aseko welldana® USER'S MANUAL EN

CLF PROBE

THE MOST ADVANCED FREE-CHLORINE PROBE

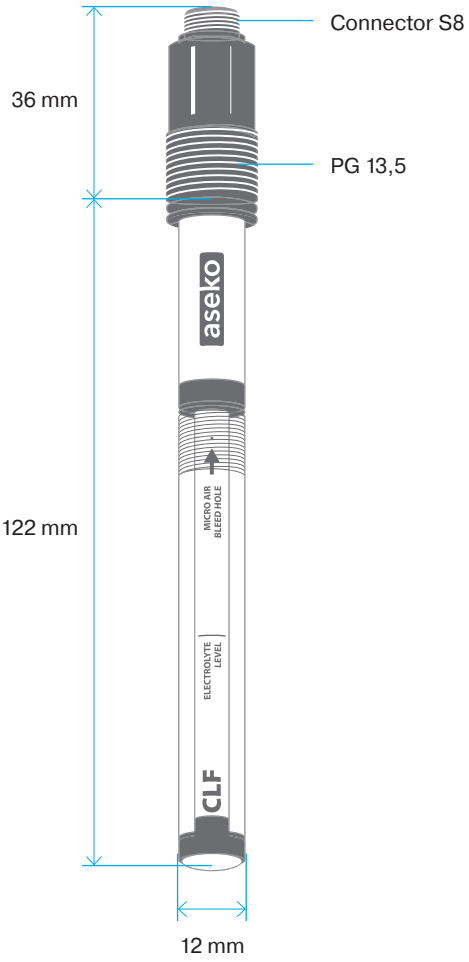
www.asekopool.com

What's in the box

CLF Probe #12052
(incl. membrane module for CLF Probe)

Membrane module for CLF Probe
#12029

Electrolyte for CLF Probe
#12071



ASEKO CLF Probe

The ASEKO CLF probe is intended for measurement of free chlorine content in water. The unique structure of the membrane probe with the built-in electronics makes it possible to use the free chlorine probe even under conditions where other probes cannot be used. The probe is designed to be screwed into a flow well being part of ASIN Aqua automatons controlling pool water quality.

Theory

Free chlorine is a compound of gaseous chlorine (Cl2), hypochlorous acid (HOCl), and hypochlorite (OCl–). All molecular chlorine above pH 4.0 is converted to HOCl and OCl–. Hypochlorous acid is a more active disinfectant than hypochlorite, exists in balance and depends on pH. Free chlorine also combines with naturally existing or artificially delivered nitrogen compounds in water while producing chloramine, also known as bound chlorine.

Ammonia brought by users to pool water produces chloramines. Monochloramine (NH2Cl), chloramine (SnCl2), and trichloramine (NCl3) are less active as disinfectants but they have longer lifetime than free chlorine. Total chlorine is a compound of free chlorine (Cl2, HOCl, and OCl–) and bound chlorine (NH2Cl, NHCl2, NCl3).

The CLF probe principle is based on two electrodes (anode and cathode) that measure a current change caused by chemical reduction of hypochlorous acid on the cathode. Current flowing due to this reduction is proportional to chlorine concentration. The membrane and electrolyte help control this reaction.

Technical specification

Range	0-3 mg Cl/l
Output (uncalibrated)	5-600 mV
Weight	32 g (without electrolyte)
Diameter	12 mm
Length	155 mm
CLF calibration stability	approx. 3 months
Operating conditions	
Overpressure	0-1 bar (not under pressure)
Operating temperature	+5-40˚C
Measured water flow	30-60 l/hour
Connector	S8
Thread	PG 13,5

First start procedure

1. Unscrew the membrane module.
2. Fill the module with electrolyte up to a mark (see “Electrolyte Filling”).
3. Tap the module to remove possible air bubbles.
4. Easy screw the electrode into the module while keeping the module with a hole up and holding its lower part (membrane) with a finger (the finger must be clean, free of grease) so as not to break or deform it.
5. An excess electrolyte will slowly flow off through a miniature hole in a part where the module is threaded.
6. Before inserting the probe into the automaton flow well, shake the probe similarly as shaking off a clinical thermometer (always with the connector up).

