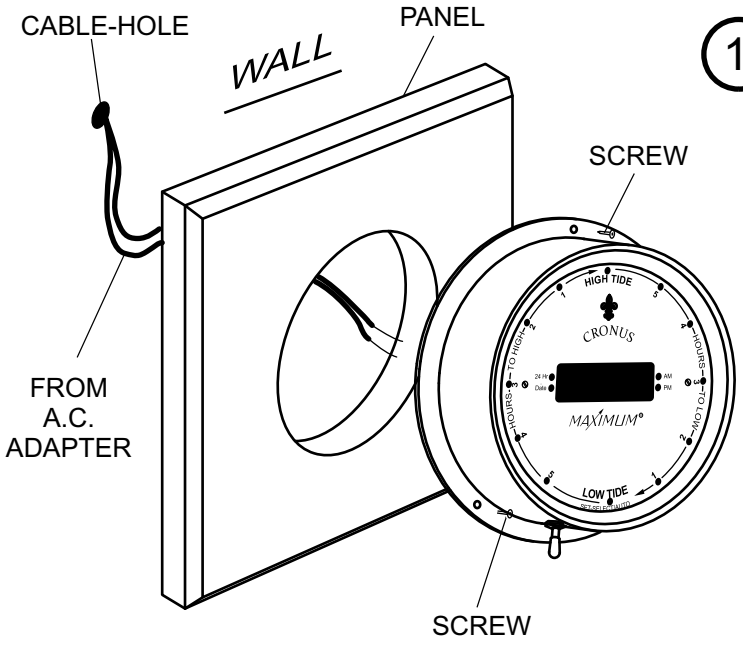
CRONUS

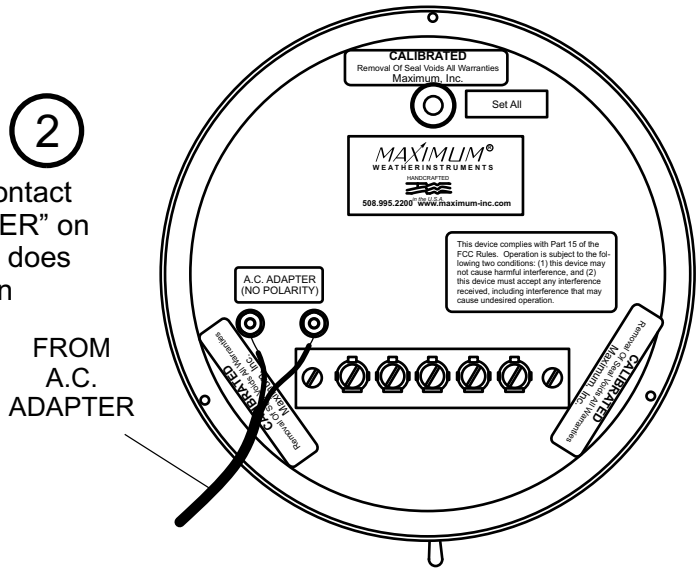
INSTALLATION

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 Feed wire from A.C. Adapter through wall and out. We recommend mounting the clock on one of our pre-drilled and centered panels.

2 Connect the wires from the A.C. Adaptor cable to the contact posts marked “A.C. ADAPTER” on rear of Cronus. The polarity does not matter so either wire can connect to either post.



