

Dear partners!

I would like to draw your attention to the **automatic regeneration of the free chlorine electrode** (automatic cleaning). This applies to stations that perform dosing by direct measurement of free chlorine concentration, namely:

Crystal P: free CL, pH, art. 03-00-000-00;
Crystal P: free CL, pH, Rx, art. 03-02-000-00;
Crystal M: free CL, pH, art. 03-06-000-00;
Crystal M: free CL, pH, Rx, art. 03-08-000-00;
Crystal 4-20: free CL, pH, art. 03-12-000-00 (until 2020 it was called Crystal);
Crystal 4-20: free CL, pH, Rx, art. 03-14-000-00 (until 2020 it was called Crystal).

In our Installation and Operation Manual for CRYSTAL stations, this function is described in cl. 4.6.4. Setting up CL-electrode regeneration sessions.

The CRYSTAL stations use a free chlorine potentiostatic electrode, which is a glass electrode with a gold ring at the end. During operation, deposits (various salts dissolved in water, organic matter, etc.) accumulate on the gold ring of the electrode, which affect the sensitivity of the electrode. As a result, over time, the free chlorine values measured by the electrode may differ significantly from the values measured with the photometer. This problem is solved by mechanical cleaning of the gold ring with special cleaning pastes (at the least, with toothpaste), partially - with a special liquid electrode cleaner.

Automatic regeneration of the free chlorine electrode (automatic cleaning) can significantly increase the cycle between mechanical cleanings of the gold ring of the free chlorine electrode (it is not a complete replacement).

In the factory setting of the station controller, this function is disabled (number of regeneration sessions: 0), since in the vast majority of pools it is not required, therefore we recommend not to use the CL electrode regeneration function. If during operation you notice that the readings on the display of the station controller began to differ significantly from the readings measured using the photometer by more than 0.1 mg/l (for example, within one day) over and over, then you need to activate the free chlorine electrode automatic regeneration function (by setting the number of sessions to 1). Pools where it is required to automatically regenerate the CL electrode more than once a day are very rare.

I draw your attention to possible errors when measuring the concentration of free chlorine with a photometer (human factor). It is advisable to do this measurement three times in a row (cleaning the cuvette, water withdrawal, adding a reagent, etc.) – in order to choose an average value, discarding the extreme ones (small and large), thereby increasing the probability of an objective measurement.

After choosing the number of sessions, for example, once a day, it is necessary to select the start time for the CL-electrode regeneration session. It is very important that the beginning of the session does not coincide with the time when the filtration pump is not working (if you have a periodic filtration system), when the filter is automatically flushed (if present) or when the pool is most filled with visitors. The best time for this is at night.

What happens to the controller when the free chlorine electrode is automatically regenerated? Let's say you have programmed the beginning of the first scheduled regeneration session, for example, at 10:00 and the time has come:

1. The CL, pH, Rx diodes on the panel go down.
2. The measurement of free chlorine is prohibited.
3. The last CL value in mg/l “freezes” on the display before the start of the regeneration session.
4. The dosing of sodium hypochlorite by the pump is prohibited.
5. The following test periodically appears in the two upper lines on the display:
"Cell: CL electrode regeneration 17min" - countdown time. During this countdown time, it is impossible to calibrate the CL electrode – the system does not “let” to do it for the next 20 minutes.

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All restrictions are canceled 20 minutes after the start of the regeneration session. The free chlorine value may be slightly higher than it was before the start of the regeneration session – this is a consequence of automatic cleaning of the CL electrode, this is normal.

After the end of the first regeneration session, it is recommended to calibrate the CL-electrode within 2-3 hours, but no more than 12 hours later. It is not necessary to calibrate the CL electrode at the subsequent regeneration sessions.

The main conclusion: the automatic regeneration of the free chlorine electrode (automatic cleaning) should be used “wisely” only when this has been repeatedly detected during the operation of a particular pool and do not forget about the periodic mechanical cleaning of the free chlorine electrode.

Best regards, DARIN