WeatherLink® for Mac®

Getting Started Guide

For Weather Monitor II, Weather Wizard III, and Perception II Weather Stations
Product #7855

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Welcome to WeatherLink!

Welcome to Davis Instruments' WeatherLink for Weather Wizard III, Monitor II, and Perception II for Macintosh OS X (# 7855). The Weatherlink software and data logger allow you to connect your Apple Macintosh computer running OS X to a Davis weather station so you can store, view, plot, analyze, export, print, and put on the Internet the weather data collected by your station.

Contents of Package

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

- Data Logger for the original Davis Weather Stations: Wizard III, Monitor II, and Perception II. Includes 8' (2.4 m) cable to link your station to your computer.
- 9-pin DIN connector
- WeatherLink software CD ROM

DIN Connector

Original Weather Station Data Logger
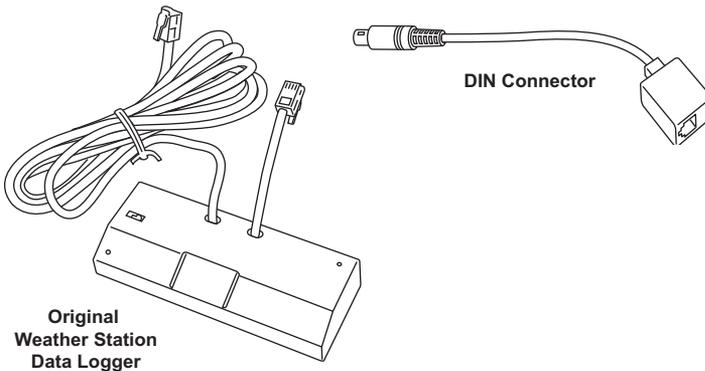
Required Accessories

You will need to install a third-party serial port adapter on your Macintosh computer in order to run WeatherLink for Mac OS X. The Keyspan USB Twin Serial adapter has been tested with WeatherLink, but other serial adapters should also work:

- USB-to-serial port adapter

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** — Connects the data logger to a modem. Use the adapter # 7870 with Wizard III, Monitor II, and Perception II stations.

- **Standard 4-Conductor Extension Cable** — Use one 40' (12 m) extension cable (#7876-040) to extend the distance between your station and the computer. (48' (14.4 m) maximum)

Hardware Installation

You can connect a computer directly to your weather station using the WeatherLink data logger (local connection), or you can connect a computer to a remote weather station using a phone modem (remote connection). Requirements and installation for each type of connection differ, and are explained separately below.

Hardware Requirements

The hardware requirements for local and remote connections are listed below.

Local Connection Hardware Requirements

In addition to the provided hardware, the following are required for a direct connection.

- Macintosh computer running OS X v10.01 or newer with at least 5 MB of free disk space

  The amount of space necessary for the data files depends on the archive interval. Database files containing data stored at a 30 minute archive interval require approximately 36K 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 1 MB/month while the data stored at a 2–hour interval requires approximately 9K/month.

- A serial port adapter connected to a Macintosh USB port.

Remote Connection Hardware Requirements

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

- One external modem to connect to the data logger at the remote site.
- One internal or external modem connected to your Macintosh computer
- Modems must be Hayes®–compatible and able to send data at 1200 or 2400 baud for use with a Monitor II, Wizard II, or Perception II weather station.
- **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 with Wizard III, Monitor II, and Perception stations.

Connecting the Weather Station

The instructions below explain how to connect your Weather Monitor II, Weather Wizard III, or Perception II weather station directly to your computer. Note that if you extend the cable run beyond 48' (14.4 m), the software may have difficulty communicating with the station.