3 Plug the A.C. Adapter into a 110Volt A.C. outlet.

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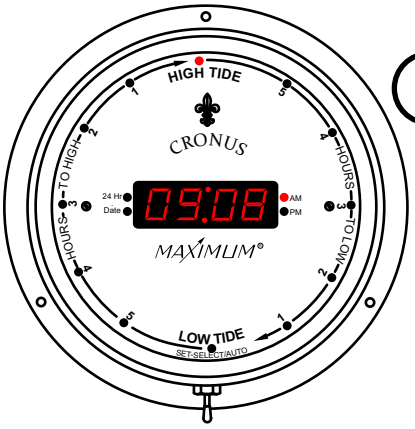
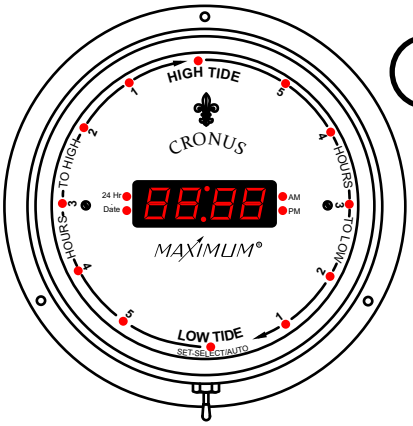
CRONUS
INSTALLATION (CONT.)



4 When Cronus starts up, it checks the tide time stored in the battery backed up memory. If it finds that the tide in memory is prior to the current time, it advances the tide time to the next tide in the future.

5

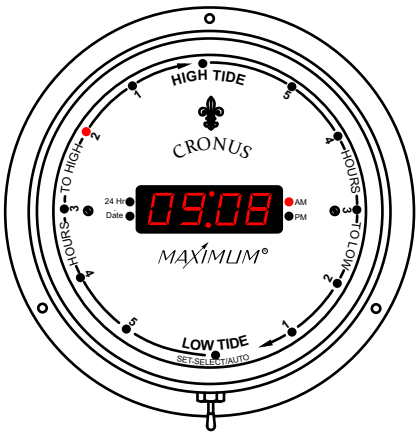
Normally you will be unaware of this action however, if the tide needs to advance a long way, you will see the words “HI” and “LO” appear alternately on the display It takes about four seconds to advance the tide one year.



6 Next, it will perform a brief self-test. All the LEDs will light for two seconds and then the display will count up going from 0000 to 1111 and on up to 9999.

7

Finally, Cronus will go to the “TIME” display mode.



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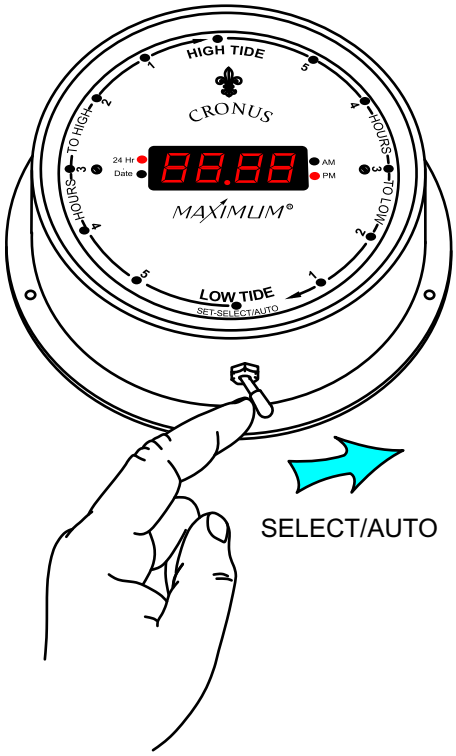
CRONUS
OPERATION



Pushing the switch to the right “SELECT/AUTO” and allowing it to return to the middle will toggle Cronus between time and date. This will be indicated by the illuminated function light (AM, PM, 24 hr or, Date).

Pushing the switch to the right “SELECT/AUTO” and holding it for at least three seconds will put Cronus into it’s auto-sequencing mode. Cronus will alternate between the time and date display automatically. Each function is displayed for approximately five seconds. To stop Cronus from auto-sequencing simply move the switch to the left “SET” and release it.

