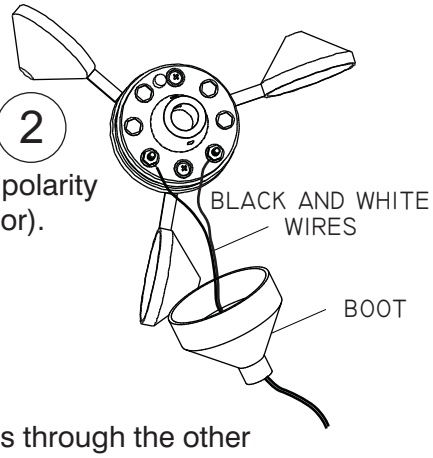
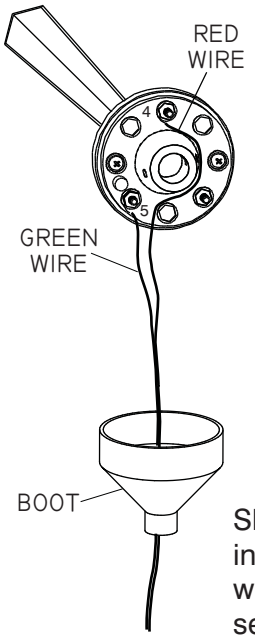
MERLIN
INSTALLATION

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

1 Determine where you are going to locate both the rooftop sensors and the read-out.

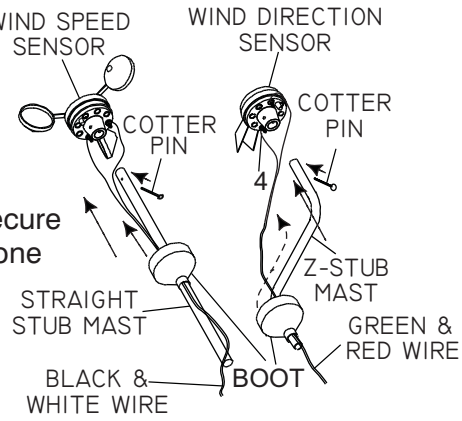
2 Feed the teminal lug end of the black and white wires through one of the rubber boots and connect the lugs to the terminals on the bottom of the wind speed sensor using the brass nuts provided. The polarity does not matter. (Do NOT adjust the nuts that are already on the sensor).

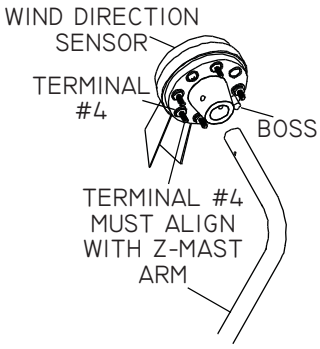




3 Feed the terminal lug end of the red and green wires through the other rubber boot. Connect the red wire to the terminal marked #4. Connect the green wire to the terminal marked #5. The polarity MUST be observed. Use the hex nuts provided. (Do NOT adjust the nuts that are already on the wind direction sensor).

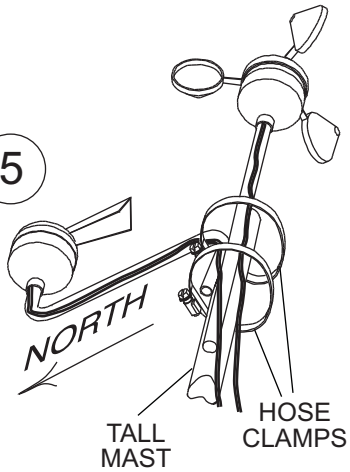
4 Slide the stub masts through the rubber boots and insert the stub masts into the bottom of the sensors. Secure with the cotter pins. Coat all wire connections with silicone sealant and slip the boots over the sensors.





4A When connecting the wind direction sensor to the Z-mast, make certain that terminal #4 is aligned with the Z-mast arm. If the sensor is not installed in this manner your wind direction readings will be incorrect.

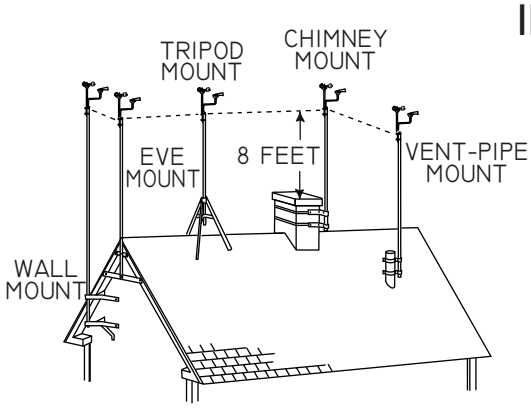
5 Secure the sensors and stub masts to your antenna mast (not supplied) with the two hose clamps. **Align the wind-direction Z-mast arm to true North**. Radio Shack and similar stores have a selection of tall masts and roof mounting brackets. Choose a mount that best suits your location and provides at least eight feet of vertical clearance above objects on the roof.



MAXIMUM INC

MERLIN

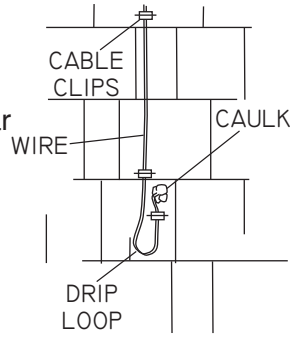
INSTALLATION
(continued)



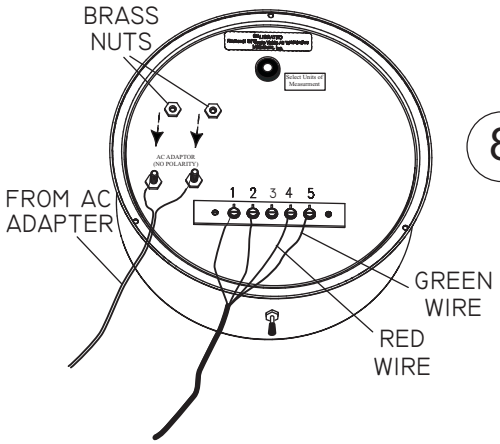
6

Follow the instructions supplied with the antenna mount and secure the mast to the mount.

7

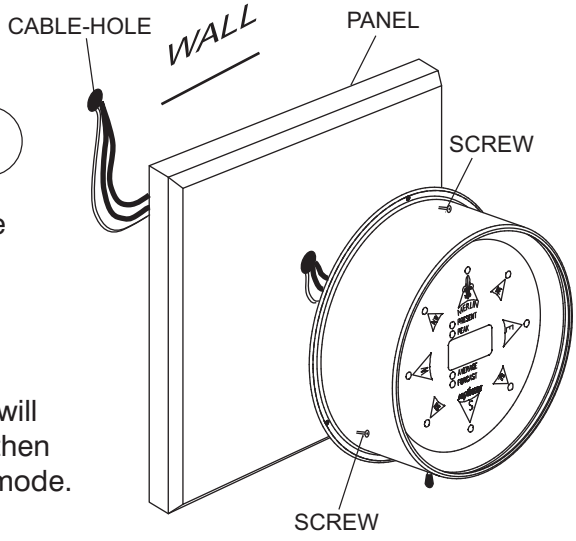


Secure the wire to the building using cable clips (do not use regular staples). Form a drip loop where the wires enter the hole drilled through the exterior wall. Caulk the hole when done.