Local Connection
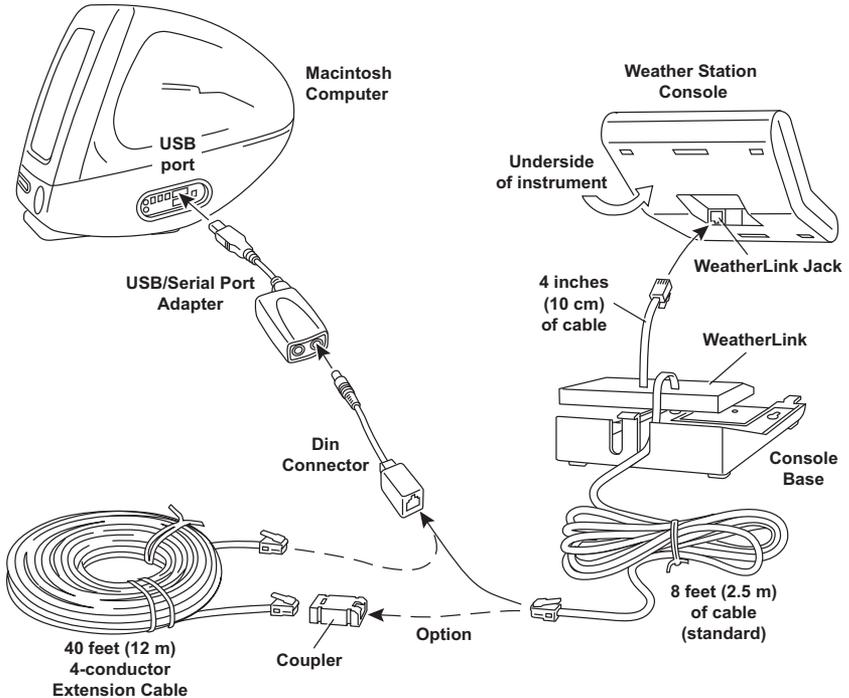
Typical Local Connection for Original Weather Stations

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 re-enter these values, as well as the time and date, 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 "Weather-Link" on the bottom of your weather station console.

6. Restore power to the console by reattaching the power adapter.

   The console should beep three times. The third beep, which should occur within 30 seconds, indicates that the data logger is operating correctly.

7. After hearing the three beeps, replace the battery backup.

8. Place the data logger inside the mounting base.

9. Reattach the mounting base to the weather station.

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

10. Connect the serial port adapter to a USB port on your Macintosh computer and install it according to the manufacture's instructions.

Note: You must install the serial port adapter before you connect the data logger to the adapter.

11. Connect the 9-pin DIN connector to the serial port adapter.

12. Connect the long data logger cable to the DIN 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 a 40' (12 m) standard 4-conductor extension cable. Do not attempt to use more than 40' of extension cable, or the data logger may have difficulty communicating with the computer.

Remote Modem Connection

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 Weather-Link data logger, which will cause these values to be erased. Use Weather-Link to re-enter these values, as well as the time and date, 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.

Note: Failure to remove power before installing the data logger may cause damage to the data logger and/or station.
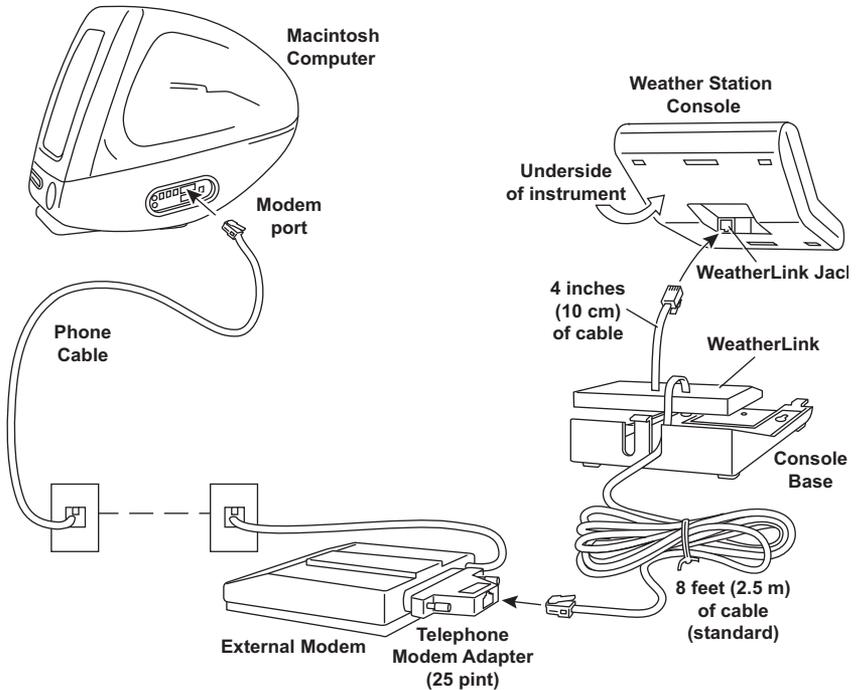
Typical Remote Installation for Original Weather Stations

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 "Weather-Link" on the bottom of your weather station console.

