

# MERLIN

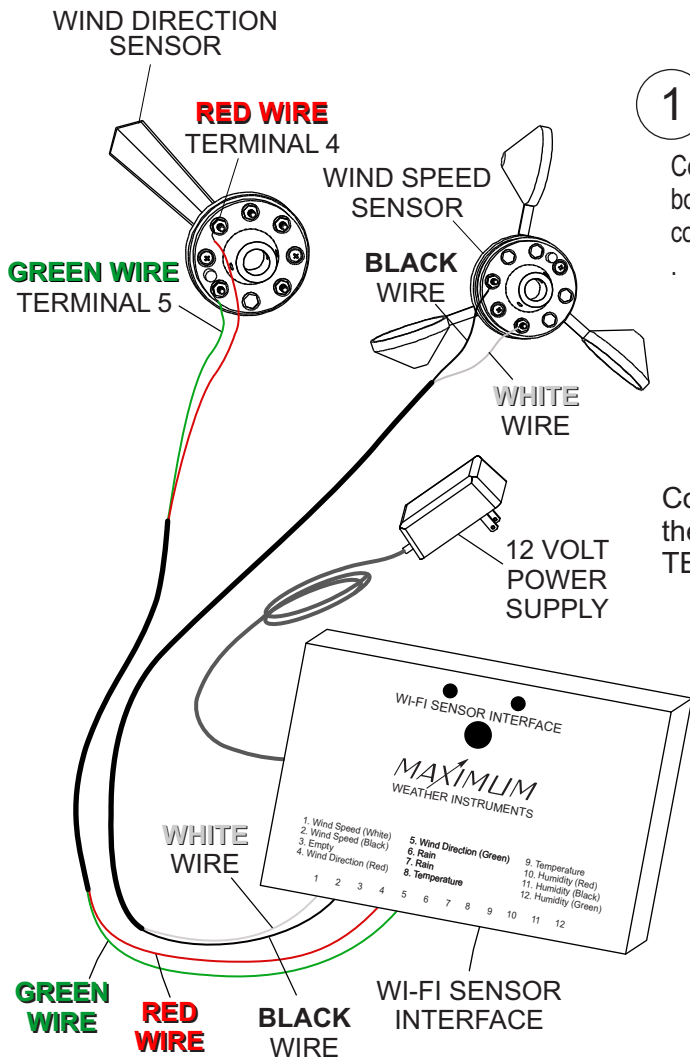
## WI-FI INSTALLATION

### OVERVIEW

Maximum has designed a system that captures all its exterior sensor options and transmits the weather conditions through your home or business wi-fi network. You can use this signal to display on our beautiful weather instruments and or interface with the Weather Underground website to monitor your installation remotely. If you would like to monitor your station on Weather Underground visit their website [www.wunderground.com](http://www.wunderground.com) and join. Follow the screen prompts to obtain a station id and password that will be required during the Captive Portal setup.

PROPER INSTALLATION IS IMPORTANT. IF YOU NEED ASSISTANCE, CONSULT A CONTRACTOR, ELECTRICIAN OR TELEVISION ANTENNA INSTALLER (CHECK WITH LOCAL BUILDING SUPPLY, OR HARDWARE STORE FOR REFERRALS). **TO PROMOTE CONFIDENCE, PERFORM A TRIAL WIRING (BENCH TEST) BEFORE INSTALLATION.**

### BENCH TEST



1

Connect the of the 2-conductor **RED** and **GREEN** wires to the bottom of the WIND DIRECTION SENSOR. Note that the **RED** wire connects to TERMINAL 4 and the **GREEN** wire goes to TERMINAL 5.

2

Connect the other ends of the **RED** and **GREEN** wires to the WI-FI SENSOR INTERFACE. The **RED** wire connects to TERMINAL 4 and the **GREEN** wire connects to TERMINAL 5.

3

Connect the **BLACK** and **WHITE** wires to the terminals of the WIND SPEED SENSOR.