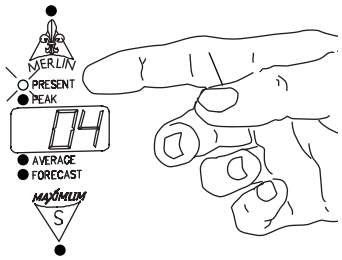
8

Feed the cables through the wall to where the read-out is going to be located. Attach the wires to the rear of the read-out as shown. The red wire from the direction sensor cable connects to terminal #4. the green wire to terminal #5. Connect the black and white wires from the speed sensor to terminals #1 and #2. The polarity does not matter. Although the cable shield itself is not connected, shielded cable must be used. Connect the wires from the AC adapter to the meter. The polarity does not matter. (Do NOT adjust the nuts that are already on the meter).



9

Mount the brass read-out directly over the cable feed-thru-hole to avoid crimping the wire under the lip. We recommend mounting the read-out on one of our pre-drilled and centered panels. Plug the power supply into a 110 VAC power outlet.



10

When Merlin first starts up it will perform a brief self-test and then go to the "Present" function mode.

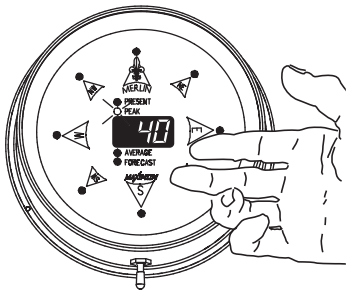
11

Reset all memory functions (see operating instructions). Resetting gives Merlin a fresh starting point for your reference.

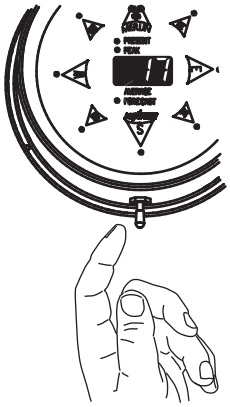
MAXIMUM INC

MERLIN

OPERATION



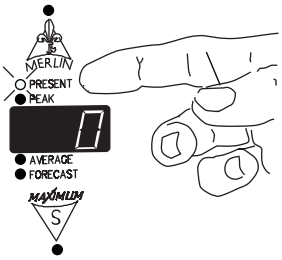
With the switch in the center (resting) position, MERLIN will display the information indicated by the illuminated function (Present, Peak, Average, or Forecast).



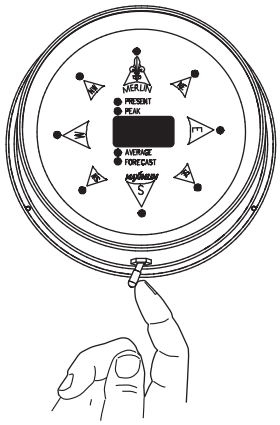
To select a function, move the switch to the right and allow it to return to the center. This toggles Merlin to the next function. Repeat this until you see the function that you wish.

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.

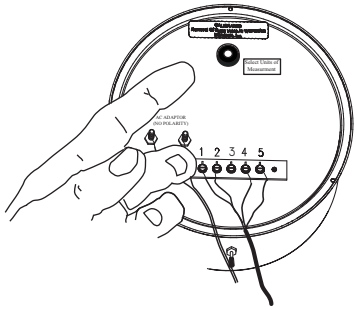


To reset all the stored functions at once, select the "Present" function by moving the switch to the right and releasing until the "Present" light is illuminated. Then hold the switch to the left until the display blanks out (about six seconds). The unit will then perform a self-test and return to normal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

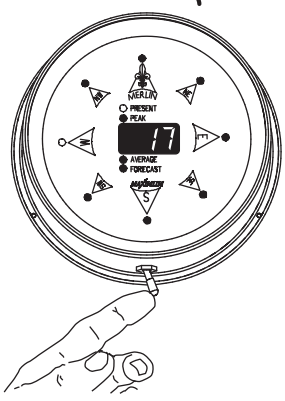
1. Press the small push button switch on the back of the indicator.

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.



MAXIMUM INC

MERLIN

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 at least 1 MPH 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 not 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 powering up (plugging in the AC Adapter before wiring) 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 long 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 fortelling 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.

MAXIMUM INC

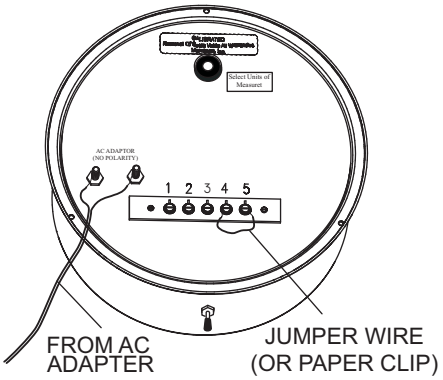
MERLIN

TROUBLE SHOOTING
(WIND DIRECTION)

Perform the latch up corrections as previously detailed.

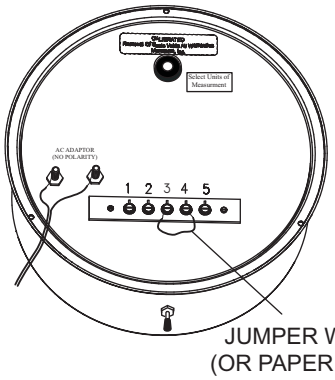
The unit will now perform the self test, all LEDS will light for about 3 seconds. If you do not have time to check that all LEDS light, repeat the procedure. This will cause the self test to start again. If some or all of the LEDS do not light, then the fault is in the instrument.

IF ALL LEDS LIGHT.....

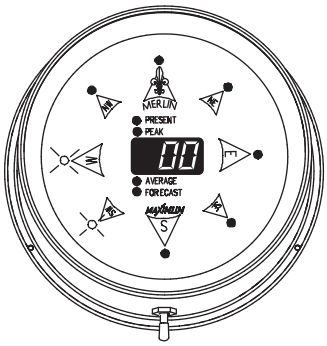


1. Disconnect the sensor wires from the back of the meter.

2. Connect a jumper wire (a paper clip will suffice) between terminals #4 and #5. The instrument should indicate “0” wind speed and “WSW” direction. If it does then continue to step 4. If not, continue to step 3.

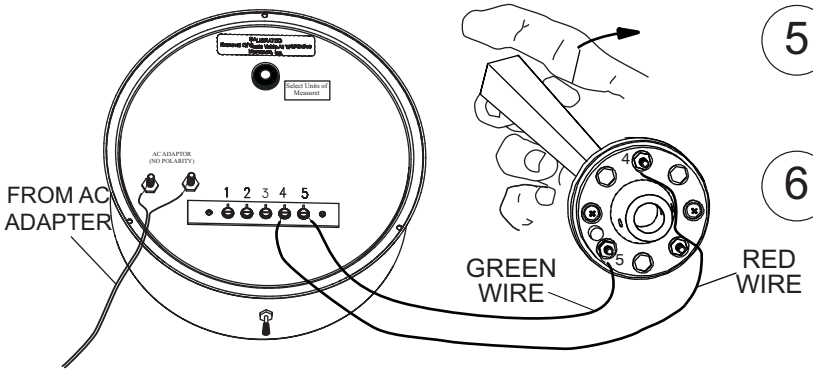


3. Connect the same jumper wire used in step 2 to between terminals #3 and #4. The instrument should now indicate “0” wind speed and “WSW” direction. If it does then continue to step 4. If not, the fault is in the instrument.



