

**TEXAS WEATHER INSTRUMENTS INC.****Manufacturer of Digital Weather Stations**

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1-Wire Weather Station

Thank you for purchasing the 1-Wire Weather Station. You will need at minimum one 1-Wire Weather Sensor, a HA3 or HA4 Host adapter, and the OneSix server software. Most packages will include multiple 1-Wire Weather Sensors, an intermediate cable; a mast mounted junction box and Weather View 32 Software. This documentation will assume that you have purchased the complete package.

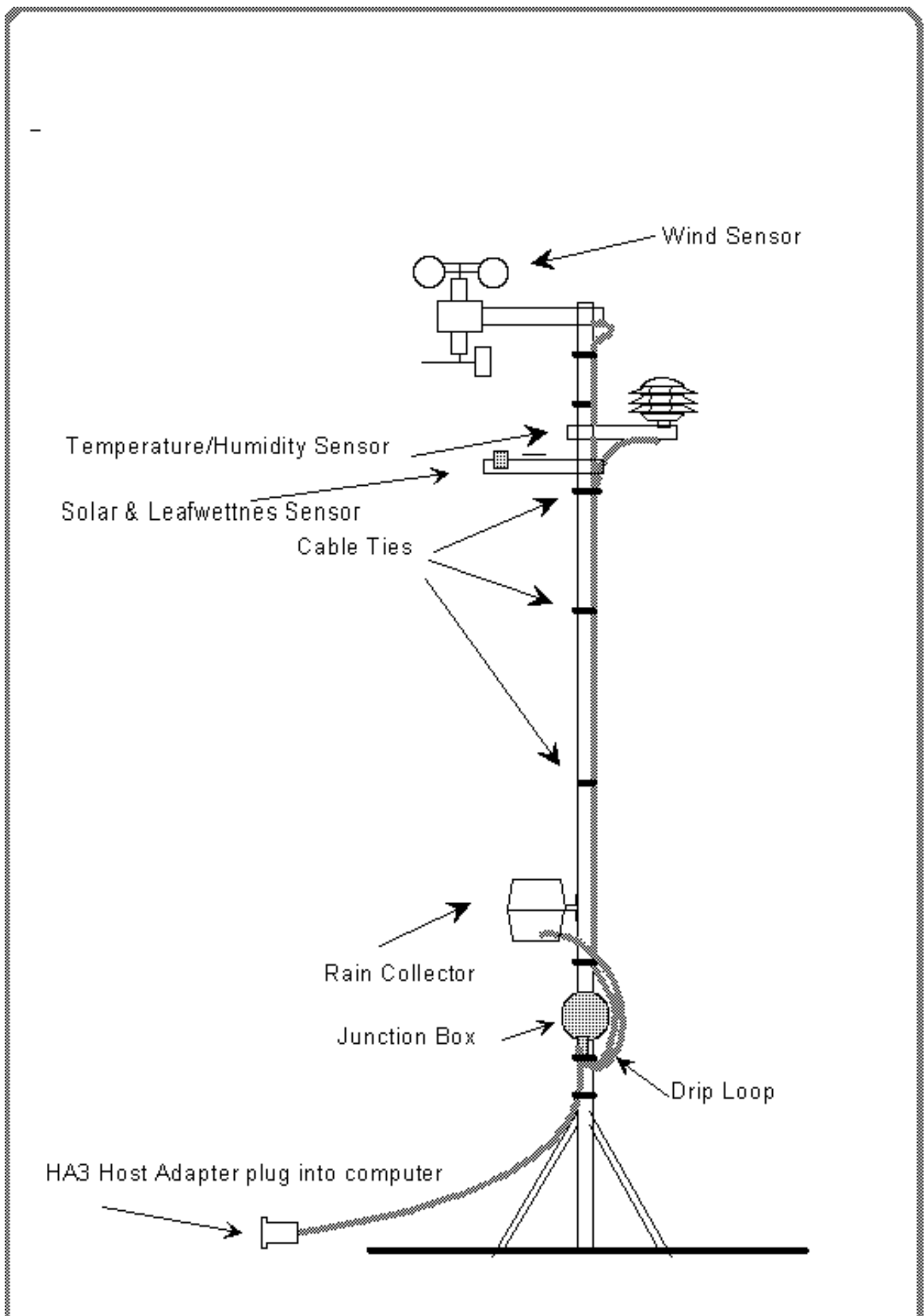
The 1-Wire Weather Station™ has several unique qualities because it utilizes the Dallas Semiconductor 1-Wire Microlan™. The 1-wire system does not require external power supplies, all power is supplied by the PC RS-232 Port. All 1-Wire Weather Sensors are intelligent digital devices that have calibration information, unique serial numbers and sensor type information stored in the memory of each sensor. Up to 100 sensors (depending on the type sensor and length of the cable) can be attached anywhere into the 1-Wire Microlan (a twisted pair cable).