4

Connect the other ends of the **BLACK** and **WHITE** wires to TERMINALS 1 and 2 of the WI-FI SENSOR INTERFACE.

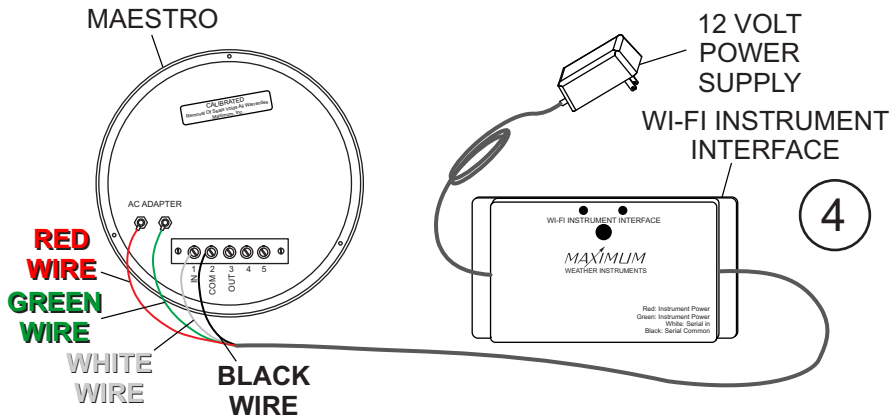
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Samuel Barnett Boulevard  
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# MERLIN

WI-FI

## INSTALLATION

### BENCH TEST (CONTINUED)



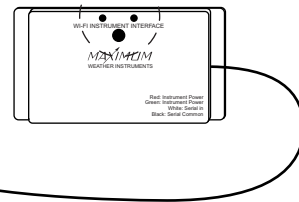
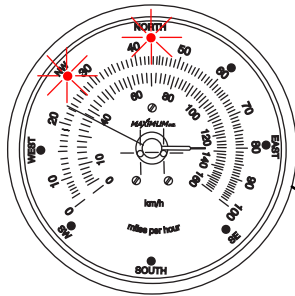
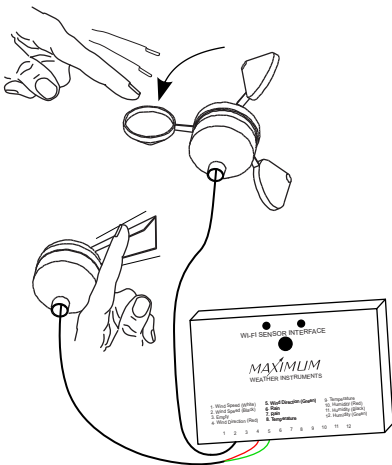
4

Connect the **RED** and **GREEN** wires to the terminals labeled AC ADAPTER as shown in the illustration. Connect the **WHITE** wire to the number 1 terminal and connect the **BLACK** wire to the number 2 TERMINAL.

5

Plug in the 12 volt power supplies on both the Instrument Interface and the Sensor Interface and observe the LED's as they run through the boot up sequence. Also turning the wind direction sensor and spinning the wind speed sensor should promote a change on the Maestro's dial.

BENCH TEST BOOT SEQUENCE		
Step	Sys App	Description
1	WI-FI INSTRUMENT INTERFACE	Power Applied
1	WI-FI INSTRUMENT INTERFACE	
1	WI-FI INSTRUMENT INTERFACE	System Started
1	WI-FI INSTRUMENT INTERFACE	
1	WI-FI INSTRUMENT INTERFACE	Captive Portal Launched
1	WI-FI INSTRUMENT INTERFACE	
1	WI-FI INSTRUMENT INTERFACE	Captive Portal Running
1	WI-FI INSTRUMENT INTERFACE	



Unplug both 12 volt power supplies and remove the wiring and cables and proceed with a permanent installation.