IF THE INSTRUMENT TESTS OKAY.....

4. Reconnect the wind direction wires. If there is still a fault in the wind direction portion, then the problem is in the wind direction sensor or the installed wire.



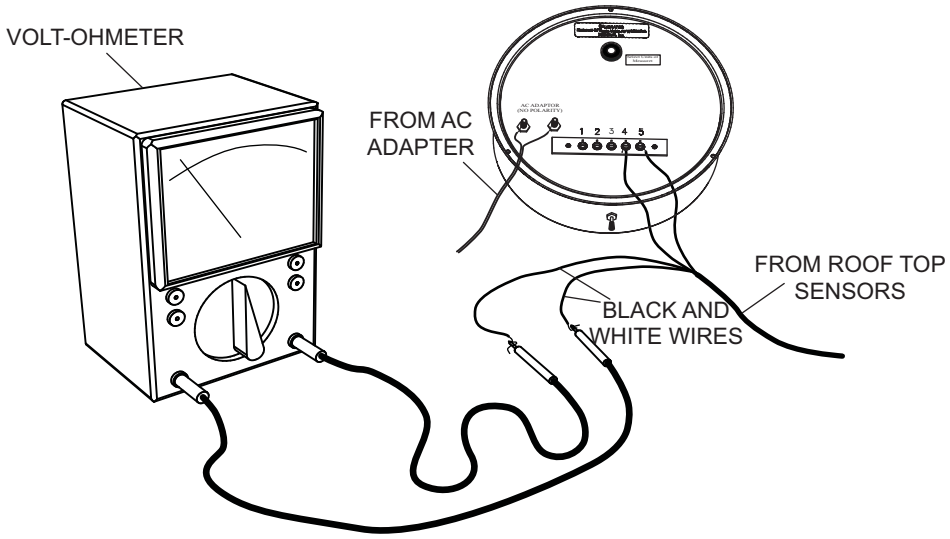
5. Remove the sensor from the roof and connect it to the indicator with short pieces of wire.

6. Rotate the vane slowly and observe the lights. If it still does not operate properly, then the fault is in the sensor. Otherwise the fault is in the installed wire.

MAXIMUM INC

MERLIN

TROUBLE SHOOTING
(WIND SPEED)



IF THERE IS WIND.....

1. Disconnect the black and white wires from the back of the indicator and connect them to volt-ohmeter as shown. Set for low range AC Volts.

2. If the sensor is operating properly, you will achieve these approximate readings:
   8-9 MPH = 0.15 VAC rms
   17 MPH = 0.31 VAC rms
   51 MPH = 0.97 VAC rms
   102 MPH = 2.00 VAC rms

3. If the sensor delivers the above approximate voltages, then the fault lies in the indicator. If it does not deliver these voltages, then the fault lies in the sensor or installed wire.

IF THERE IS NO WIND.....

1. Disconnect the black and white wires from the back of the indicator and connect them to volt-ohmeter as shown. Set the range for Ohms.

2. If the sensor and wire are good, the ohm meter should indicate between 500 and 1,000 ohms. If there is a good reading on the ohm meter, then the indicator is at fault. If the reading is wrong, then the sensor or installed wire is at fault.

MAXIMUM INC

MERLIN

INFORMATION FOR THE MERLIN USER

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

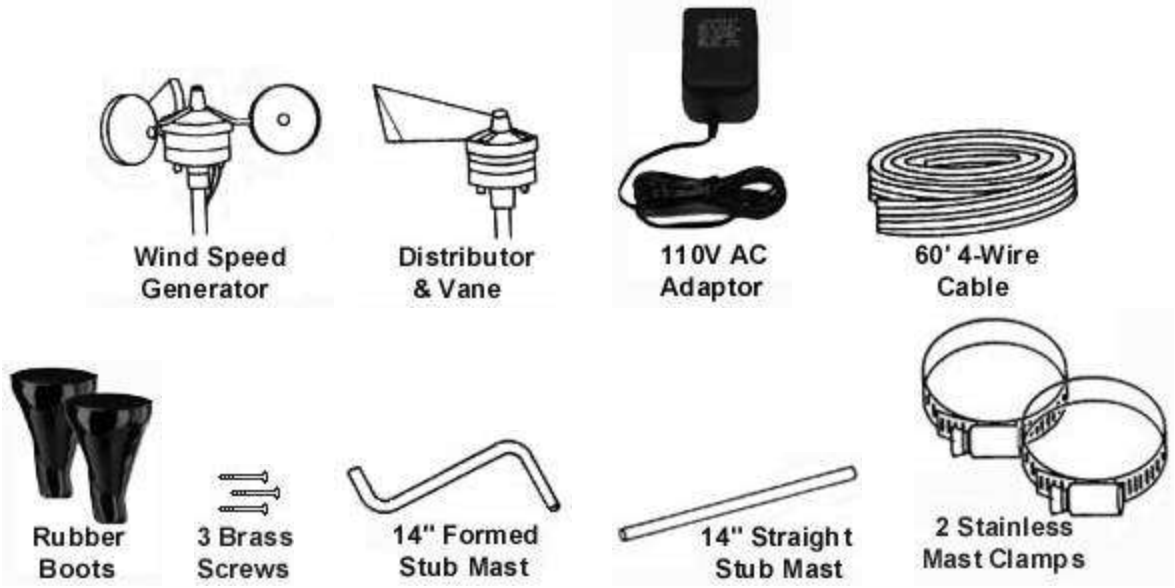
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded cables must be used with the wind sensors to ensure compliance with the Class B FCC limits.

MAXIMUM INC

IMPORTANT ADDITIONAL INFORMATION

Components: Along with the indicator, the following components are included with this instrument:



Rooftop sensors: To insure a clear unobstructed path for the wind to the sensors, they should be mounted on some type of antenna mast at least 8-10' above the highest object on your roof. Remember, your roof is also an obstruction and it usually requires at least 8' of height to avoid the turbulence it creates.

AC Adaptor: This instrument requires its own AC Adaptor. Due to the various power requirements of each Maximum instrument, attempting to run more than one instrument on a single adaptor could cause improper operation and/or damage to the instrument(s) thereby voiding your 5-year warranty.

Sensors: Properly installed, your sensors will require virtually no maintenance at all. Our sensors do not utilize brushes or wiping contacts. All bearings are Rulon-J self lubricating type and will perform for many years in the harshest environments.

Brass Case: Your brass case is solid brass A70-30 Holloware quality, with a durable lacquer finish. It is in fact a piece of jewelry and should be treated as such. It should be cleaned at least once a week to keep airborne pollutants (dust, etc…) and any moisture from collecting on the case thereby attacking the lacquer. At no time should you use an abrasive cleaner or cloth on the brass case. Simply use a soft cloth or soft paper towel with a mild glass cleaner to wipe the case clean. If your instruments are in a summer home, and you are not able to clean them regularly, simply lay a small cloth or towel across the top two-thirds so that dust cannot settle on the finish.

Specifications: All instrumentation or measuring devices have accuracy tolerances and specifications. Making comparisons between different pieces of equipment is appropriate provided the specified accuracies of both are known.

