



# TP1080WC

*Professional Wireless Data  
Logging Weather Station*

- Weather Tracking and Forecasting
- Wind Turbine Site Survey
- Remote Temp/Humidity monitoring
- Wind Chill, Dew point and Storm warning



***Congratulations!*** on your purchase of the ProWeather-Station™, one of the finest professional weather stations available.

Please take a moment to review this Qwik Install Guide before



## **DANGER! Avoid Powerlines! You Can Be Killed!**

When following the instructions in this guide to install the ProWeatherStation™ take extreme care to avoid contact with overhead power lines, lights and power circuits. Contact with power lines, lights or power circuits may be fatal. We recommend to install ProWeather-Station™ no closer than 20 feet to any power lines.

**Safety:** For your own protection, follow these safety rules.

- **Perform as many functions as possible on the ground**
- **Do not attempt to install the ProWeatherStation™ on a rainy, windy or snowy day or if there is ice or snow accumulation at the install site or if the site is wet.**
- **Make sure there are no people, pets, etc. below when you are working on a roof or ladder.**



**Recommended Tools:** Pliers, Phillips Screwdriver, Flat Blade Screwdriver

## Qwik Install

**STEP 1:** Assemble the 2 halves of metal mast together

**STEP 2:** Insert top support arm in the top of the metal mast. Align slot in the mast with tab on support arm. Insert small bolt with nut thru the lower hole. Tighten nut. Insert self tapping screw thru upper hole and tighten.

**STEP 3:** Install the 2 identical support arms to the metal mast with square end pointing up by loosening the bolts a little then sliding the arm clamp onto the mast from the bottom.

**STEP 4:** Position the bottom arm so it is straddling the joint in the metal mast. This will keep the top part of the metal mast from rotating in a strong wind. Rotate the bottom arm so it is perpendicular to the top support arm and then tighten the 4 bolts/nuts.

**STEP 5:** Position the middle arm so it is about halfway between the bottom arm and the top arm and rotate it so it is perpendicular to the top arm and pointing opposite the bottom arm. Tighten the 4 bolts/nuts.

**STEP 6:** Install the anemometer (wind speed gauge) to the end of the top support arm. Insert a small bolt into the mounting hole, attach the nut and tighten.

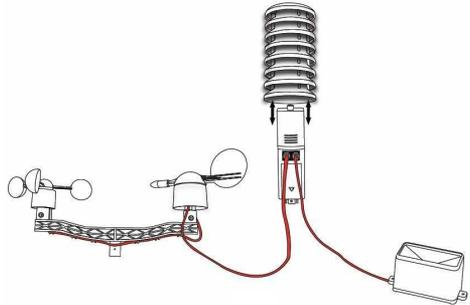
**STEP 7:** Install the wind direction sensor to the other end of the top support arm. Insert a small bolt into the mounting hole, attach the nut and tighten. **NOTE:** In a later step you will need to rotate the entire assembly to align the wind direction sensor towards North. The head of the screw that attaches the sensor to the top support arm indicates the North direction.

**STEP 8:** Install the rectangular rain gauge to the middle arm and insert a self tapping screw through the bottom of the arm. Tighten screw.

**STEP 9:** Remove the cover from the temperature/humidity sensor by pulling the inside sensor completely out of the cover. Remove the battery cover and install 2 AA LR6 Alkaline batteries. Replace the battery cover. Install the sensor to the bottom arm with the connectors and battery cover facing towards the metal mast. Insert small bolt/nut and tighten.



**STEP 10:** Plug the cable from the anemometer (wind speed gauge) into the connector on the wind direction sensor. Plug the cable from the wind direction sensor into the Temp/Humidity sensor connector marked "WIND". Plug the cable from the rain gauge into the Temp/Humidity sensor connector marked "RAIN"