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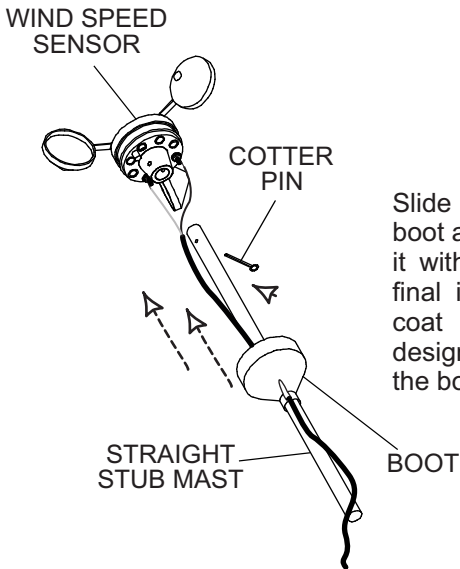
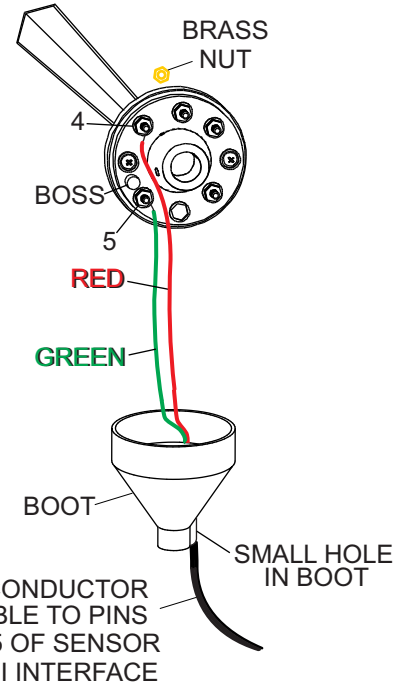
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## WI-FI INSTALLATION

1

Feed the terminal lug end of the 2-conductor cable through a rubber boot and connect the lugs to the terminals on the bottom of the wind-direction sensor with the brass nuts from the Hardware Pack. The **RED** wire connects to terminal #4, the **GREEN** to #5. Do NOT adjust the nuts that are already on the sensor.

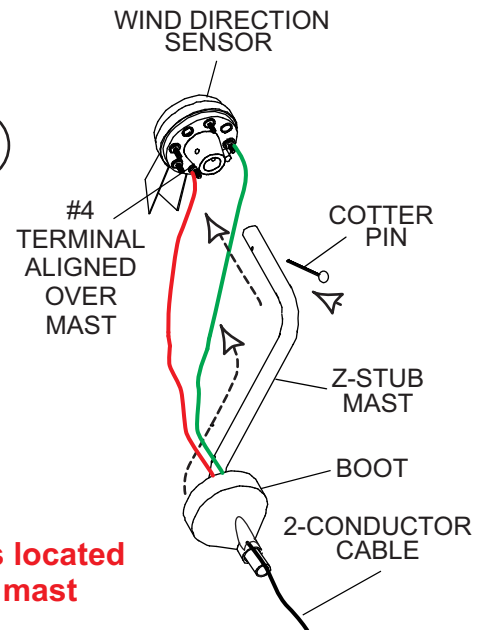


Slide the straight stub mast through the black rubber boot and insert it into the WIND SPEED SENSOR, securing it with the supplied stainless steel cotter pin. Once the final installation is made and proper function is verified, coat all the wire connections with a silicone sealant designed for electrical connections (not supplied). Slip the boot over the base of the sensor.

2

Slide the "Z" shaped mast through the black rubber boot and insert it into the WIND DIRECTION SENSOR. Align the sensor so that the number 4 TERMINAL is located over the horizontal section of the "Z" shaped mast and secure it with the supplied stainless steel cotter pin. Once the final installation is made and proper function is verified, coat all the wire connections with a silicone sealant designed for electrical connections (not supplied). Slip the boot over the base of the sensor.

