. The software creates a database for the station and other station-specific information, and requires the necessary communication settings (communication type, etc.) be provided.

Adding a Station

1. Select **New Station** from the **File** menu. The **New Station** dialog box displays.
2. Type the desired station name (up to 40 characters/spaces) into the **Station Name** text box. The software uses the first eight characters of the station name (not counting spaces or punctuation marks) as the name of the directory where it saves this station's database and configuration files. The first eight characters of each station name must, therefore, be unique.
3. Click **OK** to save the new station or click **Cancel** to exit without saving.

The software saves the new station, creates a directory and a configuration file for the station, and prompts you to enter the walk-through procedure.

About the Walkthrough

The software includes a station setup walkthrough that steps you through the weather station configuration procedures. After adding a new station, the **Walkthrough** dialog box automatically displays. By selecting **Yes**, the walkthrough begins. By selecting **No**, the Walkthrough is cancelled.

You can set up and configure your station by separately selecting all of the necessary setup options from the **Setup** menu. A Walkthrough option is included in the **Setup** menu that allows you to access the Walkthrough at any time.

Note: When necessary, the software automatically dials a phone modem station.

By selecting the Walkthrough process, the software displays a series of dialog boxes. At each step in the Walkthrough process, confirmation boxes are provided to perform or skip the next step in the Walkthrough. To continue, select **OK**. To skip this step and move to the next step, select **Skip**. To cancel the entire walkthrough process, select **Cancel**.

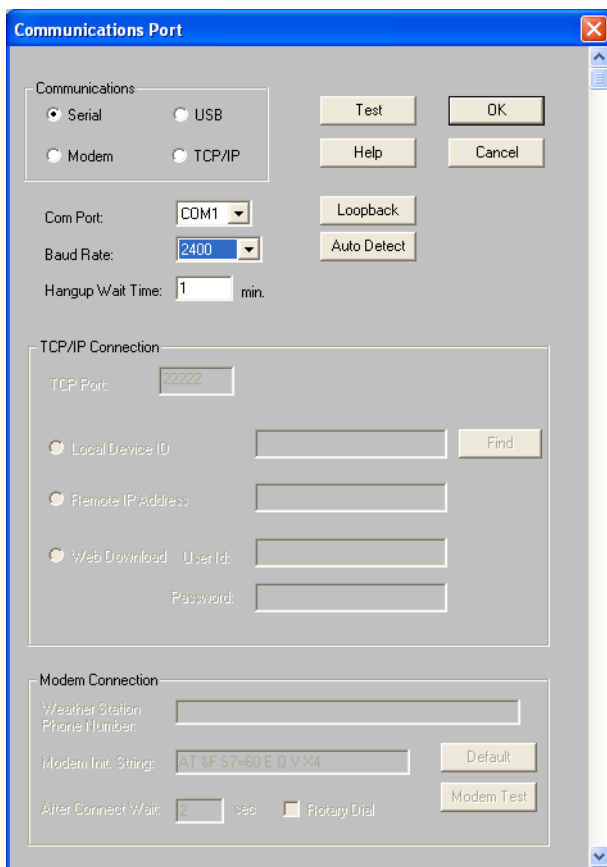
Note: Please refer to the WeatherLink Online Help for more information about the complete Walkthrough process.

Communication Port Settings

WeatherLink contains a dialog box for configuring the communication settings for your serial or modem configuration. Use the **Communications Port** dialog box to select the communications type and to test communication between the computer and the station.

1. Select **Communications Port** from the **Setup** menu or use the Walkthrough to display the dialog box.

The **Communications Port** dialog box displays.



2. Select **Serial** from the communications field.
3. Select the rate at which weather station connects to the computer from the **Baud Rate** drop-down list box. Select from either the 1200 or 2400 Baud Rate.
4. Select the communications port that connects the data logger to the computer from the **Com Port** drop-down list box or click **Auto-Detect** to find and select the correct COM port being used for your serial port connection.
5. Click **Test** to verify communication.
6. Click **OK** to save the **Communications Port** settings.

You can also use the **Loopback** button (as opposed to the **Test** button) in the **Communications Port** dialog box to test and find the correct serial port connection. If a communications problem exists, it determines whether the serial port or the data logger is not communicating properly. The loopback function also detects and reports the presence of any modems.

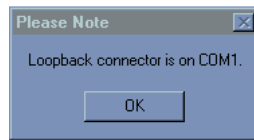
Use the loopback connector (the short cable with a phone jack on one end and a red plastic tip on the other) supplied with a WeatherLink serial port connection package.



Loopback connector

1. If necessary, disconnect the cable between your console and the adapter connected to the COM port.
2. Insert the loopback connector into the adapter.
3. Select **Communications Port** from the **Setup** menu. The **Communications Port** dialog box displays.
4. Click **Loopback**.