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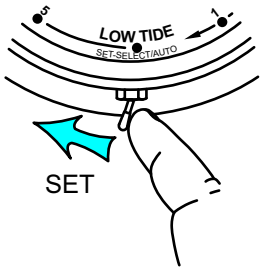
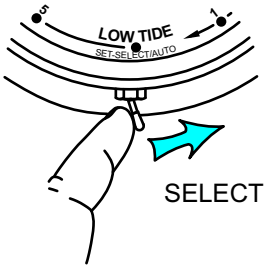


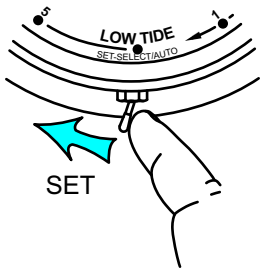
NOTE: During power outages, the display will turn off but the clock will continue to run on it’s internal batteries. The internal batteries will run the clock for up to 10 years in the absence of AC power.

SETTING VALUES AND OPTIONS



Cronus uses the same basic setting method for all values. The value being set will be flashing. Pressing the switch to the left “SET” will select different items to be set. Pressing the switch to the right, “SELECT”, will change the flashing value. When no values are flashing, and the “seconds”indicator is flashing twice per second. pressing the switch to left “SET” will end the setting operation.

The next sections describe the setting operations in detail.



NOTE: When you change the date or time settings, if the new settings make the currently set tide time invalid, Cronus will automatically calculate the new tide time for you.

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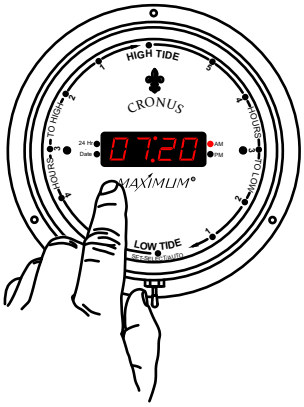
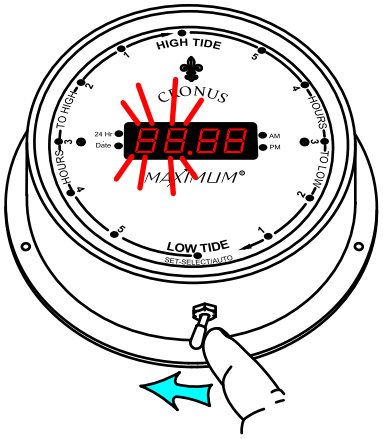
CRONUS

OPERATION (CONT.)

SETTING THE TIME

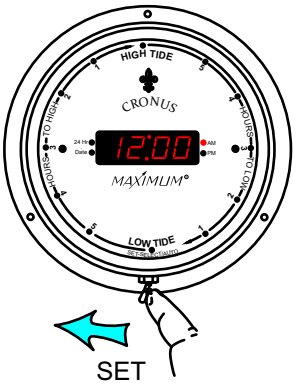


1 Make sure that Cronus is displaying time.



SET

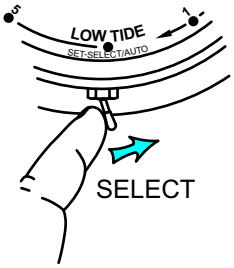
2 Push the switch to the left ,“SET” and hold it for about three seconds to initiate the time setting mode. The hours digits will be blinking to indicate that they can be set.



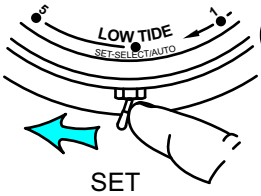
SET

3 To set the hour, push the switch to the left, “SET” and let it return to the middle, The hour will advance by one, if the hour is 11:00PM (23:00) it will to 12:00am (00:00).

4 To set the hour, push the switch to the right, “SELECT” and let it return to the middle to move to the minute’s tens digit.



SELECT



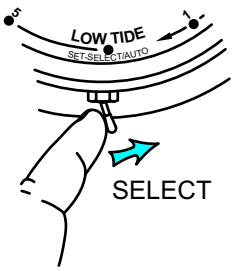
SET

5 Push the switch to the left, “SET” to change the number.

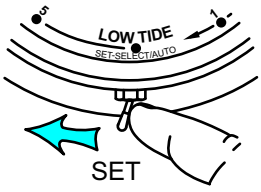
6 Repeat steps 4 and 5 for the minute’s one digit.