3



**Align the sensor so that the number 4 terminal is located over the horizontal section of the "Z" shaped mast**

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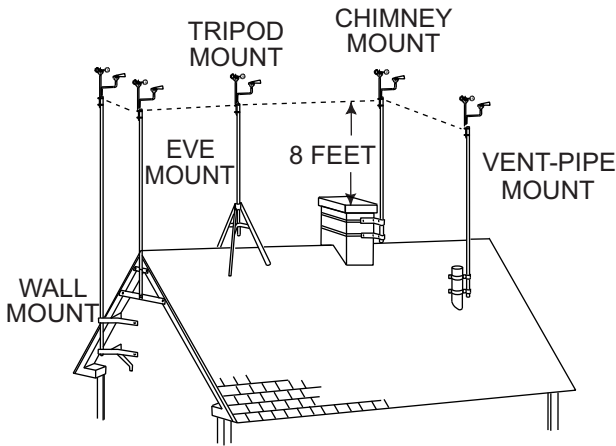
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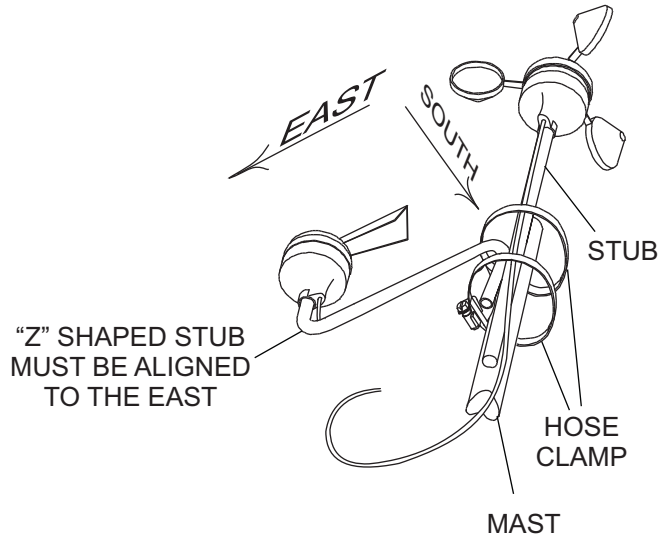
WI-FI

## INSTALLATION

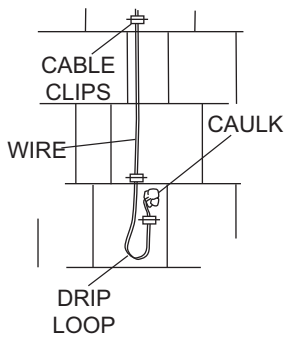
(continued)



- 4 Follow the instructions supplied with the antenna mount that you purchased and secure the mast to the mount.



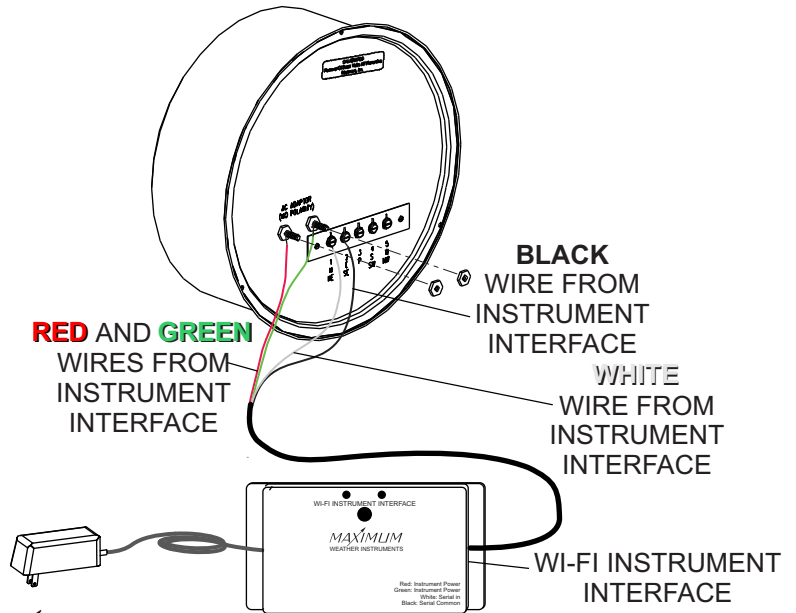
5



If the WI-FI SENSOR INTERFACE is to be inside form a drip loop at least eight inches below the point of entry into the building. Anchor any exposed wire with insulated cable clips. Run the wire into the building to the location where the SENSOR INTERFACE will be located. Caulk any holes when done.