The software searches all standard ports and displays the COM port number where the loopback connector is located.



The correct COM port is automatically selected in the **Communications Port** dialog box. If the loopback connector is not found on any COM port, your serial port may not be working. See “Communications Problems” on page 14 for more information.

Updating Previous Versions

Starting with Version 5.4, WeatherLink stores additional sensor data in the weather database. Data files from earlier releases do not contain the additional data and should be converted before use by the latest version of WeatherLink. The following procedure explains how to convert older WeatherLink data files for use with WeatherLink 5.4 and later versions.

Database Conversion

If you have an existing weather database from WeatherLink 3 or 4 or earlier, there are two ways to convert those files for use with versions of WeatherLink 5.4 or later.

Convert a WeatherLink Station (for 5.4 or later)

This method converts all the data files in an existing WeatherLink station directory and retains the previously entered station configuration data.

1. Install the new version of WeatherLink in a new program folder.
2. Copy the station folder from the previous WeatherLink program folder to a WeatherLink 5.4 or later program folder.
3. Use the Open Station command in the **File** Menu to open the copied station folder. WeatherLink automatically detects that the station was created by a previous version of the software and asks to convert the data and station.
4. Click **OK** to convert the station configuration, including weather database files. WeatherLink automatically creates a backup copy of the old files and then converts them for use by versions of WeatherLink 5.4 or later.

Import Database Files

The Import Database Files menu option allows you to select individual files or groups of files to be converted for use by WeatherLink 5.4 or later.

Note: WeatherLink does not import database files created by versions of WeatherLink 5.4 or later using the Import Database File option. The Import Database Files option imports only database files created by WeatherLink versions 3 or 4 or earlier.

1. Open WeatherLink 5.4 or later and select **Import Database Files** from the **File** menu. The **Browse** dialog box displays.
2. Select the data files you want to import. Select one file or multiple files in the same folder.
3. Click **Open** to convert the selected files. These files are put into a subdirectory called “Converted Database Files”.
4. Copy the converted files to your station directory.
5. Reopen the station in WeatherLink to view the converted files.

Troubleshooting Guide

The following section answers some of the most commonly asked questions about WeatherLink. Please consult this guide and WeatherLink Online Help before contacting Technical Support (see page 17).

Communications Problems

? *Why can't the WeatherLink software communicate with the data logger and station?*

If you are having trouble establishing communication between the weather station and WeatherLink, start by checking the weather station's own diagnostics. Remove all power to the weather station and then restart it by restoring power with the power adapter (with the data logger still attached). Leave the battery backup unplugged.

- You should hear three beeps, each of which occurs when the weather station passes one of its diagnostic tests. Each beep follows the previous after about one second. The first beep tells you the processor is running. The second beep will be for the display and the third beep for the data logger (if installed). If you do not hear one or more of these beeps, contact Davis Instruments. (You'll only hear two beeps if you don't have the data logger installed.) After hearing three beeps, plug in the backup battery.
- If you hear all three beeps, See "Communication Port Settings" on page 10 for instructions on checking your standard serial ports. If this identifies a serial port other than the one you selected in station setup, try connecting to the data logger again.
- Make sure you are using the black serial port adapter supplied with WeatherLink # 7862.
- Check the switch setting on the data logger. It will be set to either 1200 or 2400 Baud.

If you still cannot connect or if the loopback test identifies the serial port you already have selected, eliminate the following possibilities.

- You have a hardware device conflict.
Check the device manager tab in the Windows® system properties dialog box to ensure that Windows recognizes your COM port. Consult your computer's documentation to see how to access the system properties dialog box.
- Your serial port uses a non-standard device name.
- WeatherLink recognizes serial ports named COM1 through COM18 only.
- Your serial port is defective.
- The loopback connector or the WeatherLink adapter plug is bad.

If you have questions on how to proceed, contact your PC vendor or PC technical support.

Program Problems

? *The barometer graph on the Bulletin does not “fill in” completely.*

When you first load the bulletin, the barometer graph will only fill in completely when you have data in your database for the last six hours. Make sure of the following:

- There is data in your database for the span of the barometer graph.
- The time and date of the stored barometer data is correct in your database.
- The time and date on the PC is correct.
- The time and date on the weather station are correct.

? *No wind direction reading (or dashes instead of a reading) appears in my database.*

Be aware that if there is no wind speed when the direction is being sampled, wind direction is not recorded. During intervals with no wind speed, no direction will be recorded.

Note: Since high wind speed is sampled more often, it is possible to have a high wind speed but no wind speed.

