



pH SENSOR FOR MEASUREMENTS UNDER PRESSURE



ISO 9001

BÜCHI - THE WAY TO GET RESULTS!



The «Büchi» pH sensor assembly genuinely benefits the user. The pH value of liquids in the laboratory autoclave vessel can be measured under pressure as well as in vacuum.

The permissible working range of the pH sensor is:

pH	0 to 14
Pressure	-1 to 60 bar
Temperature:	0 to 110°C

Close cooperation with a leading manufacturer of sensors resulted in a technically perfected instrument whose simplicity and sturdiness has been proven in practical applications.

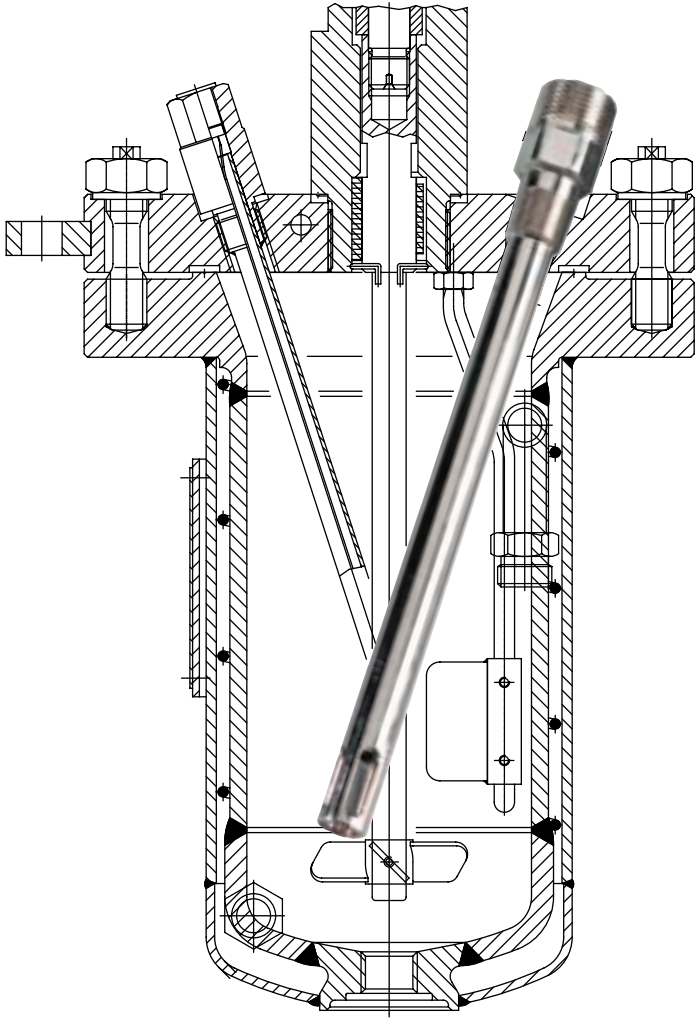
The pH sensor assembly consists of two parts:

A stainless-steel protection tube which can be screwed into the 3/8" NPT opening in the Büchi autoclave cover plate.

A glass combination electrode with a goldplated head.
The two sealing elements are Viton or Klarez O-rings.

The sensor assembly is furnished with 3 metres of coaxial cable and can be connected to most commercially available pH meters. Data can be captured electronically with the «büchi•data•system bds sc94».

The measuring accuracy of the pH sensor is in the range of 5%. However, the exact calibration of the sensor is of much greater importance. Calibration with a buffer solution is essential prior to conducting experiments involving the determination of the exact pH value.



Pressure resistance of the combination electrode

The pressure inside the pH sensor must be the same as the ambient pressure to enable pH measurements at high pressure. The new pH sensor has therefore been provided with a pressure-equalization opening.

The sensor itself is not subject to wear. Only the electrolyte – the liquid with which the sensor is filled – needs to be refilled from time to time.

How are the measurements made?

When the pH measurement is being made, the potential of the measuring electrode (pH electrode) is compared with that of the reference electrode. Today, both electrodes are usually installed in a single combination electrode. The tip of the glass sensor is designed in such a manner (diaphragm) that H or OH ions change the electrical conductivity of the electrolyte by a diffusion process. The pH value can be derived from the change in potential between the measuring and reference electrode.



Installation in the Büchi autoclave vessels

The protection tube (standard 1.4435) for the pH sensor is available in lengths of 180 and 210 mm. Shorter protection tubes and other materials such as Hastelloy etc. can be supplied on request. The sensor assembly can be used in vessels of various types and volumes. The table shows the installation configurations. Installation in other vessels is conditional and Büchi AG must be consulted in such cases.

Cover plate

The protection tube is furnished with a 3/8" NPT male thread. Cover plates with only Gi 1/4" threads can be modified by Büchi AG in most cases.

Protective tube length Type	vessel types		
	1	2	3 and 4
short 180 mm	1.0 litres	1.0 litres	1.0 litres
			2.0 litres
			3.0 litres
long, 210 mm	1.5 litres	1.5 litres	



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