Data is made available via a DDE link. Any Windows® application that can use DDE can obtain this data from the OneSix™ Server. Examples of such applications include Weather View 32, Microsoft® Office products like Word® & Excel®, Wonderware® Intouch, National Instruments® LabView® & LookOut®, Capital Equipment Corp.® TestPoint, general development applications like Microsoft® Visual Basic and Borland® Delphi. This system allows you to run several software packages at the same time, all reading from one set of weather sensors.

HARDWARE INSTALLATION

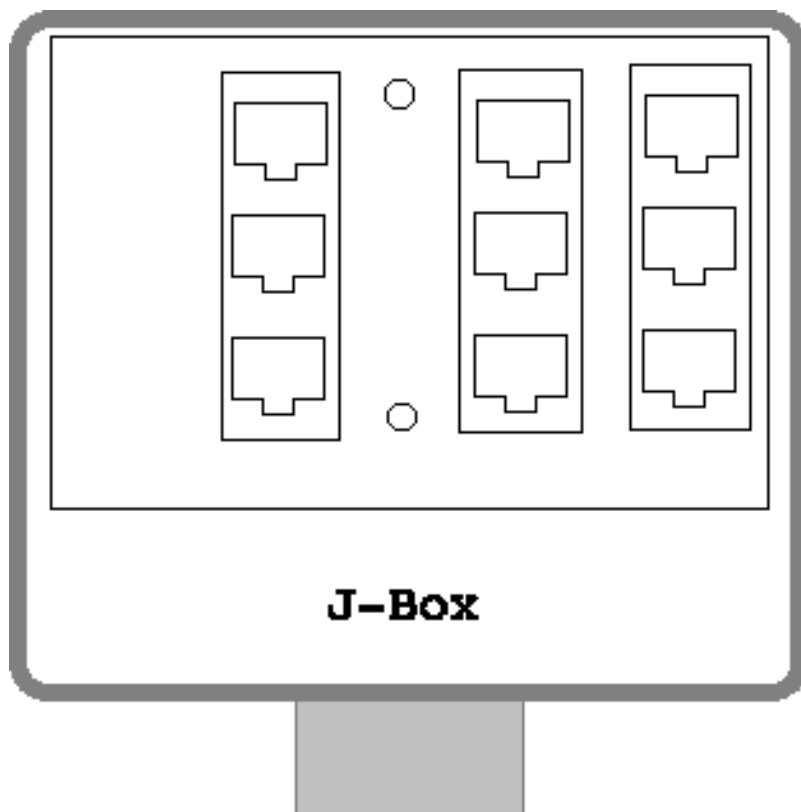
We strongly suggest that all the 1-Wire Weather Station Sensors, intermediate cable, junction box and host adapter be connected to your PC, and that your software be installed on your computer and tested prior to the installation of your sensors on the roof, so that you may become familiar with the operation of this equipment.

The 1-Wire Weather Station uses multiple sensors to gather weather data. The wind direction and speed sensor, the temperature/humidity pagoda, the solar radiation/leafwettnes sensor, lightning sensor and the rain collector are designed to mount to a television type mast (not provided). The barometric pressure sensor is designed to be inside; plugged into the host adapter. Also plugged into the host adapter will be with the red intermediate cable that goes to the roof sensors. (Note: the pressure sensor must be plugged into the host adapter with the TWI dropping adapter in line or the pressure sensor will not work.)



C A U T I O N !! :BE EXTREMELY CAREFUL NOT TO TOUCH ANY HIGH POWER LINES DURING INSTALLATION OF THE VARIOUS SENSORS!!!

The wind direction and speed sensor is normally mounted on television type antenna masts. For best results the wind



sensor should be mounted twenty feet above the roof of the building. The higher the installation, the more accurate the readings. The wind direction sensor is calibrated at the factory and should be installed with the wind sensor arm pointed to the North. If you are unable to point the wind sensor arm to the North you can change the wind direction offset in the OneSix server INI file. Plug the wind sensor RJ11 connector into the mast mounted junction box (if present).

The TWI Lightning Sensor must be mounted at the top of a grounded mast. The taller the mast and the better the earth grounding the further away lightning can be detected. A detection range of over 200 miles can be achieved depending on the installation.

Mount the Lighting Sensor one inch below and 180 degrees away from the wind sensor (refer to figure A) in order to gain the maximum distance between the two sensors. The top of the Lightning sensor must not be below any part of the grounded mast, doing so will shield the sensor from detecting lightning from that direction

The outside temperature/humidity pagoda should be mounted about two feet under the wind sensor. Again we suggest a twenty-foot mast for commercial installations to overcome the artificially high readings generated by a hot roof. Plug the temperature/humidity pagoda cable into RJ11 connector in the junction box.