7 Push the switch to the right, “SELECT” and the final digit will stop flashing.

- If you need to change any of the values, simply push the switch to the right, “SELECT” and move through the digits again.
- If you are done setting the time, push the switch to the left “SET”. Cronus will exit the time setting mode and resume the normal time display.



SELECT



SET

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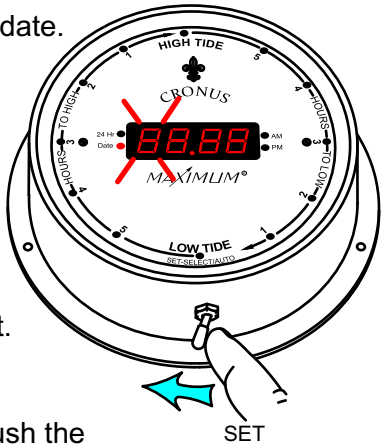
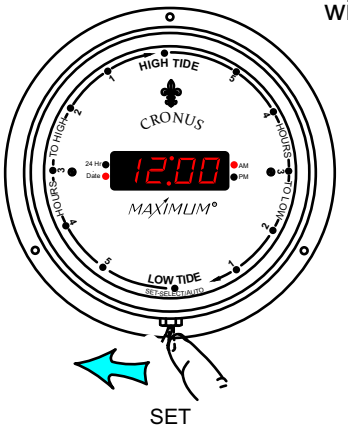
OPERATION (CONT.)

SETTING THE DATE

1 Make sure that Cronus is displaying date.

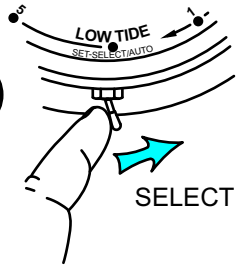


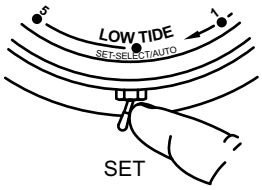
2 Push the switch to the left ,“SET” and hold it for about three seconds to initiate the date setting mode. The ten’s digit of the month will begin blinking to indicate that they can be set.



3 To set the ten’s digit of the month, push the switch to the left, “SET” and let it return to the middle, The month digit will advance by one.

4 To set the one’s digit of the month, push the switch to the right, “SELECT” and let it return to the middle to move to the month’s one’s digit.



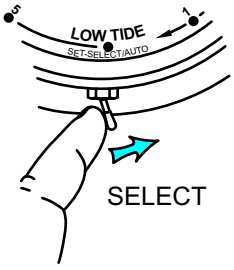


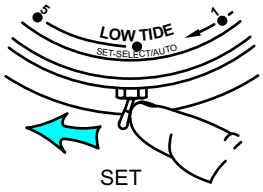
5 Push the switch to the left, “SET” to change the number.

6 Repeat steps 4 and 5 for the days ten’s and one’s digit.

7 Push the switch to the right, “SELECT” and the final digit will stop flashing.

- If you need to change any of the values, simply push the switch to the left, “SELECT” and move through the digits again.
- If you are done setting the time, push the switch to the left “SET”. Cronus will exit the date setting mode and resume the normal date display.





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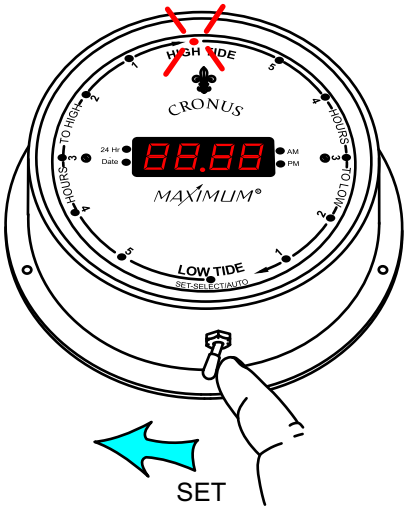
CRONUS

OPERATION (CONT.)