	Measurement Range	**Guaranteed Accuracy**
Wind Speed	0-255 MPH	±2% Full Scale & Mid Scale
Wind Direction (Indicator)	16 Compass Points	Zero Error (Digital Display System)
Wind Direction (Sensor)		±11.25 Degrees

MAXIMUM®
WEATHER INSTRUMENTS

Electrical Damage – Common Causes & Recommended Prevention

Electrical damage can be caused by many different factors. Below are some of the more common causes and some suggested methods of minimizing potential problems.

Common Causes:

- **Storm Activity –** lightening in your area can do damage to your instruments in different ways. The obvious way is due to a direct or nearby strike. In addition, lightening storms, dust storms, dry snowstorms and strong dry winds can all cause static electricity to build up on and around your external sensors. Regardless of the cause this built up electricity can discharge itself through the cable connecting the external sensors to the instrument.

- **Power Surges –** A surge may come from the electric company's switching generators or power grids, from local industries or after power interruption when accumulated power suddenly surges back through AC lines. Even the on-and-off switching of large electrical appliances, such as refrigerators or clothes dryers can create damaging fluctuations. This is especially true with sensitive weather recording devices.

- **Yourself –** Are you constantly giving and/or receiving a shock every time you touch a doorknob or another person? If so you have a great deal of static electricity in your environment. Depending on where you live, static electricity may be a year round problem or only a seasonal problem. In either case, it is possible for a person to carry enough of a charge to damage an instrument.

Recommended Prevention:

Ground Your Mounting Mast – *IMPORTANT*: PVC and fiberglass are not recommended mast materials as they can store high amounts of static electricity within themselves. It is recommended that you follow the grounding instructions that came with your mounting mast, while also maintaining accordance to your local Electric Code. In the absence of instructions for your mast system, the following generic guidelines from the **National Electric Code** may be helpful.

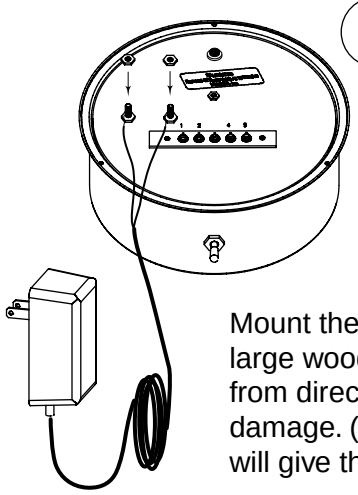
1) The NEC requires that the antenna mast and mount be grounded directly. No splices or connections are allowed in the ground wire between the mast and the ground rod.
2) Attach one end of a No. 8 (or thicker) copper or aluminum ground wire to the antenna mast. **Note:** As static electricity issues are more common for weather sensors than direct lightening strikes, consider installing the ground wire as physically close to the wind sensors as possible to best combat static electricity issues. For multi-piece (or telescoping) masts, consider connecting the ground to each separate section of the mast.
3) For painted or coated masts, scrape off the coating around the area where the contact will be made. This will ensure a good, solid connection. (Once the ground is attached to the mast, any scraped off portion that is exposed should be recoated with paint or other sealant.)
4) Next, run the ground wire to ground as directly as possible. Standard wire staples can be used to secure the ground wire against the side of the house. Avoid making 90° or sharper turns with the ground wire. A lightning charge has difficulty making such a turn and therefore may discharge into the house. Make ground wire bends as smooth and as gradual as possible.
5) The ground wire must be connected to a ground rod. Water pipes or plumbing fixtures are not acceptable. A good copper-coated steel ground rod driven at least 3 feet into the ground is required. Special clamps that provide a solid connection between the ground wire and ground rod should be used

- **Use Surge Protectors –** For the AC adapter, a UL 1449 rated surge protector with EMI/RFI filtering is recommended. This rating will be clearly listed on the packaging of any good quality surge protector.

- **Discharge Yourself –** If the instruments are located in an environment where static electricity is a problem, make sure that you discharge yourself before touching the instrument(s). The shock that you get from touching a doorknob or another person can often be sufficient to damage an instrument.

MYSTIC
INSTALLATION

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



1

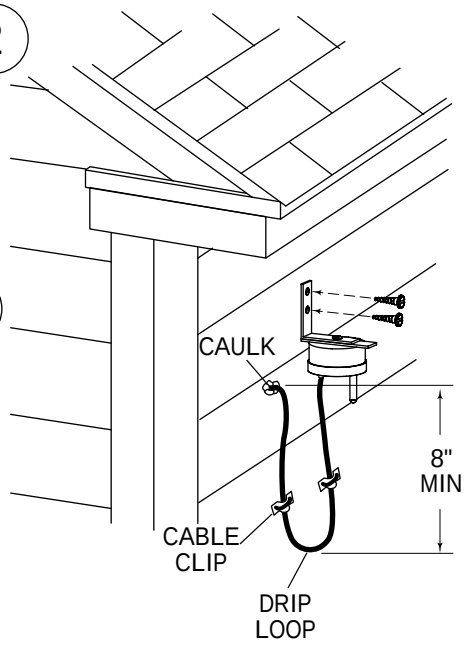
Connect the AC adapter to Mystic and plug into outlet. The display will briefly light up all the indicator lights (self test). Next the display will show the unit of measurement codes and then will show the barometer function light and the center display will show a pressure reading. **Leave Mystic in this mode for two hours. Do not activate the switch at the bottom of the case.** At the end of this two hour period, Mystic will be ready to have the pressure adjustment performed.

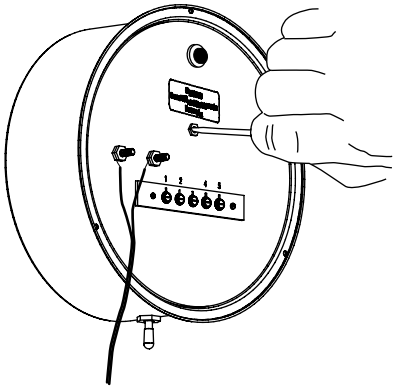
2

Mount the temperature sensor assembly with the two large wood screws. Select a location that is protected from direct sunlight and sheltered from rain and physical damage. (A north exposure, six feet above the ground will give the best results.)

3

Form a drip loop with the wire at least eight inches below the exit from the sensor and at least eight inches below the point of entry into the building. Anchor any exposed wire with insulated cable clips. Run the wire through the building to the location where the indicator will be located. Caulk any holes when done.





4

Now calibrate the barometer for your altitude. Obtain the current barometric pressure for your area by calling a near-by airport or an individual who has a properly set barometer. Insert a small screw driver into the recessed slotted screw at the back of Mystic. Turn the screw while observing the pressure read out on the front of Mystic. Due to the sensitivity of this adjustment, the numbers on the display may fluctuate during this procedure. It may take a minute to achieve the exact setting. Once the unit is set, move the toggle switch to the right (auto) one time to lock in the setting.

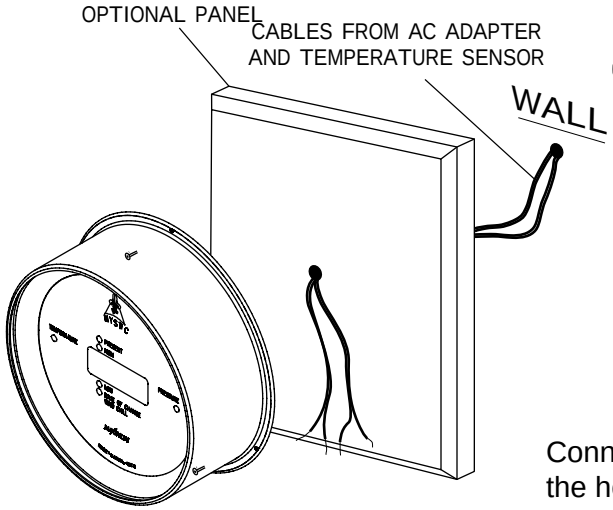
5

Unplug the AC adaptor and disconnect the wires. Mystic is now ready for the final installation. The adjustment that you have made will always remain intact.