6

Attach the wires to the rear of the brass INSTRUMENT as shown. The **RED** and **GREEN** wires from the INSTRUMENT WI-FI INTERFACE connect to the TERMINALS marked "1" and the **WHITE** wire connects to TERMINAL marked "4" and the **BLACK** wire to TERMINAL marked "2". (Do **NOT** adjust the nuts that are already on the meter.)



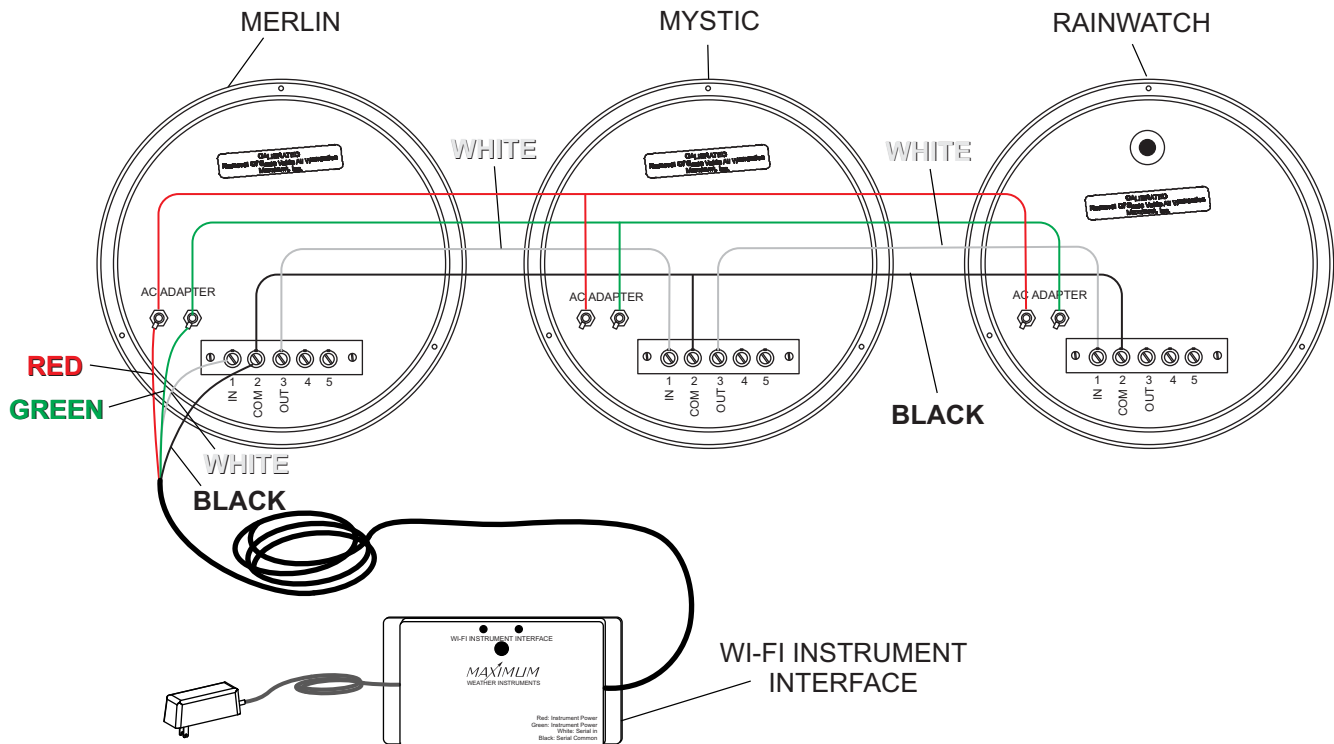
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## OPTIONAL INSTALLATION WITH MINI-MAX AND RAINWATCH