Electrolyte filling

Fill the CLF probe membrane module with the original electrolyte up to the mark.

Membrane module screwing

DO NOT STICK OVER, DO NOT COVER
the microscopic vent hole nor close it in any other way!

Grasp the module so that you cover the membrane with your finger (the finger must be clean, free of grease) at the module bottom.

While carefully screwing the module into the probe, you feel the probe tip pushing the membrane.

Until screwing is finished, keep on holding the membrane with your finger to prevent the membrane from being damaged by pressure of excess air and electrolyte flowing off through a microscopic hole in the membrane.

Tension
before screwing

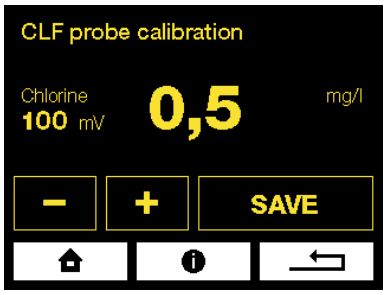
Correct tension
after screwing

Correct membrane tension

1. After screwing has been finished, it must be noticeable that the membrane is stretched out by the probe tip.
2. The probe tip must be in contact with the membrane.
3. Stretch out the membrane sufficiently.
4. The microscopic vent hole in the CLF probe REMAINS UNCOVERED !!!

Calibration

Insert the probe into the probe housing of the ASIN AQUA and turn the device ON. Let the probe stabilize for approx. 24 hours and then commit the calibration. We recommend calibrating the probe to the concentration level that shall be maintained automatically. Perform calibration under stable conditions.



Do not calibrate the probe until the water in the pool is perfectly mixed and **the value on the ASIN AQUA display is stable.**

This may take several hours.

Calibration is performed by entering the manually measured value of chlorine concentration (using a photometer) in the CALIBRATION menu.

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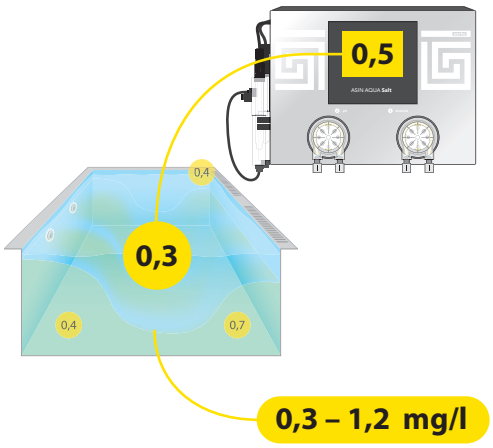
Calibration is **not necessary** if the difference between value measured by the photometer and value displayed on the ASIN AQUA device is **less than 0.2 mg / liter**.



Perform the calibration with a chlorine concentration in the range of **0.3 - 1.2 mg / l**, **and with a measured value equal to or greater than the required value**.

Calibration restrictions

The CLF probe cannot be calibrated if the output signal is lower than 20mV.
The CLF probe can only be calibrated at a free chlorine concentration of 0.3 to 5.0 mg / l.

Probe Maintenance

In case of outdoor pools being put out of service through the winter season, it is necessary to remove the probe from the well and unscrew it from the membrane module, rinse all with clean water (be aware that water must not enter the connector) and store in a dry place at room temperature. While the probe is in operation, its calibration can fail or the probe starts showing error data. In this case it is necessary to replace electrolyte, the membrane module or the entire probe.

Electrolyte Replacement

Proceed similarly as in the case of commissioning: Unscrew the membrane module. Clean the probe tip and body using a paper and do not touch it any more. Rinse the membrane module with distilled water. Unless the situation is remedied, the membrane is probably damaged and it is necessary to order a new membrane module, refurbish or replace the probe with a new one.

Disposal

The probe design minimises the environmental impact. According to the Directive 2002/96/EC of the European Parliament and of the Council, the probes must be disposed of as electrical or electronic waste not as municipal waste.

Responsibility

The firm ASEKO is expressly not responsible for direct or indirect losses caused by the use of probes. Install the probes so as to ensure that no damage to property and health occurs in case of a failure of the probes due to their limited lifetime, resulting from their design and properties. We highly recommend to ensure check measurements on a regular basis in the difficult applications (public pools, whirlpools, extreme conditions).

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