7. Connect the 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.

Note: It is very important to follow the order of these instructions. The modem must be connected and turned on before you apply power to the weather station console.

10. Restore power to the weather station console by reattaching the power adapter.

    The weather station should beep three times. The third beep, which should occur within 30 seconds, indicates that the WeatherLink is operating correctly.

11. After you hear the three beeps, re-attach the battery backup.

12. Place the data logger inside the mounting base.

13. Re-attach the mounting base to the weather station.

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

About Phone Modem Connections

If you indicate a phone modem connection when setting up your station, the software automatically dials the station whenever you initiate a program action that requires the software to talk to the station.

While connected to a phone modem station, an "On-Line" icon appears in the toolbar. This icon indicates that you are on-line and may be used to hang up a remote connection. To hang up, choose the On-Line icon from the toolbar or choose **Hang Up** from the **File** menu.
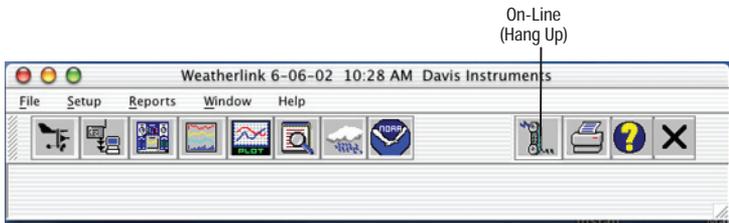
Toolbar with On-Line Icon

By default, WeatherLink will hang up the connection to the modem after one minute without any communication with the station. Use the Serial Port dialog box in the Setup menu of WeatherLink to change this default value. (See the WeatherLink help files for more on this subject.)

Note: WeatherLink will not hang up the phone line if the Bulletin or Summary windows are active.

Software Installation and Setup

This chapter covers software installation and setup.

Installing the Software

1. Place the Install Disk in your CD ROM drive.
2. Copy "install.sit" from the CD to your desktop and open it. The installation software will automatically extract itself.
3. Run "install".
4. Follow the on-screen prompts to complete the installation.

Running the Software

To run the software, double-click on the WeatherLink icon. If you have no stations in the program directory when you run the software, the software will prompt you to add a station (see below for details). If you have more than one station in the program directory when you run the software, the software will prompt you to indicate which station you'd like to open.

Station Setup

To interact with your station, you must add your station to WeatherLink's database, which means naming the station, configuring the software to work with that station and with your computer hardware, and setting station values such as time, barometric pressure, total rainfall, and calibration numbers.

Adding a Station

1. Choose **New Station** from the **File** menu.

    The software opens the **Add New Station** dialog box.

2. Type the station name into the text box.

    The station name may be up to 40 characters/spaces long. Note that the software uses the first eight characters of the station name (not counting spaces or punctuation marks) as the name of the directory into which it saves this station's database and configuration files. The first eight characters of each station name must, therefore, be unique. The software also uses the first three characters as the file extension for that station's database files (the first three characters need not be unique).

3. Click **OK**.

    The software saves the station, creates a directory and subdirectories for that station, and prompts you to indicate whether you want to enter the walkthrough procedure.

About the Walkthrough

Weatherlink includes a Walkthrough option that steps you through the station configuration procedure. After adding a new station, the software automatically asks if you want to use Walkthrough to set up your station. You can, of course, choose "No" and set up the station by choosing all of the necessary commands from the menus. A Walkthrough command is included in the **Setup** menu that lets you begin this set of procedures at any time.

