pH Sensor
User manual

1 Description

The pH sensor is compatible with the WiMo and WiMo Plus range.

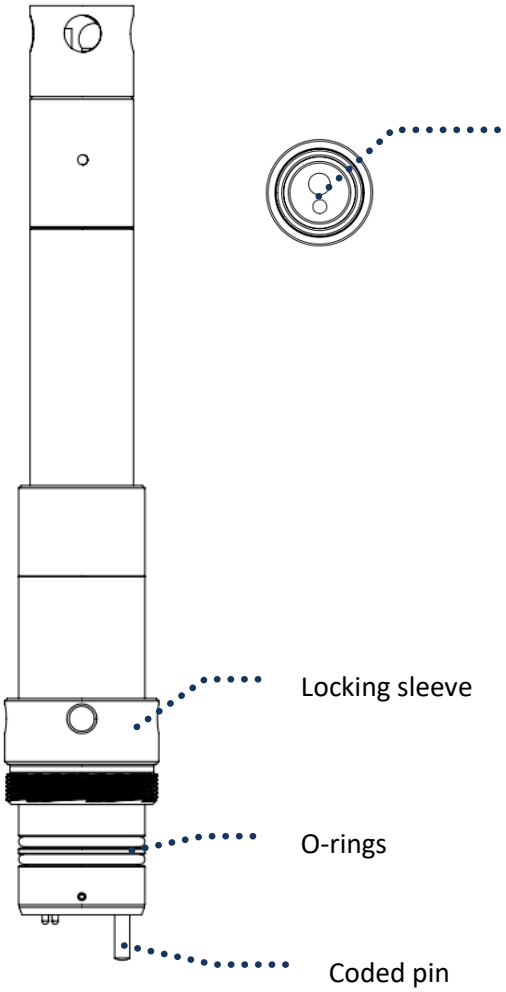
The hydrogen potential, more commonly known as pH, is used to measure the acidity or basicity of a solution. The pH of pure water at 25°C, which is equal to 7, has been chosen as the reference value for a neutral medium.

If the measured solutions have a pH below 7, then they are said to be acidic. The acidity of the solution increases as the pH decreases. Otherwise, if the measured solutions have a pH higher than 7 then they are said to be basic. The basicity of the solution increases with pH.

The sensor consists of a measuring base and an interchangeable cartridge. The lifetime of the pH cartridge depends on the immersion medium but is generally 1 year.

The sensor is calibrated with pH standard solutions.

The pH sensor is also compatible with Mosens Modbus



Technologie / Technology	Electrode
Gamme / Range	0 -14- pH
Exactitude / Accuracy	0,1 pH
Résolution / Precision	0,01 pH
Profondeur max / Max deph	50 m

⚠ Before deployment, remove the cap.

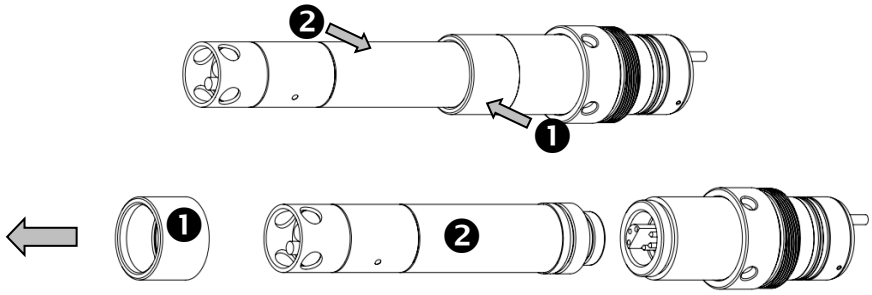
2 pH cartridge replacement

The pH cartridge must be replaced in a dry and sheltered place. Once installed, the cartridge must not be removed until it is replaced with a new one.

To remove the cartridge unscrew the locking sleeve ❶ and remove it from the sensor. Pull on the cartridge ❷ to separate it from the pH module part.

Prepare the new cartridge by properly greasing the seals. Insert the new cartridge, taking care to align the two connectors. Screw on the locking sleeve❶.

Your new cartridge is installed.



Mounting/Dismantling

Calibrate the pH sensor after installing the module and before using it in-situ.

3 Sensor response time

The response time of a sensor is the time required for the sensor to respond to a known change in its measurement and reach a percentage of its final value. A response time of 63% (T63) or 90% (T90) of the final value is often mentioned. In order to compare response times between sensors it is essential to know what percentage of the final value has been calculated.

Response Time	***Type***	***Value***
pH	T63	< 5sec

4 Adjustment

Sensor adjustment is a simple process requiring the use of adjustment standards.

nke Instrumentation will provide you with the procedure to perform this adjustment.

You will also need the "Metrology Interface" tool and the dedicated "WiMo_Calibration-Tool" to perform this adjustment.

https://nke-instrumentation.fr/produit/wimo-calibration-tool-2/

We recommend to contact our sales department for more information.

5 Recommandations

Replace the pH cartridge every 12 months or less to ensure the performance of this sensor.

The pH sensor **will not be cleaned** if a cleaning system is connected to the probe.

Regular maintenance of the equipment will ensure maximum longevity. A thorough visual inspection should be carried out regularly and any damaged parts should be replaced.

The pressure measurement is done at the top of the probe. There is therefore a position offset between the pressure measurement and the measurements made by the sensors. The position offset with respect to the pressure sensor is : 14.7 cm.

For the measurement, it is recommended to remove the bubbles trapped under the pH glass bulb.

If the sensor is taken out of service, it must be rinsed, dried and stored dry with its protective cap.

6 Maintenance

6.1 Precautions

 The glass electrode is vulnerable to:

- Chemical products (organic solvents, strong acids and bases, peroxide, hydrocarbons),
- Mechanical treatments (impacts).

The probe must always be kept clean, especially in the area around the pH bulb. The presence of biofilm on the pH bulb can cause measurement errors.

6.2 O-rings maintenance

The O-rings seal the probe. Any O-rings damaged can affect the reliability of the sonde. A visual inspection must be done each time a sensor is plugged or unplugged and also when battery compartment is opened. Check that no hair-type, particle-like elements are found on the O-rings. If the surface has impurities, gently clean them with a non-fluffy wipe and lightly grease the O-rings with molykote grease. Any damaged O-rings must be changed.

6.3 Cleaning

The pH sensor requires regular maintenance to guarantee its performance over time. It is necessary to clean the sensor regularly, the frequency depending on the medium of immersion, and should be higher for media that heavily foul the electrodes so as to maintain its performance as long as possible.

For the pH bulb, a dirty bulb should be cleaned with hot soapy water.

If the sensor is taken out of service, it should be rinsed before storage, and the protective cap should be replaced with the protective case and a damp absorbent surface (such as cotton).

Thoroughly rinse the sensor and bulb with clean water.

For pH glass: If deposits such as biofilm or sludge persist, place the sensor in a cleaning solution for a few hours and rinse thoroughly before use.

Avoid using a soft cloth or paper towel because the glass ball is extremely vulnerable to friction.

7 Return a product to the factory

For a consideration of your product by our after-sales service it is essential to follow the RMA procedure. Any material returned without an RMA number will not be taken into account.

- In case of shipment for repair or expertise, obtain an RMA number by using the procedure available on the website:
  https://nke-instrumentation.com/product-return-form/

- Pack the product in its original shipping box to prevent damage in transit.