MAXIMUM INC.

MYSTIC

INSTALLATION (CONT.)

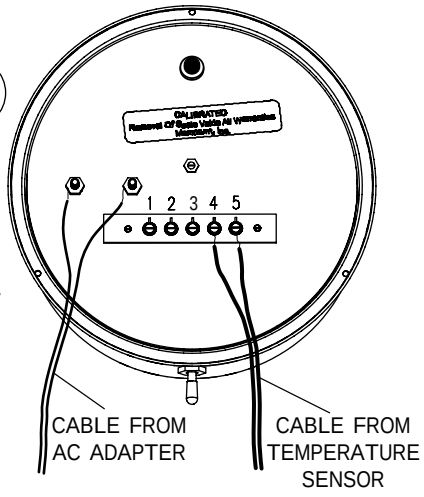


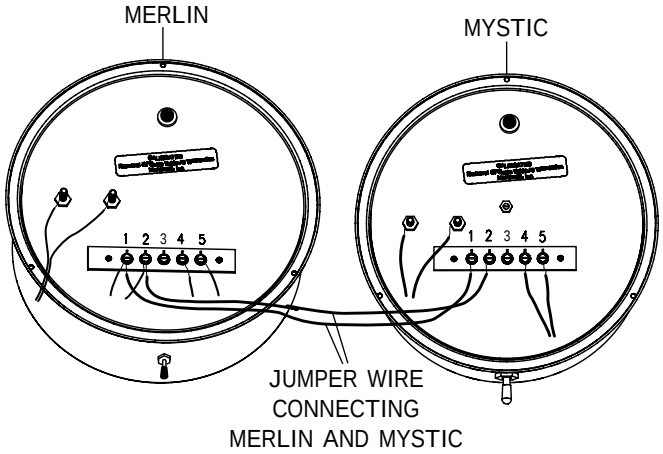
6

Feed the cables from the AC adapter and the temperature sensor through the wall to Mystic. We recommend using one of our pre-drilled panels for mounting Mystic. Take precautions to avoid crimping the wires under the lip of the brass readout.

7

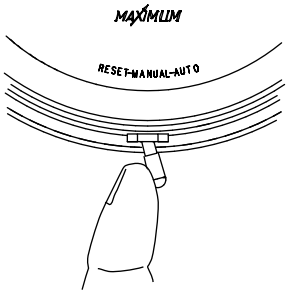
Connect the AC adapter wires with the hex nuts. The polarity does not matter. Connect the two wires from the air-temperature sensor to terminals 4 and 5. Again, the polarity does not matter.





8

If you own a Merlin, connect the jumper wire (supplied) to terminals #1 and #2 on Merlin. There will now be two wires connected to terminals #1 and #2. Connect the other end of the jumper wires to terminals #1 and #2 of Mystic. Note that terminal #1 of Merlin connects to terminal #1 of Mystic and #2 connects to #2.



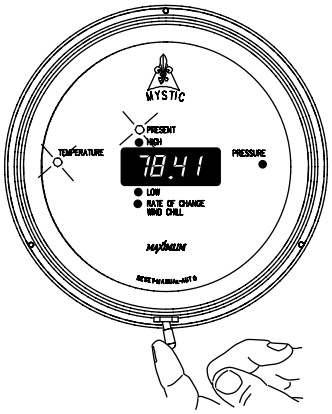
9

Plug the AC adaptor into a 110VAC outlet. Mystic will power up and self test briefly then the center display will show the pressure adjustment mode. You must exit the adjustment mode by moving the switch to Auto and releasing it.

NOTE: After any full reset, Mystic will display the pressure adjustment mode. It is never necessary to perform the pressure adjustment again. Simply exit this mode by moving the switch to Auto and releasing it.

MAXIMUM INC.

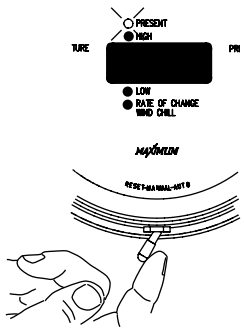
MYSTIC
OPERATION



Move the toggle switch at the bottom of the case to the right (auto) and allow it to return. This manually moves the Mystic through the individual functions. The illuminated function LED's indicate which function and setting is being displayed.

Moving the toggle switch to the right (auto) and holding it for at least three seconds will put Mystic into its Auto sequencing mode. You will see each function light stay on and that particular information displayed for approximately four seconds and then move to the next function automatically.

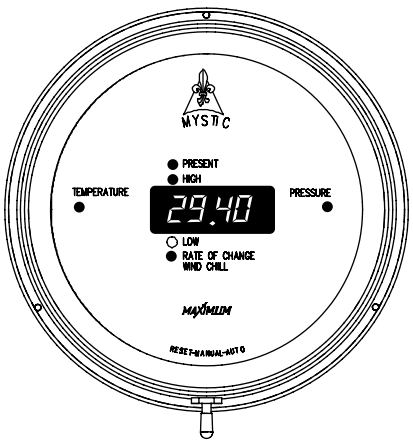
If Mystic is Auto sequencing and you wish to turn that function off - move the toggle switch to the right (auto) and release it. You can now manually step through the functions as previously mentioned.



Any Individual function's memory can be independently reset.
Move the toggle switch to the right (auto) until that particular function is displayed. Then move the toggle switch to the left (reset) and hold it for six seconds. The display will quickly blank, indicating that the memory for that function has been reset.

A "FULL" reset may also be done to clear all memories simultaneously or if an adjustment to the barometer setting is needed. Toggle through Mystics settings until the "Present" fuction is displayed. Then move the toggle switch to the left (reset) and hold it for six seconds. The display will self-test and enter into the barometer adjustment mode. If necessary the barometer may be reset at this time by adjusting the set screw on the backplate. Exit the barometer adjustment mode by moving the toggle switch to the right (auto) and releasing it.

NOTE: After any "FULL" reset, temperature and/or wind chill data will be displayed and stored after ten seconds. Pressure data will be displayed and stored after two minutes. However, Rate of Change/Pressure will show "HOLD" for 72 minutes following a "FULL" reset.

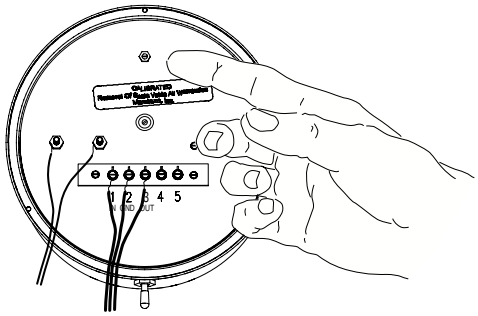


When the toggle switch is in the center position Mystic will display the information that is indicated by the function light. All the other functions data are being recorded and stored.

MAXIMUM INC.

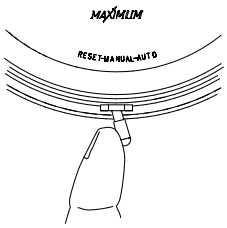
MYSTIC

OPERATION (CONT.)