The solar/leafwettness sensor must be pointed South and must be free of shadows created by the other sensors (near the top of the mast is normally the best). Take care that the sensor is perfectly level. Run the solar sensor cable to the junction box and plug it in to RJ11 connector.

The rain collector is normally mounted on the mast. It should be mounted as low as possible to reduce windage and to limit movement of the mast, which can cause false readings. The collector should be mounted in a manner that allows rain to enter the collector unencumbered by surrounding obstacles. Use a bubble level to make sure that the collector is perfectly level with the ground. Failure to level the collector will cause inaccurate rainfall readings. The rain collector has one cable that must be connected to the junction box.

Mount the junction box under the rain collector using the hose clamps that are installed on the box (see figure 1). Remove the front cover of the junction box, inserting the connectors from the sensors and intermediated cable through the hole in the bottom of the junction box and then out of the front of the box. Plug all the sensor connectors in the junction box being careful not to plug the sensor cables into the larger red color coded RJ-45 intermediate connectors

The intermediate cable (red) should be plugged in to one of the junction box RJ-45 intermediate connectors (color coded red), then run into the building where the PC is located. Pull the excess cable out of the j-box. Carefully seal the bottom hole in the box from the inside by using the plumber's putty provided to keep bugs out. Be sure and replace the rubber gasket on the junction box so that it can remain watertight. If you do not properly put the j-box cover and seal on, the j-box will leak water and the system will fail. It is a good idea to avoid running the intermediate cable close to noisy devices such as florescent lights and electric motors. Plug the red intermediate cable RJ-45 connector into the host adapter (HA3 or HA4) and then attach the host adapter to serial port on the PC. If you have a barometric pressure sensor, plug it also in to the host adapter making sure that the TWI dropping adapter is in line. Your hardware is now installed, go to software installation.

SOFTWARE INSTALLATION

We strongly suggest that all the 1-Wire Weather Station Sensors, intermediate cable, junction box and host adapter be connected to your PC, and that your software be installed on your computer and tested prior to the installation of your sensors on the roof, so that you may become familiar with the operation of this equipment.

OneSix Server

Find the diskette that is labeled OneSix Server. The OneSix Server is also available via the internet at www.pointsix.com. Plug all of your hardware in to your computer (through the J-box if supplied) then install the OneSix server software. The default folder for the OneSix server is **c:\onesix** (if you put OneSix server into any other folder, Weather View will not be able to find the server). Click onto the OneSix server icon and load. OneSix Server will search the 1-Wire Microlan for sensors and then write to the Onesix.ini file recording your configuration.

To make a DDE link into another program such as Word 97, click on the OneSix DDE Server button. Then click on DDE Variables in the OneSix Server. Highlight the sensor description that you

desire and click copy link. Switch to Windows 97, go to edit, then paste special and click on to paste link. Your data for that sensor should now be in your Word document.

For more information on the OneSix server go to the OneSix manual. Assuming that the OneSix Server has been installed on your hard drive, use Windows Explorer to go to the onesix folder and click on to Onesix32.pdf or click on the OneSix Server icon in your startup menu.

Weather View 32

Make sure that you have already installed the OneSix server program on you computer, then using the Weather View 32 CD, install Weather View 32. The OneSix server is a program that runs the 1-Wire Microlan and provides data to the Weather View 32 program via a DDE link. Weather View will automatically load the OneSix Server software.

The only sensor that must be calibrated is barometric pressure. Obtain the correct local pressure from a reliable source such as a weather radio or TV Station, go into the setup menu, then weather station properties and change the offset. For more information on Weather View 32, refer to the Weather View 32 manual.

CONNECTOR PINOUTS

Screw Connector PIN	SIGNAL/SYMBOL	DESCRIPTION
1	PGND "G"	Power Ground
2	1-Wire Ground Pin "C"	Microlan™ Ground
3	1-Wire Input/Output Pin "S"	Microlan™ network I/O
4	PWR "+"	Power + (unreg) 5-16 V DC

RJ-11 PINOUT

RJ11 PIN	SIGNAL	DESCRIPTION
1	No connection	No connection
2	PGND	Power Ground
3	1-Wire Input/Output Pin	Microlan™ Network I/O
4	1-Wire Ground Pin	Microlan™ Ground
5	No connection	No connection
6	PWR	Power + (unreg) 5-16 V DC

FCC RADIO FREQUENCY INTERFERENCE STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, Subpart B, of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, may cause interference to radio communications.

The limits are designed to provide reasonable protection against such interference in a residential situation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the affected radio or television
- Increase the separation between the equipment and the affected receiver.
- Connect the equipment and the affected receiver to power outlets on separate circuits.
- Consult the dealer or an experienced radio/TV technician for help.

MODIFICATIONS

Changes or modifications not expressly approved by Texas Weather Instruments, Inc. could void the user's authority to operate the equipment.

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