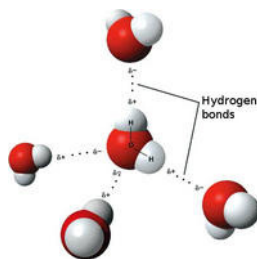


## BASE BA-PH pH and Redox Measurement in Liquids

The BAGGI BA-PH is part of the **BAGGI BASE®** Instruments Series. They are the result of combining the latest state-of-the-art-technology with over 50 years of industry experience.



The BA-PH analyzer is designed for the measurement of pH in liquids, typically drinking water, aquaculture systems, rivers, lakes, waste water, industrial process liquids. In industrial applications, often other chemical/physical values have to be analyzed. Therefore the instrument can be delivered in a multipurpose package containing e.g. an Oil-in-Water analyzer (fluorescence spectroscopy based) and an H<sub>2</sub>S in Water concentration analyzer (UV spectroscopy based). All the sensors share the same Control Unit.

The probes consist of an electrode and an impedance converter. The impedance converter is placed immediately over the electrode for eliminating electrical noise problems. The probe is sealed and it can operate while being completely submersed. The electrical voltage across the electrodes is function of the pH but also of the temperature. Therefore a temperature sensor is integrated within the probe for applying the correct compensation. Alternatively, if an independent sensor for measuring the process temperature is already available, its signal can be fed to the Control Unit. Probes can be supplied with a cleaning system. The figure shows an optional inlet to be connected to an instrument air supply. In such a way, a high pressure air flow can be directed towards the electrodes, for cleaning purpose. Alternatively, water and cleaning agents can be used. The related solenoid valve is operated by the Control Unit. When the analyzer has to be used in a potentially explosive atmosphere (ATEX), a pneumatic valve is delivered instead.

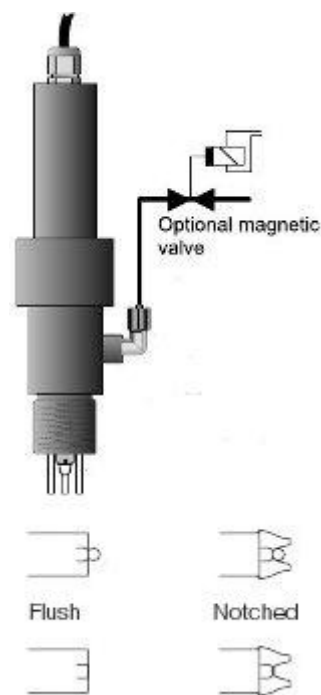
Different types of sensors (probes) are available, according to the application:

- Submersion mounting
- In-line mounting
- Antimony electrode
- Glass electrode
- Flush electrode surface (for ease of cleaning)
- Notched electrode surface (for protection in case of retractable sensors)

In the Oil & Gas field, pH sensors are often placed directly in the process line, downstream from the condenser at the top of the distillation tower. Here temperatures and pressures are high and BAGGI is able to design and install sample conditioning systems to cool the condensed water and reduce the pressure. This leads to longer sensor life and easier sensor removal for cleaning and calibration.

To minimise corrosion, neutralization chemicals (such as organic amines) can be added into the top of the tower. In a closed control loop operation, the Control Unit is in charge of actuating the relevant feeding valve. Another typical applications is pH measurement of refineries waste water.

A retraction housing is available to insert/extract the sensor without disturbing the process.



The same technology used in the pH sensors is able to measure the Redox (ORP: Oxidation Reduction Potential).

All the product characteristics remain the same.

The figure beneath shows the Control Unit in the ATEX certified version. This one is contained within a Stainless Steel 316L enclosure provided with a protective air purge system and a Vortex cooler (connected to the plant instrument air). Magnetic push buttons allow controlling

the system without opening the cabinet.  
ATEX compliance:

- II 2 G Ex px II T6
- II 3 G Ex pz II T6

The Control Unit allows prompt software upgrades by means of USB keys. Therefore it is very easy to add applications for managing additional galvanic sensors (e.g. for dissolved CO<sub>2</sub> or O<sub>3</sub> measurements) and spectrophotometers (e.g. for H<sub>2</sub>S measurement).



Sensor Specifications	
<b>Range</b>	0 to 14 pH -1500 mV to +1500 mV (Redox)
<b>Sample temperature</b>	10 °C to 100 °C (typical) -20 °C to 80 °C (Antimony) 10 °C to 140 °C (coated)
<b>Sample pressure (max)</b>	100 psi 200 psi (high pressure model)
<b>Types</b>	Flat glass, General purpose glass, Antimony, Coating for high temperatures
<b>Temperature sensor</b>	Pt100
<b>Dimensions</b>	225 mm Length x 50 mm Diameter (approx. – according to the model)
Control/Verification Unit Specifications (ATEX version)	
<b>External input/output (according to the application packages installed)</b>	<ul style="list-style-type: none"> <li>- Analog input: four inputs filtered with transient protection</li> <li>- Analog output: three isolated outputs, 4 – 20 mA (standard)</li> <li>- Analog output: three additional isolated outputs (optional)</li> <li>- Digital input: six digital inputs (optional)</li> <li>- Digital output: four isolated relay signals (alarm and warning)</li> <li>- Digital output: four additional relay signals (optional)</li> <li>- Serial line: RS-232/RS-422/RS-485 with Modbus/Profibus/FieldbusFoundationProtocol</li> <li>- Ethernet card: two 10/100 mbps with RJ-45 port</li> <li>- One integrated WiFi card 11 Mbit/s</li> </ul>
<b>Power</b>	90-264 VAC, 47-63 Hz; 6A max
<b>Operating environment</b>	- 0 °C to 40 °C (32 °F to 104 °F) - 0 °C to 55 °C (32 °F to 131 °F) with vortex cooler
<b>Enclosure protection</b>	IP66
<b>Dimensions/Weight</b>	- Wall Mount: 500mm H x 400mm L x 250mm D (19.68" H x 15.74" L x 9.84" D) - Weight: 15 Kg approx.
<b>ATEX Compliance</b>	II 2 G Ex px II T6 II 3 G Ex pz II T6

All the specifications subject to change without notice

For specific requirements, please contact the e-mail address below:  
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