Aqua Rite Diagnostics Display

0) Average salt reading (2700 ppm -3400 pm is ideal)

1) Water temperature Fahrenheit

2) Cell voltage (22 – 26V range)

3) Cell amperage (4 -8a range when on, 0a when off)

4) Output %

5) Instant salt reading (displays as a negative number)

6) AquaRite model number (AL-X)

7) Board software revision (r1.XX)

8) T-cell setting

9) Duty Cycle

If T-cell setting DOES NOT appear on display it means that the board software revision is r.140 or lower.

1. Average salt reading (ASR)

This is a 24 hour average reading of salt measurement during ON cycles. 2700-3400 ppm is the idea recommended levels. However, the reading can go up to 4000 ppm before the Hi Salt light appears. The unit will still produce chlorine until the reading goes above 4000 ppm and the GENERATING light usually will go off. However, it doesn't ALWAYS go off so if the AquaRite panel still says it's generating consider yourself fortunate.

If the ASR falls below 2700 ppm the Check Salt light will start BLINKING. The unit is still generating chlorine. If the ASR falls to 2400 ppm or below the Check Salt Light will be SOLID. You may need additional salt but before adding the salt you should probably verify the salt level with a pool store or with a digital tester. If salt is needed start with one bag to see if that helps which should add 300-400 ppm to the ASR after 48 hours. If the reading remains the same there could be another issue going on.

2. Temperature (F)

This the water temperature reading in Fahrenheit. If you see a very low number such as 12 – 33 you probably have accidentally set the temperature to Celsius. Happens a lot when trying to reset the Instant Salt Level during the pushing of black diagnostic button. To correct the reading, start at the Average Salt Reading, push the diagnostic button once to get to Temperature. Move switch from Auto -> Superchlorinate -> Auto.

If water temperature gets below 60 degrees the AquaRite is designed to stop generating chlorine since algae can't grow in those temperatures.

If you see the word HOT it means the temperature sensor inside the cell has likely failed. While rare it appears to come from immersing part of the cord in acid when cleaning the cell.

3. Cell Voltage

Ideally 22-26V when the cell is in its' ON cycle (generating). When the cell is in it's OFF cycle voltage will be 30-35V.

4. Cell Amperage

Ideally 4.5 – 7.8a when cell is in its' ON cycle (generating). When the cell is in its' OFF cycle amperage will be 0a.

5. Output %

The is the digital number that corresponds to the black dial underneath the LCD display. Turn the dial to the right increases the output % and turning to the left decreases the output %.

6. Instant Salt Reading (ISR)

This is what the salt reading is NOW as measured by your system. Pool store readings and digital tester may give different readings although good testers are usually within 100 ppm. Pool store readings. can be off up to 8% because of a different calculation method. The ISR will only appear during ON cycles. During an OFF cycle you will likely see 0 ppm.

7. AquaRite Model No.

It is the name sent to an automation system.

AL-0 is AquaRite

AL-1 NatureSoft

AL-2 Mineral Springs

AL-3 SmartPure

AL-4 This changes the default display from average salt to percent output.

AL-5 This is used with Jandy automation.

Aquarite, NatureSoft, Mineral Springs and SmartPure are essentially the same unit with different branding. Hayward does private labels for certain companies. AL-0 to AL-3 are basically equivalent other than a superficial name change. AL-4 is not about the name, it just changes the default display. AL-5 needs to be selected for the Jandy automation to control the unit properly.

8. Software Revision

Over the years Hayward has updated the large PCB board behind the display panel. The revision starts with a lowercase "r" followed by 1.XX .   See T-Cell Setting below for major differences between r1.40 and lower vs r1.50 and higher.

9. T-Cell Setting

Appears only if Software revision is r1.50 or higher. Units with r1.40 or lower do not have this feature and it WILL NOT show up on display. If the software revision (aka firmware revision) is r1.40 or less then there two major items you should know. First you cannot change cell types. It's either set to T-5 or T-15 and it's difficult to change because it requires moving a jumper within the panel. Basically, if you always had a T-5 cell, stay with that cell. Same goes for T-15 cell. Or you can just upgrade to a newer board. Secondly the Duty Cycle is 120 minutes in length. We will talk more about that in a second. If r1.50 or higher, you have the ability to change the cell type to T-3, T-5, T-9, or T-15. You change the setting by

moving the switch from Auto-> Superchlorinate->Auto and repeat until you reach desired setting. Duty Cycle on these boards are 180 minutes.

10. Duty Cycle

Duty cycle and output % plus the number of hours you run your pump determines the length of time the salt cell generates. For example, software r1.40 or lower which has a duty cycle of 120 minutes, an output set to 50% and you run your pump 8 hours per day is explained as follows.

Hour 1: ON cycle is 60 minutes (120 minutes at 50% output). Display will show 22V-26V, 4.5-7.8a, ISR close or same to your ASR. Generating light ON.

Hour 2: OFF cycle is 60 minutes (the balance of the 120-minute duty cycle). Display will show 30-35V, 0a, 0 ISR. Generating light OFF.

Hours 3, 5, 7: Repeats Hour 1

Hours 4, 6, 8: Repeats Hour 2

In this example the cell will generate for 4 hours and will be off for 4 hours.

Changing the duty cycle higher or lower AND/OR change the pump run time higher or lower will change the amount of time the cell is in it's ON cycle vs OFF cycle.

So, if the pump was running 12 hours per day and everything else was equal then the cell would be on for 6 hours and off for 6 hours.

But if the duty was increased to 75% with the pump running 8 hours the ON cycle would be 90 minutes and the OFF cycle would be 30 minutes.

For software revision 1.50 or higher the duty cycle is 180 minutes. Everything else involving output % and pump run time remains the same as well as voltage, amperage, and ISR.