



PHS-1000 Series pH Sensors

Operating & Installation Instructions

NOTES

- pHS-1000 Series sensors are fully compatible with AT Systems controllers.
- Each electrode is a quality product and is individually tested and Packaged.
- pH electrodes have limited suitability for storage, so it is highly recommended to not store them for a period longer than 3 months.
- Do not let the electrodes dry out. Electrodes are provided with a rinsing cap/container to prevent the sensing element from drying.
- Sensors must be kept in 3M KCl solution. If however, electrode was kept dry for an extended period, immersed the electrode in 3M KCl solution for about 24 hours.
- The pH sensitive membrane glass should be handled carefully. Avoid skin contact and protect against damage.
- Make sure that the electrical connections are kept clean and dry.



Electrode body can be pressurized after extended use under increased process pressure.

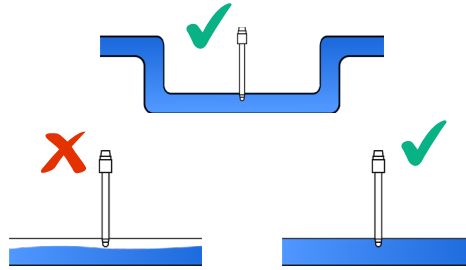
Electrode body must be handled carefully and safety glasses and gloves must be worn.



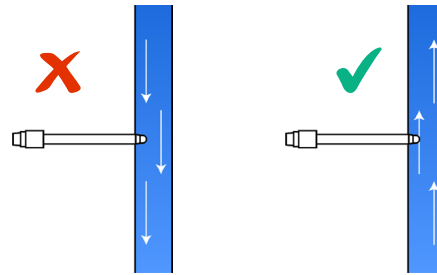
Electrode must not be allowed to dry out during use or storage. Electrode must not be kept immersed in distilled water.

INSTALLATION

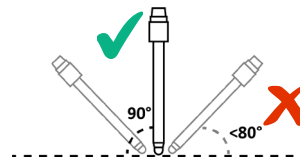
- Install the pH sensor in a line which does not run dry even when the process stops.



- In a vertical line, sensor must be installed in a line where flow is upwards.



- Sensor must be installed perpendicular to the line. Maximum angle to the line is 80°.



- When screwing the sensor into a designated fitting, maximum allowed torque for PHS-1003 and PHS-1004 is 3Nm and for PHS-1001 and PHS-1002 is 5Nm.
- The internal buffer must cover the inside surface of the membrane glass. Air bubbles in the membrane chamber must be removed by light shaking of the sensor.
- Avoid over tightening to prevent any physical damage to the sensor.
- Sensors are provided with 5 meter wire. So sensors should be installed with 5 meter from the controllers installation points. If distance with the controller and the pH sensor is more than 5 meters, an offline housing is required (use of offline housing increases the response time of the sensor).
- There should be no joints in the connections or it can cause deviation in readings.

CALIBRATION

Rinse sensor thoroughly before performing calibration for each calibration solution and sensor should not touch the bottom of the container.

For detailed calibration process, please refer to the controller's instruction manual.

CLEANING



The membrane glass must never be exposed to aggressive or abrasive cleaning agents (scouring milk etc.)! Avoid scratching the membrane glass during cleaning process.

- Impurities that have accumulated on the surface of the membrane glass and diaphragm must be removed.
- The electrode must be adequately washed off after every cleaning.
- If cleaning with soft moist tissue proves unsuccessful, various cleaning methods can be used depending on the type of impurity:

Type of accumulation	Cleaning Agent
Lime and metal hydroxide coatings	Diluted HCl (1-3%)
Grease and oils	Organic solutions (i.e ethanol) or a solution containing a surfactant (dish washing detergent, etc.)
Protein	Pepsin in diluted HCl
Accumulation containing sulfides	Cleaning mixture consisting of HCl and thiurea
Inorganic coatings	HCl (0.1 mol/l) or caustic soda (0.1mol/l)

MAINTENANCE

- Under normal conditions of stable, non-extreme pH values, electrode cleaning is recommended every 7 days with calibration every 14 days.
- pH electrodes are naturally consumed by the loss of salt from the reference system. A deviation in measurement values after some time is therefore a normal measuring behaviour.
- If measured values drift, clean the electrode and perform calibration.
- Adjust the cleaning and calibration cycle depending on the application and process parameters.

SERVICE LIFE & WARRANTY

- pH sensors are wear parts. Their operational capability (service life) depends highly on care and conditions of usage. A pH sensor can last from a few days to several years depending on the conditions of usage, therefore, a credible guaranty for minimum service life cannot be provided.
- If there is a defect in material or manufacturing, please contact the supplier.

DISPOSAL



- Do not dispose off the sensor in waste bin after use.
- Observe country specific laws and regulations for waste management and disposal to properly dispose off the sensor.