**STEP 11:** Install the Temp/Humidity sensor cover by sliding it down over the sensor.

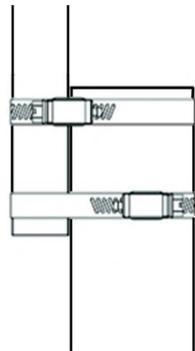
**NOTE:** *The outside temp reading is affected by direct solar radiation. If you find display temperature is too high when sun is shining on the Temp/Humidity sensor, you might consider moving the Temp/Humidity sensor to a shaded area or providing local shading for the sensors. One idea would be to move the Temp/Humidity sensor directly underneath the rain gauge and then adding a plastic or metal sheet under the rain gauge to create an umbrella shape above the temp/humidity sensor to provide mid-day shade. The sensor arm can also be removed from the pole and mounted to a wall in a remote shady area. Cables can be extended as needed.*

**STEP 12:** **Before proceeding with installation of the sensor array outdoors we recommend making sure all is working properly first.** Install 3 AA batteries into the Touch Screen Controller. Do Not Touch the LCD screen for at least 15 seconds after inserting the batteries. Make sure that the controller is communicating with the sensor array by viewing that outside temperature and humidity are displayed. Move wind direction sensor and note that compass display changes. Don't mind the actual readings at this point because the system normally takes at least 12 hours to stabilize. If Outside Temperature and Humidity is blank, remove the batteries from the console and re-insert in order to re-sync to the transmitter.

**STEP 13:** Install the sensor array outside in the desired location using the 2 included pipe clamps. Rotate the sensor array so the screw head which attaches the wind direction sensor to the top support arm is pointing towards North. You may need a magnetic compass to determine North.

**NOTE:** *Make sure there is no obstruction above the rain gauge. If doing a wind site survey the sensor array should be mounted at the same location planned for the wind turbine and should be higher than obstructions such as houses or trees which tend to block the wind.*

**STEP 14:** Route wires to clean up the installation by



running them along the arms and metal mast. Tie Wraps or electrical tape can be used to hold wires in place. Excess wire can be pushed into the top of the mounting pole.

**STEP 15:** Mount the Touch Screen controller in the desired location. Due to obstructions between the sensor array and controller (walls, trees, buildings, etc) you may find that you have to move the controller to a different location to get good communications.

## *Touch Screen Controller Operation*

1. The operation of the touch screen is intuitive so we will be brief in this Qwik Install Guide. If you need further details, refer to the product manual.
2. Touch the parameter you want to change, for instance INside temperature. The INside Temperature will start flashing and a “+” and “-” will appear in the TENDENCY window. Touching the “+” or “-” will toggle between °C and °F. Touching the INside temperature twice will show the HI Alarm and allow limit setting and turning the alarm on/off in the TENDENCY window. Touching INside temperature 3 times will show the LO Alarm.
3. Touch the parameter OUTside temperature. Because this parameter has different display modes, when you press “+” or “-” it will allow you to select Temp display or Wind Chill or Dew Point. Touching twice will allow you to select °C or °F and touching 3 or 4 times will allow you to set the alarms.
4. To stop a flashing display just touch any blank area of the display or wait about 30 secs for the controller to timeout.
5. All parameters follow this same basic operation and with a little practice you will become familiar with them. All these settings can also be setup with a PC and the EasyWeather software
6. Clear the display console memory before connecting to a computer for the first time after installation. Touch the memory indicator until CLEAR shows next to it. Touch one more time and hold for 6 seconds to clear the memory on the display console.
7. The MAX values are stored in non-volatile RAM in the display console. If you want to clear a MAX value you need to touch that parameter till you see the word MAX flashing in the TENDENCY area. Then touch once more and hold for 6 seconds. This will clear the MAX value. Because many areas of the display are multifunction; for instance wind can display average or gust, you will need to clear each MAX individually by first setting the display to Average or Gust and then clearing the MAX as described above.

