

Technical Note #105

Problems with Min/Max Readings

Symptoms

The MIN or MAX readings reported on the controller's home page for PH and/or ORP readings are wrong. The readings are excessively high or low. Usually, just the MAX or just the MIN reading is wrong. The graphs appear correct and don't reflect these high or low values.

Causes

- AC power voltage spike.
- Defective or loose electrode connector.
- Defective or damaged probe.
- EMI/RF Interference.

Troubleshooting Procedure

1. If installation was performed in the last 24 hours, wait an additional 24 hours before troubleshooting the problem. It is possible that during the installation process the electrodes were out of the water, were connected or disconnected for short periods of time, or the Probe Modules were moved and/or briefly disconnected. Any of these events will cause bad MIN or MAX readings. These readings are stored in memory and will not clear for at least 24 hours.
2. Check probe BNC connectors at the Probe Modules. Make sure they are firmly screwed on and seated against the metal stop pin. Note that it is normal for the readings to jump around while your fingers are in contact with the metal parts of the BNC connector.
3. Write the MIN and MAX values and time of day on a piece of paper. Check again in 24 hours. If the time of day for the MIN or MAX readings are the same from day to day, then there is an appliance at the aquarium (i.e., high power lighting) or a timed event somewhere in the building (i.e., outside lighting, equipment backwash) that is causing a voltage spike. These events won't show up on the graphs because graphs are sampled every few minutes while the MIN/MAX is sampled every second. The voltage spike may be causing electrical interference on the AC power line or causing radio frequency interference in the aquarium water. In either case, this rarely causes any harm to the Lighthouse Pro. Fixing this problem can be done by plugging the Lighthouse Pro into a surge suppressor or a computer-style battery backup UPS. The lighting plug or offending appliance may also require a separate plug-in surge suppressor. Plugging the lights in a separate circuit from the breaker panel may also alleviate the problem.