Mystic can be set to display the temperature in Fahrenheit or Celsius. The barometric pressure can be set to inches of mercury, millimeters of mercury, millibars or kilopascals. To change the units of measurement follow these steps:

1. Press the small push button switch on the back of the indicator. The display will show "F" or "C"
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). The display will now show "P" and a number. The number indicates the units of measurement for pressure.



P0 = inches of mercury
P1 = millimeters of mercury
P2 = millibars
P3 = kilopascals

4. Press the push button again to advance through the available units.
5. 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). Mystic will then perform a self-test and return to normal operation.

IMPORTANT FACTS ABOUT YOUR MYSTIC

- **Latch Up**- Power Line disturbances, improper powering up or an error in wiring can cause a blank or improper display reading. If MYSTIC is "latched up" in this way proceed as follows:
  1. Unplug the AC adapter from the 110 VAC outlet.
  2. Wait 15 seconds.
  3. Plug the AC adapter in to the 110 VAC power outlet.

- During long power outages MYSTIC'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.
- Moving the switch to "Auto" does not erase stored information.
- You do not need to time the 6 second reset time. Mystic will blank out the display to indicate that the memory has been erased.
- Set barometer by obtaining an accruate reading from a source as close to your location as possible. The closest airport, weather bureau or an individual with an accurate barometer would be a few examples.
- Rate-of-Change indicates the measure of the rise or fall of the barometric pressure observed over a one hour period. It is updated every 12 minutes.

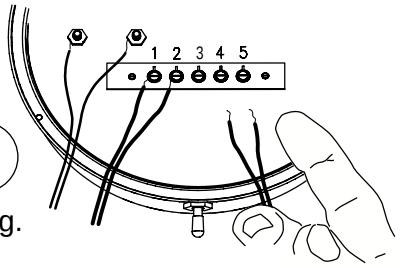
MAXIMUM INC.

MYSTIC
TROUBLESHOOTING

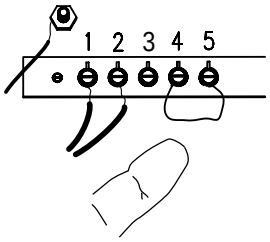
If at any time the temperature reading seems to be giving you difficulty, prodeed as follows:

1 Remove the instrument from the wall.

2

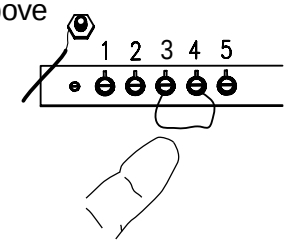


At the back of the indicator, disconnect the sensor wires from terminals #4 and #5. The current temperature reading should drop to -40°F (-40°C) or below. This is the normal open circuit reading.



3 Use a jumper wire (a paper clip will do) to connect across the sensor terminals #4 and #5. The indicator should read 122°F (50°C). If so, disconnect this jumper and proceed to the next step.

4



Use a jumper to connect between terminals #3 and #4. The calibration test point has been hand-written on the back of the Indicator just above terminals #3 and #4.

If the indicator is in proper working order, it will read within 2°F of this number. We recommend you mount the instrument back on the wall in this mode for several hours and observe it periodically. This will help detect most intermittent problems. If the indicator registers within 2°F of the test point, the problem is in your sensor or wire.

MAXIMUM INC.

MYSTIC

INFORMATION FOR THE MERLIN USER

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 off and on, 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.

Shielded cables must be used with the wind sensors to ensure compliance with the Class B FCC limits.

MAXIMUM INC.

IMPORTANT ADDITIONAL INFORMATION

Components: Along with the indicator, the following components are included with this instrument:

Air Temperature Sensor w/60' Cable

110V AC Adaptor

3 Brass Screws

AC Adaptor: This instrument requires its own AC Adaptor. Due to the various power requirements of each Maximum instrument, attempting to run more than one instrument on a single adaptor could cause improper operation and/or damage to the instrument(s) thereby voiding your 5-year warranty.

Brass Case: Your brass case is solid brass A70-30 Holloware quality, with a durable lacquer finish. It is in fact a piece of jewelry and should be treated as such. It should be cleaned at least once a week to keep airborne pollutants (dust, etc…) and any moisture from collecting on the case thereby attacking the lacquer. At no time should you use an abrasive cleaner or cloth on the brass case. Simply use a soft cloth or soft paper towel with a mild glass cleaner to wipe the case clean. If your instruments are in a summer home, and you are not able to clean them regularly, simply lay a small cloth or towel across the top two-thirds so that dust cannot settle on the finish.

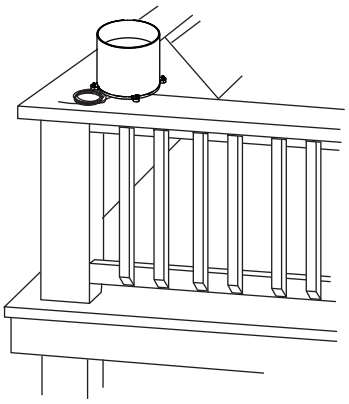
Specifications: All instrumentation or measuring devices have accuracy tolerances and specifications. Making comparisons between different pieces of equipment is appropriate provided the specified accuracies of both are known.

	Measurement Range	**Guaranteed Accuracy**
Temperature (Indicator)	-30 to 120°F	±1.5°F
Temperature (Sensor)		±.5°C., 1°F
Barometric Pressure	27.5 – 31.5 Inches of Hg	±0.08 Inches of Hg

RAINWATCH

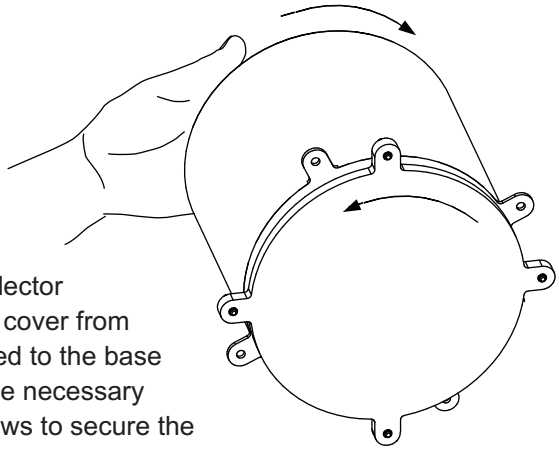
INSTALLATION

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



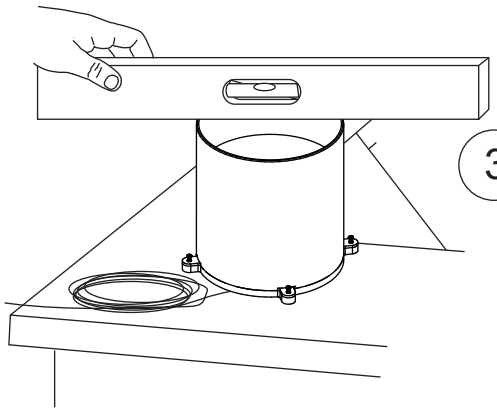
1

Select a level surface in an open area above ground to mount the collector. Some examples would be a deck or tree stump.



2

Rotate the collector to remove the cover from the base. Taped to the base you will find the necessary mounting screws to secure the base to your chosen mounting surface.