# EasyWeather Software

1. Following are some basics to get you started. If you need more detail, please refer to the product manual.
2. Install the EasyWeather software before hooking the Touch Screen Controller up to the computer with the USB cable.
3. Insert the Compact Disk into the CDROM drive in the computer. Run SETUP or EASYWEATHER.EXE and follow the prompts to install. **NOTE:** *For the graph functions to work properly you must install this software while logged into the computer as an administrator.*
4. Open the EasyWeather software on the computer. On Windows 7 machines the software needs to be “Run As Administrator”. Right click on the software shortcut and select “Run As Administrator” from the menu. You can also set the default properties of the shortcut to always “run as administrator”. Refer to your Windows documentation for further instructions.
5. Attach the Touch Screen controller to the computer thru a USB cable. The connection status can be viewed in the lower right portion of the EasyWeather screen. It will show a “Connected” when connected or a “Not Connected” if disconnected. The software will automatically download any existing stored data from the Touch Screen Controller. This process can take up to 4 minutes if data memory is full. Progress can be viewed in the lower left portion of the EasyWeather screen.
6. Setup the system on the SYSTEM | SETUP page. This is also the only place to set the data storage sample interval. The range is 5 to 240 minutes. Set the time zone where you are located (GMT +/-). Set the relative pressure which you can obtain from an outside source like internet or radio or TV for your area and elevation. Set the units that you want to display.
7. Setup the alarm limits on the SYSTEM | ALARM page.
8. To view stored data go to RECORD | HISTORY. Select a condition from the drop down near the top left or manually set a start and stop date and time then click on SEARCH to display the data.
9. To clear the memory on the Touch Screen Controller after downloading the data, click on the CLEAR MEMORY button. Don't press CLEAR DATA as this will permanently clear all EasyWeather stored data on the computer.
10. To Export Data to Excel as a delimited file (CSV) click on the EXPORT button.
11. To view stored data as a graph click on the GRAPH button. If you

want to zoom into a section of the graph, just highlight an area with the mouse and the system will automatically zoom. When in Graph mode, clicking on EXPORT will create a JPG graphics file

12. For data integrity it's important to make sure the computer time is the same as the time on the Touch Screen Controller within a few minutes. The Touch screen controller has a radio controlled clock (WWVB) so it's time is very accurate and is based on an atomic clock maintained by the government. *This signal may not be available in all areas*
13. On the original software V6, the data is stored in a file called easyweather.dat in a folder called Easyweather on your computer. If you ever have a problem with weird readings the file may have become corrupted. Clear the memory in the display console by touching the memory indicator until CLEAR shows next to it and then touching again and holding for 6 seconds. Then go in and either rename the easyweather.dat file or delete the file if you don't care about saving the data. The system will automatically create a new file.
14. On the new software V7+ the data is stored in a file called EasyWeather.mdb in C:\Users\Public\EasyWeather folder. **You cannot rename or change this file.** You can copy it to a new file name if you would like to make a backup before clearing data.



**Please help preserve the environment and return used batteries to an authorized depot**

# SPECIFICATIONS

Subject to change without notice

<b>Display Ranges</b>	
<b>Wind Speed</b>	0-100 MPH <i>Displays in mph, m/s, km/h, knots or Beaufort</i>
<b>Outdoor Temperature</b>	-40 to 65°C (-40 to 149°F) 0.1 deg resolution <i>Displays in °C or °F</i>
<b>Indoor Temperature</b>	0 to 50°C (32 to 122°F) 0.1 deg resolution <i>Displays in °C or °F</i>
<b>Humidity</b>	10 to 99% (1% resolution)
<b>Rain Gauge</b>	0-9999mm (394 inches) 0.1mm resolution <i>Displays in mm or inches (hour, day, week, month or total)</i>
<b>Barometric Pressure</b>	27.13 to 31.89 inHg 0.01inHg resolution <i>Displays in inHG or hPa</i>
<b>Wireless Transmitter / Sensor Array</b>	
<b>Operating Frequency</b>	915 MHz
<b>Operating Distance</b>	Up to 100meters (300 feet) between sensor array and controller
<b>Wind Survivability</b>	200 km/h (125 mph)
<b>Construction</b>	UV resistant white thermoplastic and stainless mounting pole
<b>Batteries</b>	2 type AA LR6 Alkaline (not included) gives 2 years battery life
<b>Mounting</b>	Pole mount using 2 stainless pole clamps
<b>Controller</b>	
<b>Setup</b>	Touch Screen or Computer
<b>Display</b>	Backlit LCD
<b>Memory Capacity</b>	4080 data samples (memory meter on display)
<b>Computer Interface</b>	USB
<b>Batteries</b>	3 type AA LR6 Alkaline (not included) gives 1 year battery life
<b>Dimensions (L x W x H)</b>	235 x 146 x 38mm (9.25" x 5.75" x 1.5")
<b>General</b>	
<b>Settable Alarms</b>	Temperature, Humidity, Wind Chill, Dew Point, Rainfall, Wind Speed, Barometric Pressure, Storm Warning
<b>Alarm duration</b>	Up to 120 seconds
<b>Time Setting</b>	Automatic thru WWVB or manual
<b>Time Display</b>	12hr or 24hr
<b>Calendar</b>	Perpetual
<b>Shipping Weight</b>	2.5kg (5.4lbs)