Note: Where necessary, the software will automatically dial a phone modem station.

If you select **Yes** to begin the walkthrough, the software takes you through the following dialog boxes:

- **Station Configuration** — Set station name, model, accessories, download options, and data file extension.
- **Choose Units** — Select units of measure in which station information is displayed.
- **Serial Port Settings —** Set COM port to which data logger is connected. The COM port is created by the software included with your USB/serial port adapter. Specify modem connection settings such as baud rate, phone number, and modem initialization string.
- **Set Rain Calibration** — Set the station's rainfall calibration number.
- **Enter Year-to-Date Rainfall** — Set the rainfall amount on the station and on the software. You must enter this information from the software if you want you station and software readings to agree.
- **Set Time and Date —**Set the time and date on the station, software, and computer and make sure all three are synchronized.

Note: When you set the time and date, you will be prompted to clear your archive memory. If you do not clear archive memory, you may end up with data stored at an incorrect time or duplicate records. We recommend that you download before setting the time (unless you are creating a brand new station) so you may safely clear the archive memory.

- **Set Archive Interval** — Set the interval at which data will be stored in the data logger's memory. This will clear any data stored in the data logger.
- **Set Station Alarms** — Set alarm thresholds on the station.
- Set Auto Download Time(s) — Specify the stations and the times at which you want data automatically downloaded to your computer each day.

    At each step in the walkthrough procedure, the software will provide confirmation boxes prompting you to indicate whether or not you wish to continue. To continue, click **OK**. To skip any step and move to the next, click **Skip**. To cancel the entire walkthrough procedure, click **Cancel**.

Troubleshooting Guide

The following section answers some of the most commonly asked questions about WeatherLink.® Please consult this guide and the on-line help files before contacting Technical Support (see page 13).

Communications Problems

? *Why can't the 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 data logger still attached).

• You should hear three beeps, each of which occurs when the weather station passes one of its diagnostic tests.

The first beep will occur immediately after power is restored; the second beep will occur approximately 10 seconds later; the third beep will occur approximately 20 seconds after the second beep. The first beep tells you the processor is running. The second beep will be for the data logger (if installed), and the third beep is for the display. If you do not hear one or more of these beeps, contact Technical Support (see "Contacting Davis Technical Support" on page 13). (You'll only hear two beeps if you don't have the data logger installed.)

• If you hear all three beeps, See "Checking the Communications Port" on page 10 for instructions on checking your serial port. Also check your USB/serial port adapter to make sure it is correctly installed and operating properly.

• Make sure you are using the DIN cable connector supplied with WeatherLink for Mac OS X. Other adapters may not work.

• Check the Baud Rate setting on the data logger and in the Communications Configuration dialog box in the software. Make sure they're set to the same rate. Check the switch setting on the data logger. It will be set to either 1200 or 2400 Baud.

If you still cannot connect, check the following two potential problems. If you have questions on how to proceed, contact the vendor or Davis Technical Support for your computer (see "Contacting Davis Technical Support" on page 13).

  • Your serial port uses a non-standard device name.
  • Your serial port adapter is defective.

Checking the Communications Port

The WeatherLink software includes a procedure for testing the communications port to which your station is connected. Using the Test command will help you determine whether the communications port or the data logger is causing a communication problem.

1. Select **Communications Configuration** from the **Setup** menu.

    The **Communications Configuration** window displays.
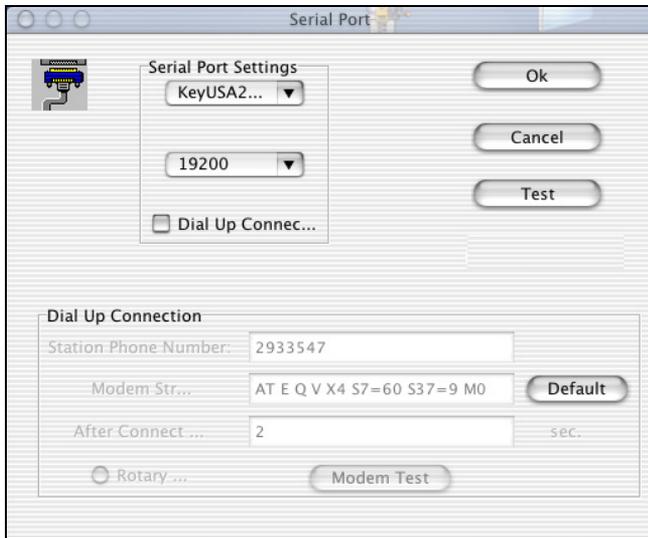
2. In the upper drop-down list of the **Port** section of the window, select the port you want to test.