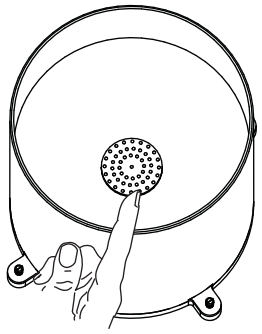


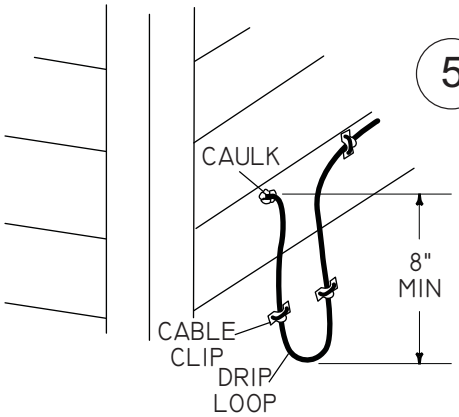
3

If the collector is not mounted absolutely level your readings will be incorrect.

4

Make sure that the plastic screen is in position in the collector.





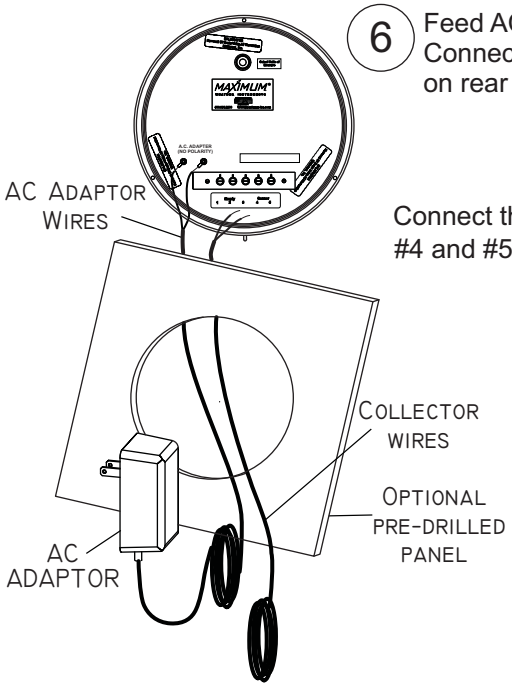
5

Run the wire into the house using insulated cable clips. Form a drip loop where the wire enters the house and caulk the feed through hole when done.

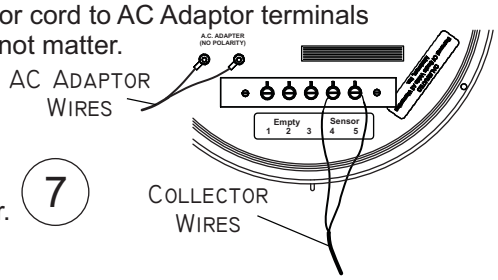
MAXIMUM INC

RAINWATCH

INSTALLATION (CONT.)

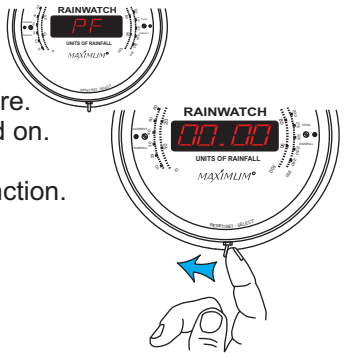


6 Feed AC adapter and collector wires through optional pre-drilled wood panel. Connect the wires from the AC Adaptor cord to AC Adaptor terminals on rear of display. The polarity does not matter.

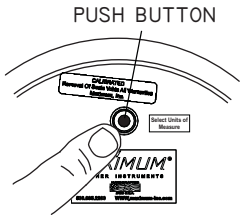


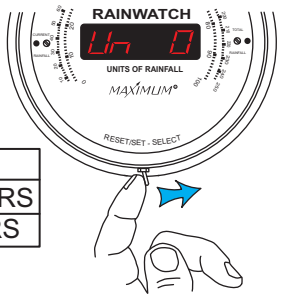
7 Connect the collector wires to terminals #4 and #5. The polarity does not matter.

8 Plug in the AC adaptor. The unit will go through a start up procedure. When done, "PF" will flash off and on. Toggle switch one time to the left (RESET/SET) to enter normal function. Unit will display current rainfall.

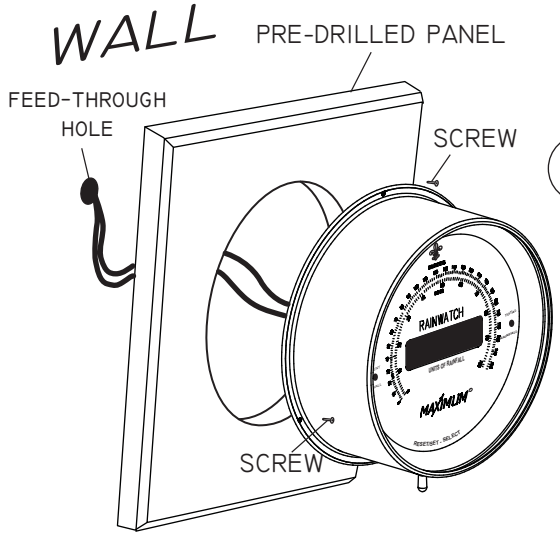


9 Select Unit of Measure. Unit is factory set to display in inches. To change from inches to other available units of measure, press the small push button switch on the back of the indicator. The display will show "Un" and a number. The number indicates the unit of measurement. Press the push button again to advance through the available units. When you have the code showing the unit of measurement you want, operate the toggle switch on bottom of the case to the right, (SELECT). Rainwatch will then return to normal operation with the display using the selected units.





Un 0	INCHES
Un 1	CENTIMETERS
Un 2	MILLIMETERS



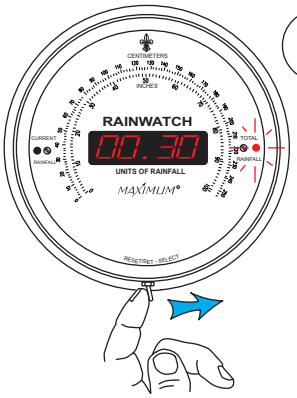
10 Mount the Brass Readout directly over the FEED-THROUGH HOLE to avoid crimping the wire. We recommend mounting the Readout on one of our pre-drilled and centered panels.

MAXIMUM INC

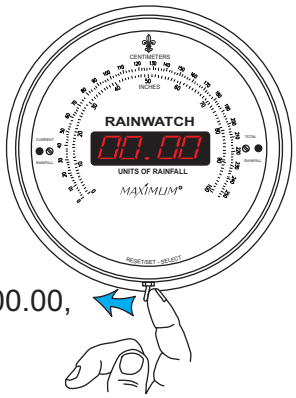
RAINWATCH

OPERATION

RAINWATCH has two "counters". They are shown on the face of the instrument as “CURRENT" and "TOTAL”. The counters are controlled by the switch at the bottom.



1 To switch between the “CURRENT” and “TOTAL” rainfall, toggle the switch to the right (SELECT).

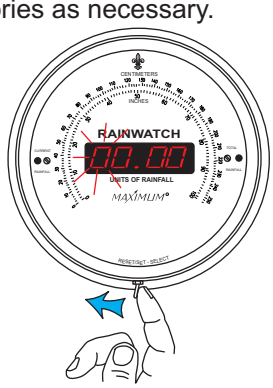


2 To reset the selected Rainfall counter, hold the switch to the left (RESET/SET) for 6 seconds and the count will reset to 00.00, then release.