? *My archive memory is empty and I know it should not be. What can I do?*

First try using the **Set Archive Interval** command in the **Setup** menu to clear the archive memory and see if this corrects the problem. You will lose any undownloaded data in your archive memory, but all your calibration numbers and alarm settings will remain intact. If this doesn't work, restart your weather station by removing the AC power adapter and the backup battery and then reconnecting them. All data which has not been downloaded will be lost. You will also have to reset all console settings such as the barometer, calibration numbers, and alarm settings.

? *After successfully downloading, the data does not appear in my database. Where is it?*

The most likely possibility in this case is that the time and date on your weather station are incorrect. This usually happens if there is a power outage and you don't reset the time and date afterwards. In this case the data was written into the wrong time and month. Correctly set the time and date on your weather station and all future data should download correctly.

It is also possible, if you have multiple stations, that you downloaded data into the wrong station's database. Make sure the desired station is open before downloading.

? *When viewing data, dashes appear in place of a value for functions other than wind direction. Why?*

If no data was recorded by a sensor (for example, the sensor was disconnected or radio interference blocked reception) or if bad data was recorded for a sensor (for example, the sensor was malfunctioning), the software dashes out the entry rather than showing invalid data. You can use the record editor to correct these entries.

? *The data I want to see, such as humidity (Monitor) is missing completely or is grayed-out. Why?*

All optional sensors must be enabled in the **Station Configuration Setup** dialog box before the data will be displayed in WeatherLink. If you are not seeing data from a sensor that is installed in your weather station, be sure check the **Station Configuration** in the **Setup** Menu and make sure the sensor has been selected.

Contacting Davis Technical Support

If you have questions about the software, or encounter problems installing or using the software, please contact Davis Technical Support. Most questions can be answered on the phone.

Note: Sorry, we are unable to accept collect calls.

Phone Support:

(510) 732-7814 – Monday – Friday, 7:00 a.m. – 5:30 p.m. Pacific Time.

(510) 670-0589 – Technical Support Fax

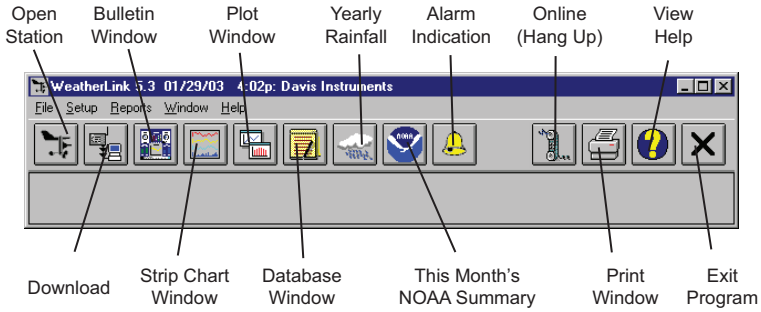
E-mail Support:

support@davisnet.com – Technical Support e-mail.

info@davisnet.com – General e-mail.

www.davisnet.com – Davis Instruments' website. Includes Weather support information.

Tool bar Icons



Hot Keys

Main Program Window

- Ctrl-A** Set Alarms
- Ctrl-B** View Bulletin
- Ctrl-C** Station Configuration
- Ctrl-G** Degree-Days Report
- Ctrl-H** Hang Up
- Ctrl-I** Communications Port Settings
- Ctrl-J** Automatic Download
- Ctrl-K** Walkthrough
- Ctrl-L** Download
- Ctrl-O** Open Station
- Ctrl-P** Print Active Window
- Ctrl-Q** Open Plot Window
- Ctrl-R** Yearly Rain Report
- Ctrl-S** Open Strip Charts
- Ctrl-T** Set Time
- Ctrl-U** Select Units
- Ctrl-V** View Download Log
- Ctrl-W** Browse Database
- Ctrl-X** Auto Fax Settings
- Ctrl-Y** View Summary
- Ctrl-Z** Close Window
- F1** Context-Sensitive Help
- F2** Sunrise/Sunset Report
- F7** NOAA This Month
- F8** NOAA This Year

Strip Chart Window

- ESC** Halt Redraw
- Ctrl-M** Make Default
- Ctrl-P** Print Strip Chart
- F1** Context-Sensitive Help
- F3** Zoom In
- F4** Zoom Out

Plot Window

- ESC** Halt Redraw
- Ctrl-D** Choose Date
- Ctrl-M** Make Default
- Ctrl-P** Print Plot
- F1** Context-Sensitive Help
- F3** Zoom In
- F4** Zoom Out
- F9** Overlay Plots
- F10** Last Year Plot

Database Window

- Ctrl-D** Choose Date
- Ctrl-N** Add Note
- Ctrl-P** Print Records
- Enter** Edit Record
- Delete** Delete Record
- F1** Context-Sensitive Help

Yearly Rainfall Window

- Enter** Edit Year
- Delete** Delete Year