    If you are using a Keyspan USB Twin Serial adapter, or a similar USB-to-serial port adapter between your weather station and your Macintosh, the port shown in the pull-down list will be similar to "KeyUSA28X181P2.2."

3. Click **Test**.

    The software searches all standard USB ports and should display a **Please Note** window stating the COM port at which the USB connector is located.

4. If WeatherLink cannot find the USB connector at any COM port, an error message displays, stating "No station could be found."

    If this message displays, contact Davis Technical Support. See "Contacting Davis Technical Support" on page 13 for more information.

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.

? *I have duplicate records in my database. Why?*

If you do not download from the data logger prior to changing the weather station's time and date (for a Daylight Savings time change, for example), you may get duplicate records. Make sure to download before setting time and date. In addition, you should be aware that the midnight records are duplicated so they appear in each consecutive day. For example, a midnight record would appear at the end of the data for November 22 and at the start of the data for November 23. Using the record editor to change the record in one day ***does not*** change the record in the other day.

Note: Do not delete the duplicate midnight records; it may affect your rain database or NOAA monthly summary.

? *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 very little wind speed, no direction may be recorded.

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

? *WeatherLink says "No new data to download" but I know there's data there. What can I do?*

The Weather Station is smart enough to send only data it hasn't already sent to the computer. So, when you initiate a new download, the program will retrieve the first record after the last record shown in the WeatherLink's Browse Window. Older data is stored in the logger as a backup. To see how many of these backup records are stored in the logger, create a new station and download the data into this new database. Because there are no records stored in the station you just created, WeatherLink will download everything it has stored.

Next, try clearing the archive memory using the clear dialog box. You will lose any data not already downloaded in your archive memory, but all of your calibration numbers and alarm settings will remain intact. If this doesn't work, reboot your weather station (that is, remove, then restore all power to the station).

? *After successfully downloading, recent or new data does not appear to be in my database. Where is it?*

Check to see if the time and date on your station are incorrect. (This can happen if you have a power outage and your battery backup is dead.) If so, the data was written into the wrong month, day, and/or time. Reset the time and date.

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

Your data logger may be not be operating properly. If this is the case, you can restore proper operation by repowering the data logger:

1. Remove power from the data logger by removing power from the weather station console.
2. Remove or disconnect the data logger from the console.
3. Wait at least one minute.
4. Connect the data logger to the weather station console.
5. Apply power to the console.
6. If you can now download and see the data in WeatherLink you have fixed the problem. If not, please contact Technical Support for assistance.

? *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.

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.

Toolbar Icons

Open Station · Bulletin Window · Plot Window · Yearly Rainfall · On-Line (Hang Up) · View Help

Download · Strip Chart Window · Database Window · This MonthÕs NOAA Summary · Print Window · Exit Program
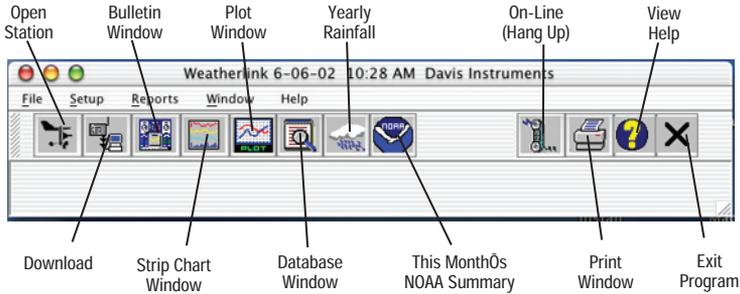
Hot Keys

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 . . . . . .Serial 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