OPERATION RELATED INFORMATION

Power Outages: During a power outage, Rainwatch will retain the values in it’s counters indefinitely. No further accumulation will be added until power is restored. If continuous operation during power outages is required, plug Rainwatch into an U.P.S. (Uninterruptable Power Source).

Manually Adding Counts: It is possible to manually add counts to both memories as necessary.



1) Make sure the Rainwatch is displaying the counter you want to set or add to (Total or Current).

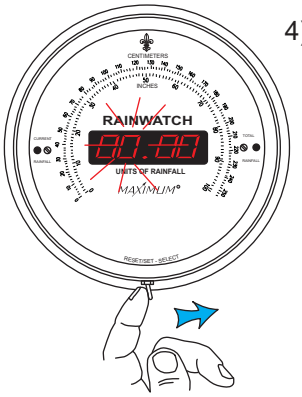
2) Operate the mode switch left (RESET/SET) and hold it for 10 seconds to enter the rainfall counter setting mode. The display will reset to zero after 6 seconds and the most significant digit (left most) will begin blinking after the mode switch is held for an additional 4 seconds (10 seconds total) indicating that it can be preset. Release the toggle switch.

3) To set the blinking display digit, operate the mode switch to the left (RESET/SET) side and let it return to the middle. The display number will advance by one. Continue to toggle the mode switch left, advancing to the number desired.

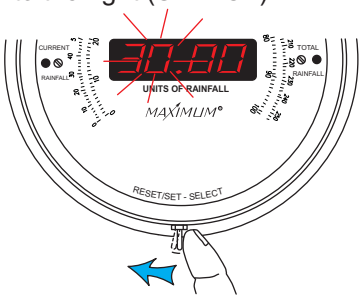
MAXIMUM INC

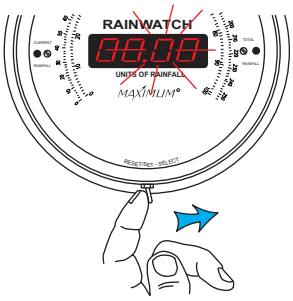
RAINWATCH

OPERATION RELATED INFORMATION CONTINUED



4) To advance to the next digit, toggle the Mode switch to the right (SELECT). The next digit to be set will begin blinking. Toggle the mode switch to the left to advance to the desired number.





5) Repeat step 4 for the third and fourth digit.

6) When complete, or after no activity for 10 seconds, the Rainwatch will automatically return to normal mode.

Freezing Weather: Freezing weather will not damage the unit. However, readings of snow or freezing rain may not correlate to actual rainfall amount.

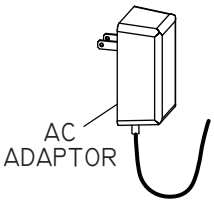
MAXIMUM INC

RAINWATCH

TROUBLE SHOOTING

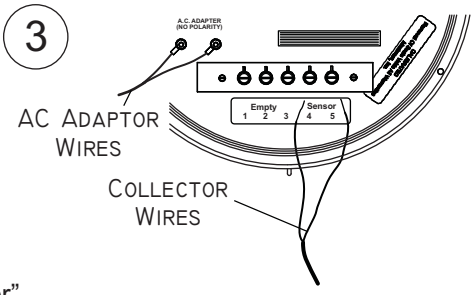
1 If the display is NOT lit check the voltage output from the AC Adaptor. This particular adaptor puts out between 11 and 15 VAC. If the voltage is not correct, then the adaptor is faulty.

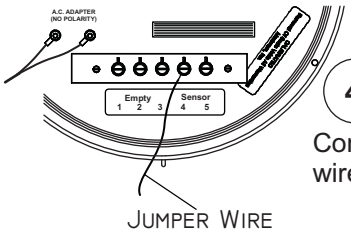
2 If the display IS lit and shows “Err” the power needs to be cycled to clear this message.



1) Unplug the AC adaptor from the 110 VAC power outlet.
2) Wait 15 seconds
3) Plug the AC adaptor back into the 110 VAC power outlet.
4) If the “Err” message does not clear, the unit needs service.

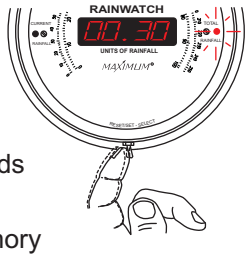
3 If the display IS lit but the unit is not counting, then remove the indicator from the wall and disconnect the collector wires from terminals #4 and #5.



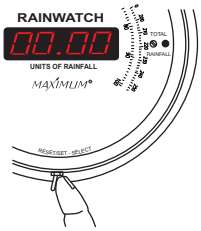


4 Connect one end of a 3" or 4" long “jumper” wire to terminal #4.

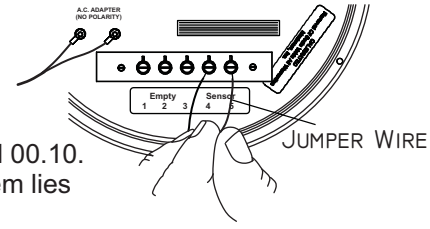
5 Reset the “memories” to 0.



1) Select the memory to reset by toggling the switch right (SELECT) to choose “CURENT” or “TOTAL”.
2) Hold toggle switch to left (RESET/SET) for 6 seconds and the count will zero.
3) Repeat steps 1 and 2 above to reset the other memory as well.



4) Using the free end of your jumper wire, touch terminal #5 and release it. The display should read 00.01.



5) Repeat step 4 nine more times. The display should then read 00.10. This indicates that the instrument is alright and that the problem lies in the wire or in the collector.

6 Contact the factory for advice as to how to troubleshoot the wire and the collector.

MAXIMUM INC

FCC NOTICE

Warning: Changes or modifications to this equipment not expressly approved by Maximum, Inc. in writing as the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 off and on, 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 the 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.

NOTES

MAXIMUM INC.

Electrical Damage - Common Causes & Recommended Prevention

Electrical damage can be caused by many different factors. Below are some of the more common causes and some suggested methods of minimizing potential problems.

Common Causes:

Storm Activity - lightening in your area can do damage to your instruments in different ways. The obvious way is due to a direct or nearby strike. In addition, lightening storms, dust storms, dry snowstorms and strong dry winds can all cause static electricity to build up on and around your external sensors. Regardless of the cause, this built up electricity itself through the cable connecting the external sensors to the instrument.

Power Surges - A surge may come from the electric company's switching generators or power grids, from local industries or after power interruption when accumulated power suddenly surges back through AC lines. Even the on-and-off switching of large electrical appliances, such as refrigerators or clothes dryers can create damaging fluctuations. This is especially true with sensitive weather recording devices.

Yourself - Are you constantly giving and/or receiving a shock every time you touch a doorknob or other person? If so, you have a great deal of static electricity in your environment. In either case, it is possible for a person to carry enough of a charge to damage an instrument.

Recommended Prevention:

Use Surge Protectors - for the AC adapter, a UL 1449 rated surge protector with EMI/RFI filtering is recommended. This rating will be clearly listed on the packaging of all good quality surge protector.

Discharge Yourself - If the instruments are located in an environment where static electricity is a problem, make sure that you discharge yourself before touching the instrument(s). The shock that you get from touching a doorknob or another person can often be sufficient to damage an instrument.