

# Finding Solutions - Troubleshooting

## pH Sensor Readings & Measurements



### My Smart Pool & Spa Partner





# Troubleshooting

## pH Sensor Readings & Measurements



« Not sure about the pH sensor readings & measurements? »

### 5 steps to confirm pH sensor readings

- 1 Check if pH sensor requires cleaning or is broken
- 2 Check if pH sensor needs replacement
- 3 Mineral water test
- 4 Calibrate the pH sensor
- 5 Check reaction to chemical products



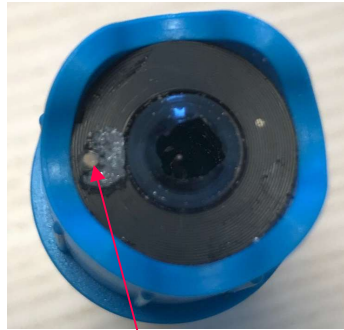
# Troubleshooting

## pH Sensor Readings & Measurements

### 1 Check if pH sensor requires cleaning or is broken



Clean Sensor



Dirty Sensor



Broken Sensor



1 Clean Sensor head with a dry cloth and clean water

2 Reboot ICO to turn into Fast Mode<sup>1</sup> and check 4 to 5 next measurements

3 If broken, change the pH sensor

(1) Fast Mode is 1 reading every 10 min for 1 hour then ICO turns back to Normal Mode 1 reading every 1 hour



# Troubleshooting

## pH Sensor Readings & Measurements

### 2 Check if pH sensor needs replacement <sup>1</sup>

5 cases where you can need to replace the pH sensor

- 1 If  $\text{pH} < 0$
- 2 If it stays between  $4 < \text{pH} < 5$
- 3 If it stays between  $10 < \text{pH} < 11$
- 4 If repeated rapid shifts  $> 1$  pH within 2-3 hours without any change of environment (water temperature, add of chemicals, change of water, ...)
- 5 If after adding chemicals it does the opposite effect than expected.

In the other cases, please see mineral water test and sensor calibration

(1) Sensors have a 2-years warranty



# Troubleshooting

## pH Sensor Readings & Measurements

### 3 Mineral water test

1 Get mineral water with pH level indicated



pH is indicated on the water specification sticker (see comparison table next page)

Notice: pH information is valid for brand new water, just opened as water pH may vary along hours after opening

2

Place ICO in a container, sensors immersed into the mineral water

3

Reboot ICO to turn into Fast Mode1 and check 4 to 5 next measurements

4

If pH delta ICO vs Mineral water is superior to 0.3 pH, calibrate the sensor (cf section 4)



# Troubleshooting

## pH Sensor Readings & Measurements

### A COMPARISON OF 6 TOP BOTTLED WATER BRANDS

■ Excellent  
■ Bad



WATER QUALITY						
SOURCE	Artesian	Municipal	Volcanic Well	Artesian	Municipal	Mineral
TREATMENT	N/A	Vapor Distilled	N/A	N/A	Reverse Osmosis	N/A
TASTE	Neutral	Flat	Clean	Clean	Smooth	Slightly Salty
ALKALINITY						
PH	6.0	6.5	7.6 - 8.2	7.7	9.5	7.2
NATURALLY ALKALINE	Yes	No	Yes	Yes	No	Yes
SODIUM BICARBONATE	No	Yes	No	No	Yes	No
MINERALS	Low	Low	Medium	Medium	Very Low	High
ELECTROLYTES	Low	Low	High	High	Very Low	High
SUSTAINABILITY						
CARBON NEUTRAL	No	No	Yes	No	No	No
COMMUNITY						
CHARITY PROGRAMS	Yes	No	Yes	Yes	No	No
PACKAGING						
BPA FREE	Yes	Yes	Yes	Yes	Yes	Yes
MADE FROM 100% RECYCLED MATERIALS	No	No	Yes	No	No	No
OVERALL SCORE						
	6	4	9	8	5	7

Source: <https://waiakeasprings.com/bottled-water-brand-comparison/>



### 4 Calibrate the pH sensor

Calibrating ICO sensors enables to reset the readings and measurements with reference pH solutions.

Through calibration, ICO will determine if a pH sensor is fully functional or defective.

1 Cf ICO Calibration Guide online

<https://ondilo.com/wp-content/uploads/2018/11/Manuel-CALIBRATION-GB.pdf>



2 Reboot ICO to turn into Fast Mode and check 4 to 5 next measurements

3 If pH sensor is fully functional and readings remain inconsistent, check pH sensor reaction to chemicals (cf section 5)



### 5 Check reaction to chemical products

Goal is to determine if pH readings are disturbed by the pool or spa water treatment.

*Notice: so far, we have identified only Active Oxygen treatment having strong effects on pH, going up and down during a couple of hours after dosing.*

- 1 Add to the mineral water (cf section 3) a quantity of your chemicals. Start with the pH-/pH+ products according to your habits. Ideally, with the help of the product notice, you define pH impact + or – you are looking after, from the quantity added. Make sure to dilute the product before going next step.
- 2 Reboot ICO to turn into Fast Mode and check 4 to 5 next measurements
- 3 If pH readings remain inconsistent, inform our Customer Service by specifying which chemical product you have used.
- 4 If pH are consistent, re-do the test into your pool or spa. If problem persists, inform our Customer Service by providing all information you can about your pool or spa environment (equipment, water source, ..)





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