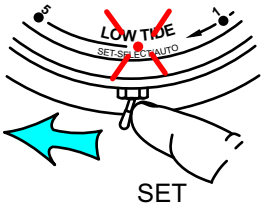
SETTING THE TIDE

YOU WILL NEED TO SET CRONUS TO THE NEXT TIDE THAT WILL OCCUR AT YOUR LOCATION

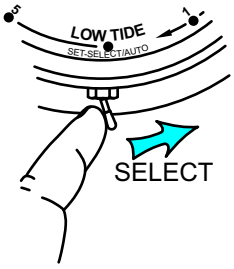


1 Push the switch to the left “SET” and hold it for six seconds to start the tide setting mode. After about three seconds the date or time setting mode will start, DO NOT release the switch. Once the tide setting mode has been started, the high or low tide LED, will be blinking to indicate that it can be set.

2

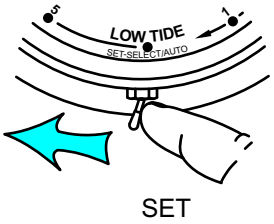


First you must tell Cronus whether the next tide is a high or a low. To set the tide LED, push the switch to the left “SET” and let it return to the middle. The other LED will light.

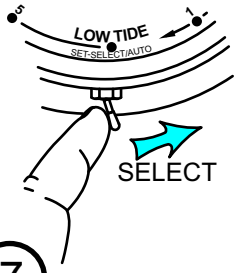


3 Push the switch to the right “SELECT” to move to the tide time hours ten’s digit.

4 Push the switch to the left, “SET” to change the number.



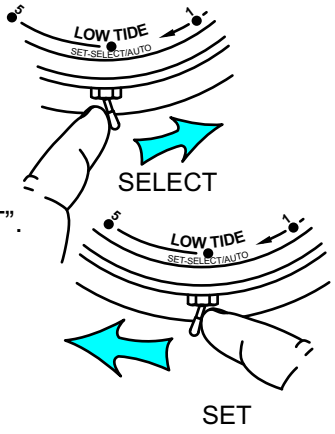
5 Push the switch to the right “SELECT” to move to the Tide Time one’s digit.



6 Repeat steps 3 and 4 for the minutes ten’s and the one’s digits.

7 Push the switch to the right, “SELECT” and the final digit will stop flashing.

- If you need to change any of the values, simply push the switch to the right, “SELECT” and move through the digits again.
- If you are done setting the time, push the switch to the left “SET”. Cronus will exit the time setting mode and resume the normal time display.



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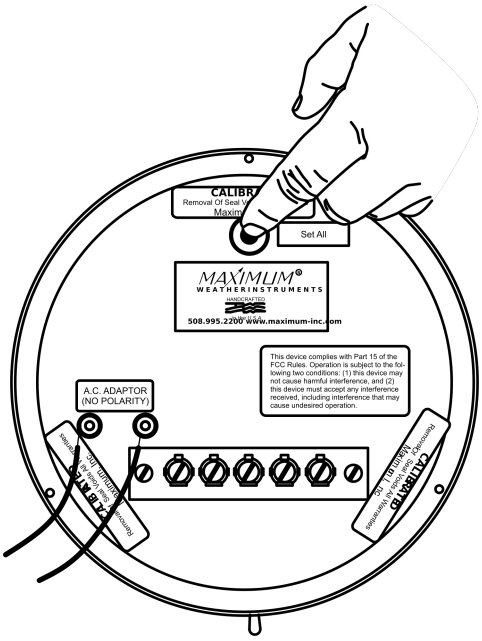


OPTIONS AND OTHER SETTINGS

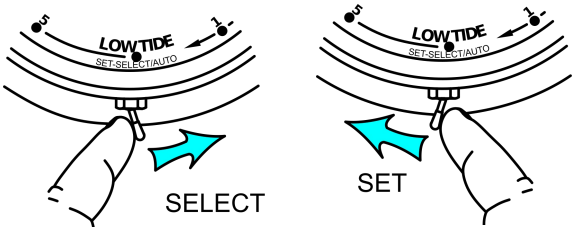
Cronus contains a number of settings that are changed infrequently. These settings are Year, AM/PM or 24Hour and, Automatic Daylight Saving enable. These can only be set by starting the set everything mode. To start the set everything mode, simply press and release the switch mounted on the back of the instrument. Cronus will start the set everything mode which consists of the following items in the order they are presented.