# TECH CORNER

## *Additional Information you may find useful*

1. **BAROMETRIC PRESSURE**—A barometer is a device that measures barometric pressure or air pressure. We can't feel this pressure because it presses on us evenly from all sides. A falling barometric pressure indicates an approaching low pressure system which usually results in a storm.
2. **RELATIVE PRESSURE**—This barometric pressure measurement takes into account the altitude. It is set manually from a reference source.
3. **ABSOLUTE PRESSURE**—This barometric pressure measurement is without regard for altitude
4. **INCHES OF MERCURY (inHg)**—This is the common unit of measure of barometric pressure in the USA
5. **HECTOPASCALS (hPa)**—This is the international unit of measure for barometric pressure.
6. **MEMORY**—The controller memory stores 4080 data sets. If the sample interval is set at 5 minutes the memory will be full in 14 days; 10 mins = 28 days, etc. When the memory is full it will discard the oldest record to make room for a new incoming record.
7. **BATTERIES**— It's recommended to only use Type AA LR6 Alkaline batteries like Duracell or Energizer. Using substandard alkaline or other batteries may cause the sensor array to malfunction, especially at outside temperatures < -20°C
8. **SUN**—The ProWeatherStation is constructed of all UV protected materials so it will survive for many years in the most extreme of solar environments (ie; an Arizona rooftop during the summer).
9. **LIGHTNING**—Lightning is the single worst enemy of outdoor electronics equipment. No electronics will survive a direct strike but there are close proximity strikes that can cause huge electrical fields to be generated which can damage electronic equipment. We have taken special care in the design of the ProWeatherStation unit to prevent damage from electrical storms but we cannot warrant this unit if damaged by lightning.
10. **PAINTING**—It's not recommended to paint the ProWeatherStation as this will void the warranty
11. **WWVB**—Used for radio controlled clocks in the USA. It is a radio signal sent from NIST in Fort Collins, Colorado which is based on an atomic clock maintained by the government.
- 12.



## NOTES

## **Appendix:**

### **FCC ID # WA5915MTX**

#### **Federal Communication Commission Interference Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **Limited Warranty**

The ProWeatherStation products are supplied with a limited 12 month warranty which covers material and workmanship defects. This warranty does not cover the following:

- Parts requiring replacement due to improper installation, misuse, poor site conditions, faulty power, etc.
- Lightning or weather damage.
- Physical damage to the external & internal parts.
- Products that have been opened, altered, or defaced.
- Water damage for units that were not mounted according to user manual.
- Usage other than in accordance with instructions and the normal intended use.

#### **Warranty Repairs**

All returns must have a valid RMA number written clearly on the outside of the box or shipment will be refused. For customers located in United States and Canada, customer pays all shipping charges incurred to ship the product to Tycon Power Systems (TPS). TPS pays shipping charges to return the product to the original purchaser. For all other countries, the original purchaser shall pay all shipping, broker fees, duties and taxes incurred in shipping products to and from TPS. TPS reserves the right to either repair or replace the defective unit. If it is determined that there is no fault found (NFF) on a unit the customer will be charged \$50 USD for testing time. This charge will be at the sole discretion of TPS. The RMA number is valid for 30 days from date of issue and product must be received within this timeframe or shipment will be refused

#### **Shipping and Damage Claims**

All shipping damage claims are the purchaser's responsibility. Inspect each shipment upon delivery and IMMEDIATELY report all damage, to the carrier. There may be time limits and inspections may be required.