### RAINWATCH WITH MINI-MAX AND MAESTRO CONNECTIONS

- 1 Connect the **RED** and **GREEN** wires from the INTERFACE to the power terminals on the back of the MERLIN. The polarity does not matter. Connect other instruments from the power terminals on the back of the MERLIN.
- 2 Connect the **WHITE** wire from the INSTRUMENT INTERFACE to TERMINAL #1 (IN) of the MERLIN.
- 3 Connect the **BLACK** wire from the INSTRUMENT INTERFACE to TERMINAL #2 (COM) of the MERLIN.
- 4 A. Connect the **WHITE** wire from MERLIN TERMINAL #3 (OUT) to MYSTIC #1 (IN).  
B. Connect the **BLACK** wire from MERLIN TERMINAL #2 (COM) to MYSTIC TERMINAL #2 (COM).
- 5 A. Connect the **WHITE** wire from MYSTIC TERMINAL #3 (OUT) to RAINWATCH TERMINAL #1 (IN).  
B. Connect the **BLACK** wire from MYSTIC TERMINAL #2 (COM) to RAINWATCH TERMINAL #2 (COM).
- 6 The order of the instruments does not matter i.e. the WI-FI could just as well be wired into the RAINWATCH and the MYSTIC and MERLIN could be from the RAINWATCH.

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## WI-FI OPERATION

With the switch in the center (resting) position, MERLIN will display the information indicated by the illuminated function (Present, Peak, Average, or Forecast).

To select a function, move the switch to the right and allow it to return to the center. This toggles Merlin to the next function. Repeat this until you see the function that you wish.

To auto-sequence through all of the functions, hold the switch to the right for at least three seconds. You will see each function light stay on and the corresponding information displayed for approximately four seconds. MERLIN will then move to the next function automatically.

To return to the manual sequencing mode, move the switch briefly to the right and then let it return to center.

To reset all the stored functions at once, select the "Present" function by moving the switch to the right and releasing until the "Present" light is illuminated. Then hold the switch to the left until the display blanks out (about six seconds). The unit will then perform a self-test and return to normal operation.

Resetting the Peak, Average and Forecast functions individually can be done by toggling to the function that you wish to reset. Then hold the switch to the left for at least 6 seconds. At that point you will see the display reset itself.

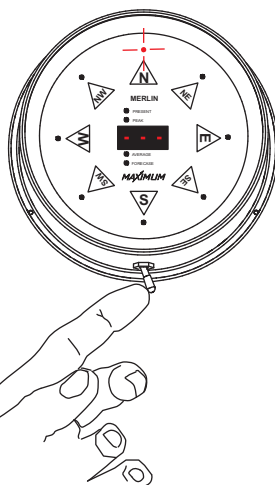
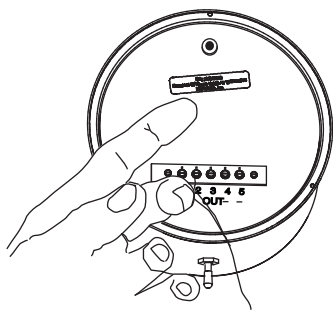
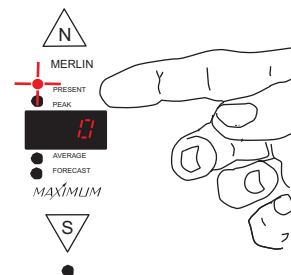
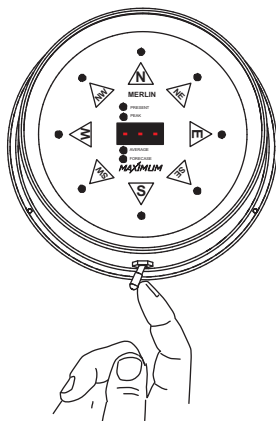
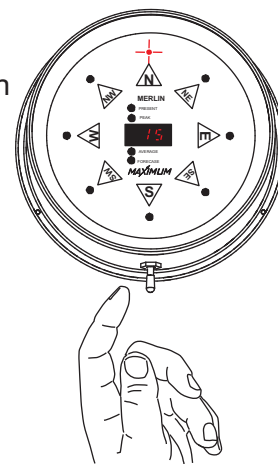
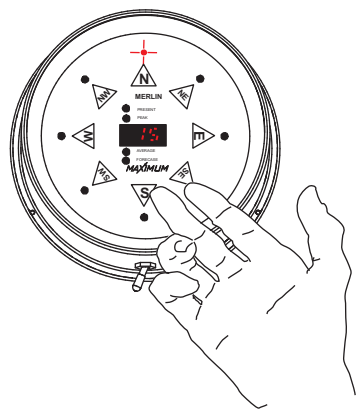
## SETTING UNITS OF MEASUREMENT