1. Year setting: Cronus can be set for any year from 2015 through 2099. The setting procedure is like the procedure used for setting time, date or, tide time as described on page 5.

2. Date setting: see page 5.

3. Automatic Daylight Saving Time enable: The display shows “UdS” for Use daylight Saving, followed by a flashing “0” or, “1”. “0” indicates that the feature is turned off, “1” indicates the feature is turned on. Use the “Set” switch to change the setting. When finished, press “Select” followed by “Set”, like the other setting functions, to go to the next function. Note: the daylight saving changes follow the North American standard. Time is advanced one hour at 2:00AM on the second Sunday of March and, set back one hour at 2:00AM on the first Sunday of November.

4. AM/PM or 24Hour display mode: Use the “SET” switch to alternate between the two modes. The small function lights will blink and the main display will show “24” or, “AP” to indicate which mode is selected. To finish press “SELECT” and then “SET” as with the other settings



5. Time setting: see above.

6. Tide setting: see above.

7. Brightness setting: You can adjust the brightness of the LED display in 16 steps to better match other instruments you own. When this setting mode is entered the current brightness value is shown preceded by a “b”. Press the “SET ALL” switch mounted on the back of the instrument to increase the brightness level. If the current brightness is at “b16” (maximum) when you press the “SET ALL” switch it will change to “b01” (minimum). The actual display brightness also changes at the same time as the value. When you are finished adjusting the brightness press the toggle switch to “SELECT”.

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HOW A TIDE CLOCK WORKS

It has been known for centuries that up and down the east coast, tides occur approximately 50 minutes later each day than they did the day before. The primary reason for this daily lag can be traced to the moon. It takes the earth 24 hours to make one complete rotation in relation to the sun. This rotation is called a “solar day”. It takes the moon 24 hours and 50 minutes to make one complete rotation around the earth. This rotation is called a “lunar day”. It is the moon’s close proximity to us and the relatively strong gravitational effect it has on the earth that causes the tides to follow the moon’s lunar schedule of 24 hours and 50 minutes per cycle.

While this lunar cycle is the primary force behind the workings of the tide, it is not the only force. On a daily basis the average tidal cycle of 24 hours and 50 minutes can be affected by such cosmic variables as the relative position of the earth to the sun and the specific elliptical pattern of the moon around the earth. Localized variables affecting daily tides also exist. These would include strong winds, changes in atmospheric pressure, distant storms and an infinite number of other atmospheric conditions. The total affect of all these different factors cause tides to vary around the average point of 24 hours and 50 minutes. These variations can cause the reading of your tide clock to be either fast or slow in relation to actual tides, by as much as one hour or more on any given day. However, the rhythmic 24 hour and 50 minute cycle will prevail over any given 28 day lunar period. Basically what all this means, is that on any give day the clock may read fast or slow, but over a 28-day period it will average itself out to be correct. For most purposes, high and/or low tide is not really a point in time, but a condition that exists over a period of time. If for some reason you require exact tide information you should always refer to a current tide table. The purpose of a tide clock is not to be exact, but to tell us the best approximate time to go swimming, fishing, boating, etc. For these functions a tide clock works just fine.

TROUBLESHOOTING

Latch Up

Power Line disturbances, improper powering up or an error in wiring may cause a blank or improper display reading. If Cronus is "latched up" in this way, proceed as follows:

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

INFORMATION FOR THE CRONUS 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

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 - lightning 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.