Getting the Most Out of Your Silicon Dioxide Batteries/Optimizing Your Silicon Dioxide Batteries:

Silicon dioxide batteries, AKA Lead Crystal or SiO2 batteries are designed to provide dependable power in conditions that would ruin most other battery types. They can outperform lead-acid and lithium batteries at high and low temperature extremes, charge faster than lead-acid, and don't off-gas, or require maintenance. All that said, they still perform their best under certain conditions…

"Bulk" or "Absorption" Charging: These charge at the higher range of charging voltages for typical lead-acid batteries 14.4V – 14.7V, with 14.6V being the optimal voltage suggested by the manufacturer. Most charge controllers and vehicle alternators reach 14.4V, or just above. Some battery settings on charge controllers, such as "Flooded" or "Gel" may not reach that high, so charging could be slower and inefficient. "Sealed" "Lithium" and "Custom/User Defined" settings usually have higher available voltages and can allow for user adjustment.

Maximum/Optimal Charging Current is 25% of Ah capacity. This is usually expressed as a 0.25C, C/4, or a 4-hour Charge Rate from 100% discharge.
Charging at lower current is fine, but these batteries actually charge more efficiently at the maximum rate, as the higher current helps lower charging resistance of the electrolyte. This also minimizes run time for generators, and reduces fuel use, and also reduces RV and boat docking time for grid power AC charging, so you can cut your waiting time by almost half.

"Float" Charging voltage range is 13.5V - 13.8V. When fully charged, these batteries have a shelf-life of up to 2 years, so float charging may not be necessary in circumstances where fuel conservation and charging from a generator is limited. Regular lead acid, lithium, and especially nickel-iron batteries require much more frequent float charge "top-ups".

"Equalization or De-sulphation" charge settings are not necessary for these batteries. This function on multi-stage chargers should be turned off, or if it is 14.7V or less, it can be left as another Bulk charging cycle for the batteries.

When the battery is fully charged, there is often an initial "surface charge" voltage generally starting at around 13.5V with no load, and will stabilize at around 13.05V after 4-6hrs. Or you can run a small load on the battery for a brief period to dissipate the surface charge for a more accurate voltmeter reading. This is common behavior with most lead-acid batteries as well.

The State of Charge vs Voltage chart (attached) is for zero to minimal load on the batteries, if there is a load on the batteries, then the voltage readings will be lower.

This should help you fine-tune your charging and monitoring systems to optimize the performance of your battery.