Merlin can be set to display the wind speed in miles per hour, knots, kilometers per hour or meters per second. To change the units of measurement follow these steps:

1. Press the small push button switch on the back of the MERLIN indicator. The display will show "UN" and a number. The number indicates the units of measurement.

- UN0 = miles per hour
- UN1 = meters per second
- UN2 = kilometers per hour
- UN3 = knots

2. Press the push button again to advance through the available units.  
3. When you have the code showing for the units of measurement you want, press the toggle switch on the side of the case to the right (auto position). Merlin will then perform a self-test and return to normal operation.



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## OPERATION

(CONTINUED)

**Peak Wind-** *When first powering up MERLIN, after long power outages, or when totally resetting, the Peak Wind direction LEDs will not function until wind has been recorded.*

**Average Wind-** *The first reading after setting the Average will be the current wind speed. This reading will settle out as MERLIN accumulates more data. Prevailing wind direction lights will not function until 12 minutes after powering up or resetting. As with the wind speed there will be no prevailing direction indication if there is no wind.*

**Forecast-** *When first powering up MERLIN, after long power outages, or when totally resetting, the Forecast display will read "hld" (hold) for 24 minutes while MERLIN is loading its memory. During the 25th minute MERLIN will make a trend reading "inc" (increase), "dec" (decrease), "---" (no change) in wind speed based on comparing two 12-minute blocks of time. If there has been no wind for an entire 12 minute timing interval, the direction lights will blank out. If there is no wind for the next 12 minutes then the display will show "---" and the direction lights will remain off.*

**Wind Direction-** *MERLIN takes a reading every second. When the wind changes direction very rapidly (faster than 1 second), some direction lights may not light. This is normal operation as MERLIN is simply between readings.*

**Latch Up-** *Power Line disturbances or improper installation (plugging in the AC Adapter before attaching to instrument) can cause a blank or improper display reading. If MERLIN is "latched up" proceed as follows:*

1. Unplug the AC adapter.
2. Wait 15 seconds.
3. Plug the AC adapter back in to a 110 VAC outlet.

- During power outages MERLIN's display will blank out and the instrument will not continue to accumulate data. It will preserve the previously accumulated data for up to 10 years.
- Using the Forecast function and periodically updated Average function together, you can often watch not only small changes in wind conditions but more significant "backing" and "veering" patterns foretelling frontal movements.
- If you are unsure as to when Forecast made it's last update, wait more than 12 minutes and read again (it updates every 12 minutes).
- When MERLIN is in the *Peak, Average, and Forecast* modes the direction lights blink. This indicates that you are observing recorded data and not the present wind direction.
- Setting the switch to Auto does not erase stored data.
- You do not need to time the 6 second reset time, MERLIN will blank out the display to indicate that the memory has been erased.

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